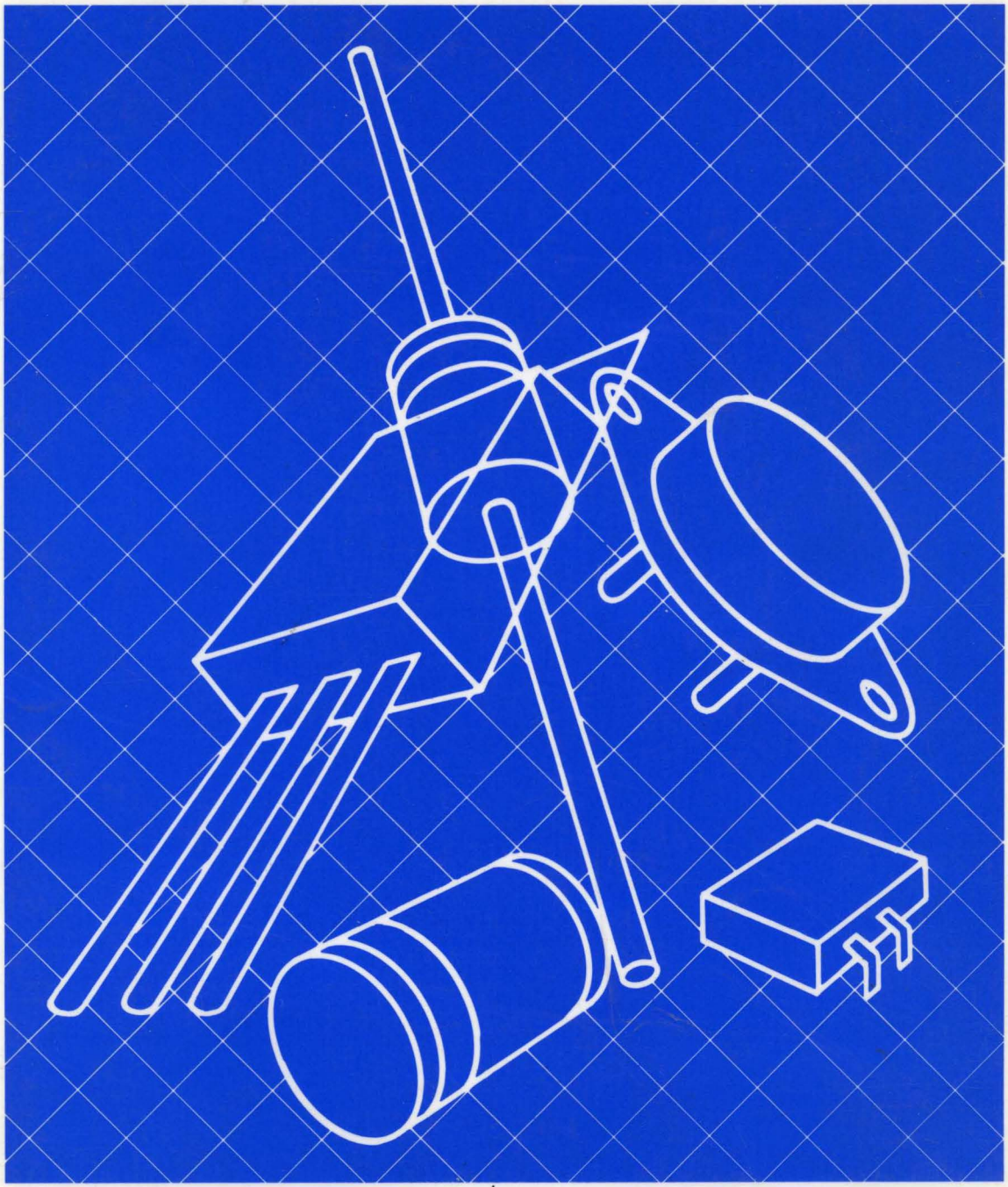
Power Semiconductors



1986

GENERAL INSTRUMENT

GENERAL INSTRUMENT Power Semiconductor Division DATA BOOK 1986/1987

GENERAL INSTRUMENT

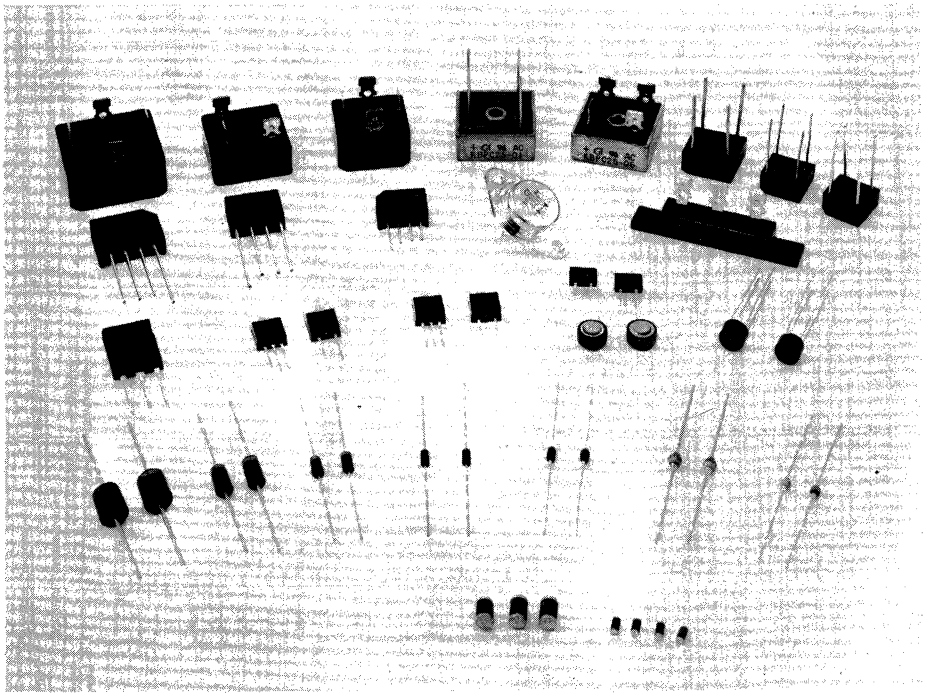
Introduction

General Instrument Corporation is a major multinational company manufacturing a wide range of products from data systems, broadband communications, and components to semiconductor products. The corporation, which has been in existance over 50 years, has manufacturing and sales locations throughout the world serving all major electronic markets.

The discrete semiconductor division has manufacturing facilities in the United States and the Far East and is one of the leading producers of discrete semiconductor devices. These devices include low and medium power rectifiers from standard thru ultrafast recovery, bridge assemblies, transient voltage suppressors, and power mosfets. We offer the widest selection of rectifier package types and junction structures including plastic encapsulated, glass passivated, superectifier, and super surface mounted. Advanced junction technologies include double diffusion, double diffused fast recovery, narrow base epitaxial, Schottky, and YMOS.

Particular emphasis has been focused on the superectifier product family including our new super surface mounted devices. The superectifier, when introduced ten years ago, increased rectifier reliability by several orders of magnitude. Today it still remains unmatched as the cost performance leader in axial leaded rectifiers. Now the superectifier features of metallurgically bonded junction, glass passivation, and flame retardent encapsulation are available in our line of super surface mounted rectifiers. For the ultimate in surface mounted rectifier reliability it's super surface mount.

The information contained in this data book is intended to provide the necessary technical and support data to assist the design engineer. It is our policy to maintain high standards of product manufacturer. The General Instrument logo (GI), printed on every component, ensures that it reaches the highest level of quality and reliability. In the complex and competitive semiconductor industry, high standards of quality using the latest methods of statistical quality control are of the utmost importance since they constitute, for our customer, the assurance of reliable product performance.



Not every application problem can be solved using a standard device, in this case we often develop special products to meet the customer requirements. If in doubt, call your local Sales Office or our Application Engineering Laboratory for further information.

SYMBOLS

BV_{DSS}	Drain-Source Breakdown Voltage	$R_{\theta jc}$	Thermal Resistance Junction-to-case
C_{iss}	Input Capacitance	$R_{TH(J-A)}$	Thermal Resistance (Junction to Ambient)
C_{oss}	Output Capacitance	$R_{TH(J-C)}$	Thermal Resistance (Junction to Case)
C_{rss}	Reverse Transfer Capacitance	T_A	Ambient Temperature
gfs	Forward Transconductance	T_C	Case Temperature
I_D	Continuous Drain Current	$t_{d(off)}$	Turn-off Delay Time
I_{DM}	Pulsed Drain Current	$td_{(on)}$	Turn-on Delay Time
$I_{D(on)}$	On-State Drain Current	t_f	Fall Time
I_{DR}	Continuous Reverse Drain Current	T_L	Maximum Lead Temperature
I_{DRM}	Pulsed Reverse Drain Current	t_r	Rise Time
I_{DSS}	Zero Gate Voltage Drain Current	t_{rr}	Reverse Recovery Time
I_F	Forward Current	V_{BR}	Breakdown Voltage
$I_{F(AV)}$	Average Forward Rectified Current	V_{DGR}	Drain-Source Voltage (R_{GS} = 1K OHM)
I_{FSM}	Peak Forward Surge Current	V_{DS}	Drain-Source Voltage
I_{GSS}	Gate-Source Leakage Current	V_F	Forward Voltage
I_{LM}	Clamped Inductive Current	V_{FR}	Forward Recovery Voltage
I_O	Mean Forward Current	V_{GS}	Gate-Source Voltage
I_R	Reverse Current	$V_{GS(th)}$	Gate Threshold Voltage
I_{rr}	Reverse Recovery Current	V_R	Reverse Voltage
I_{RSM}	Maximum Non-Repetitive Peak Current	V_{RMS}	RMS Input Voltage
I_T	On-State Test Current	V_{RRM}	Repetitive Peak Reverse Voltage
I^2t	I^2t Rating for Fusing	V_{RSM}	Maximum Reverse Voltage (Clamping Voltage) at I_{RSM}
P_D	Steady State Power Dissipation	V_{RWM}	Working Peak Reverse Voltage (Stand-Off Voltage)
P_{PK}	Peak Power Dissipation	V_{SD}	Forward Diode Voltage
Q_{GS}	Gate Charge (To 10V V_{GS})	V_Z	Zener Voltage
$R_{DS(on)}$	Static Drain-Source On-Resistance	Z_K	Dynamic Impedance

DRAWINGS

All dimensions in inches and (mm).
Figures not to scale.

TEMPERATURES

Ratings at 25°C ambient temperature unless otherwise specified.

GENERAL INSTRUMENT

Power Semiconductor Division

DATA BOOK 1986/87

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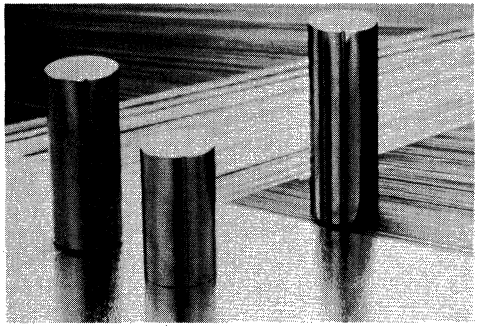
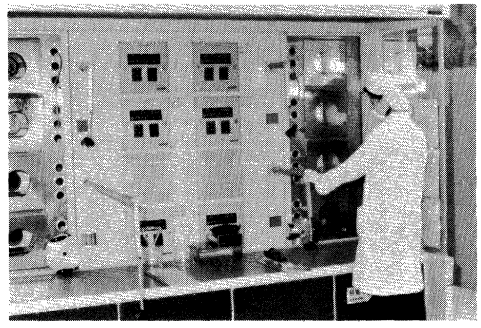
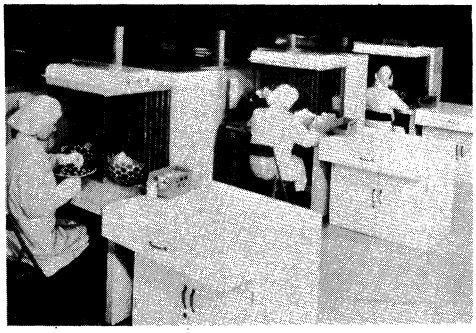
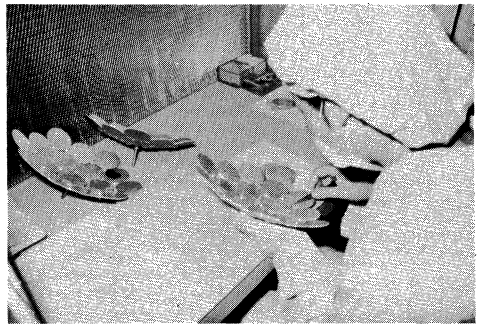
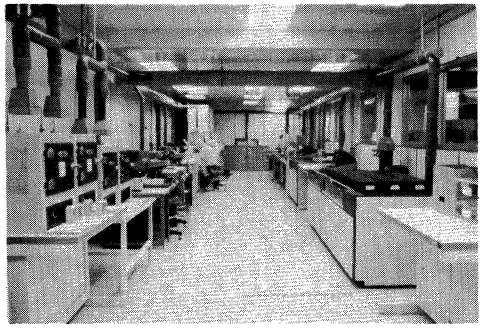










Introduction

Quality and Reliability Engineering of the Discrete Semiconductor Division extends its services to the areas of materials and product analysis, statistical quality control, reliability evaluation, quality inspection and development of new test methods.

Headquartered in New York, it assumes the responsibility for the development, implementation and administration of the Quality Assurance and statistical quality control programs for all operations of the Division, both domestic and foreign.

At our manufacturing plants, rigid and extensive in-process statistical quality controls are utilized such that the quality and reliability of our products are consistent and repeatable. The laboratories of our facilities are equipped with the latest high-level instrumentation and staffed with skilled technicians and engineers.

Professional expertise and the most modern scientific equipment maintains our position of excellence and leadership as the foremost producer of semiconductor devices, and assures that the quality levels of our products, from inspection and test of raw materials to final approval of completed devices, meet the highest standards of the industry.

We offer...

- Top-flight specialists and modern facilities.
- Experienced Test and Reliability Engineers.
- Statistical Quality Control.
- Fully equipped laboratories able to perform all types of scientific investigation.

Services of the Materials and Device Analysis Section

- Testing, inspection and evaluation of materials and products utilizing the facilities of the electrical, mechanical, high-reliability and chemical analysis departments of our laboratories.
- Research and development of testing methods.
- Inspection of materials to ensure compliance by suppliers and contractors to specifications.
- Failure analysis to determine the cause of breakdown in materials or components.
- Qualification testing of military devices in accordance with applicable military specifications. The laboratories are qualfiied to perform testing to MIL-S-19500, MIL-STD-750, MIL-STD-202, and also are qualified to MIL-STD-883 tests under MIL-M-38510. Qualification approvals (QPL listing) were awarded by the United States, Canadian and West German Departments of Defense.
- A continuing program of military reliability (JAN-TX) also is in progress to assure conformance to the requirements for aerospace and the military.

Operational Life
Conditions: Rated voltage, rated current, for 1000 hours at 25°C.

DC Blocking
Conditions: Rated voltage for 1000 hours at 100°C in inert environment.

Storage Life
Conditions: 100°C for 1000 hours in inert environment.

Lead Pull
Conditions: Axial pull to destruction.

Lead Fatigue
Conditions: Number of 90-degree bends with 0.5 kg weight attached to lead.

Moisture Resistance
Conditions: 85°C, 85% Relative Humidity for 10 days.

Solderability
Conditions: 95% coverage within 1.2 mm of device body.

Temperature Cyclin
Conditions: −65°C to +175°C.

Shock
Conditions: 5 blows of 1500 g's.

Vibration (Constant)
Conditions: 20 g's at 60 Hz $\pm$ 20 Hz.

Acceleration
Conditions: 20,000 g's.

Salt Atmosphere
Conditions: 5% solution for 24 hours at 35°C.

Flammability
Conditions: Encapsulating compound, General Instrument's proprietary formulas, GI-4B or GI-5A is self-extinguishing, recognized and registered by Underwriters' Laboratories, U.S.

Moisture Capabilities of Diodes, Rectifiers, and Bridges

Conditions: T_a = 25°C to 85°C in Operating Mode Suitability Tested by Reverse Leakage Current at Rated Voltage

	Yearly Average				
Device	≥ 95% RH	≥ 85% RH	100% RH 30 Days Continuous	95% RH 30 Days Continuous	Balance Occasional 100% RH
GPD	■		■		■
GPR	■		■		■
GP10		■	■		■
GP15		■	■		■
GP20	■		■		■
GP30	■		■		■
DO41		■		■	■
WO Series	■		■		■
KBP Series	■			■	■
KBPC Series	■		■		■
KBU Series	■			■	■

Description of HI-REL Test Capabilities

- Barometric Pressure: This equipment simulates low atmospheric pressure encountered in non-pressurized environments up to 200,000 feet.
- Humidity: This equipment evaluates units in an accelerated manner, and monitors the effects of their resistance to high humidity and heat conditions. Typical RH of 90 to 98% is achieved.
- Salt (Spray) and Salt Atmosphere: The equipment provides an accelerated laboratory corrosion test simulating the effects of seacoast atmospheres. Salt concentration and velocity per day can be maintained between 10,000 and 50,000 mgm/m²/day. Salt Atmosphere—Salt spray 5%—20% salt solution.
- Thermal Shock Temp.-Cycling: This test determines the resistance of devices to exposure at extremely high and low temperatures. Chamber limits – 74°C to 250°C.
- Mass Spectrometer Leak Detector (Fine Leak): To determine the effectiveness (or the hermeticity) of the seal on devices with internal cavities which are evacuated on contain air or gas. Machine limits $1 - 10^{-9}$ to $10 - 10^{-8}$ atm.
- Gross Leak: Determine seal leak greater than $10 - 10^{-6}$ ATM cc/Sec.
- Constant Acceleration: Determines the effects of a centrifugal force on devices up to 700,000 g under space environment (refrigerated vacuum).
- Shock: Subjects the devices to conditions resulting from sudden applied forces or abrupt changes in motion produced by rough handling, transportation or field operation from 10 to 4,500 g.
- Vibration Fatigue: Tests the effects of vibration within the frequency range of 60 Hz at 0-70 g.
- Vibration Noise: Measures the amount of electrical noise produced by the devices under vibration from 0-5kHz and 0-70 g.
- Vibration Variable Frequency: Tests the effect of the devices to vibration in specified frequency ranges from 0-5 kHz at 0-70 g.
- Non-Operating Life: To determine the effects on devices at elevated temperatures. Temperature ranges up to 300°C.
- Operating Life Test: To operate the devices under intended condition to screen and eliminate marginal devices and eliminate mortality.
    - Steady State Operating Life.
    - Reverse Bias Operating Life
    - Intermittent Operating Life.
- Solderability—Lead Integrity (Lead Tension):
  Determine the solderability on all devices from 0 to 400°C. Lead Tension—Designed to check the capabilities of the devices to withstand straight pulls.
- Lead Integrity (bending stress): Check the quality of leads, welds and seals of the devices to withstand bends under specific weights.
- Lead Integrity (lead torque): Check the devices, leads and seals for resistance to twisting motion. Equipment limits from .5 cmkg to 100 mkg.
- Hi-Power Microscopic Inspection: Examine internal and external constuction of our devices up to 600 times.
- Bond Strength: This determines strength of lead bonding between the active area of the device and connecting packaging lead.

Hi-Reliability, Military, JAN and JANTX Devices

The discrete semiconductor division is proud of its performance record in the manufacture of Hi-Reliability Military products. Military products are available to three levels of screening JAN, JANTX and JANTXV. When reliability classes are required for use in military applications, or other very critical areas which are not for military use but require the same special processing the JAN and JANTX devices are available. Where possible it is advantageous to specify a JAN or JANTX device rather than a special screening procedure because the JAN and JANTX parts are already processed as a standard stock item and do not place an additional load on the factory as will a small speciality requirement.

Reliability of each individual JAN and JANTX lot is accepted when specially tested, versus a commercial lot where a product line is tested for reliability on a periodic basis. JAN devices are processed according to the JAN specifications. JANTX devices have 100% processing and conditioning prior to release to the customer. Both JAN and JANTX devices are lot accepted by undergoing tests including electrical, solderability, thermal shock, terminal strength, moisture resistance, shock, vibration, acceleration, salt atmosphere, surge, storage and operating life. JAN parts are inspected electrically and shipped to the customer. All JANTX devices go through an additional environmental screening consisting of:

- Stabilization Bake for a minimum of 24 hours.
- Temperature Cycling of 10 complete cycles.
- Acceleration of 20,000 G's.
- Fine Leak.
- Gross Leak.
- Initial Electrical with data.
- Operating Life Burn-In for a minimum of 96 hours.
- Post Electrical with data.
- Delta Calculations on leakage current and forward voltage drop.

These devices are being processed on a daily ongoing basis. This in turn makes for a hi-reliability 100% screened part readily available as an off-the-shelf item.

MILITARY APPROVED PRODUCTS

Products Qualify Under Military Specification, MIL-S-19500
Glass composition is covered by patent No. 3,752,701–1973.

OPERATING TEMPERATURE –65°C to +175°C
STORAGE TEMPERATURE –65°C to +200°C

Type	PRV	Max Avg. Current @Half-wave Res. Load 60Hz		Max Fwd Peak Surge Current 1 ~ 60Hz Superimposed	Max Reverse Current @ Rated Peak Reverse Voltage		Max Forward Voltage @ T_A = 25°C		Minimum Breakdown Voltage @ 100μA	Max Reverse Recovery Time Note 1	Qualified Detailed Spec Number	Outline
		Io @ T_A		I_{FM} (Surge)	I_R		I_{FM}	V_{FM}	V_{BR}	Trr		
	Vpk	Aav	°C	Apk	μAdc		Apk	Vpk	Vpk	μS		
					T_A = 25°C	T_A = 150°C						
GENERAL PURPOSE												
J, JTX1N483B	70	.200	25	2.0	.025	5.0	.100	1.0	80		118	DO204MB
J, JTX1N485B	180	.200	25	2.0	.025	5.0	.100	1.0	200		118	DO204MB
J, JTX1N486B	225	.200	25	2.0	.025	5.0	.100	1.0	250		118	DO204MB
J, JTX1N645	225	.400	25	5.0	.025	15	.400	1.0	270		240	DO204MB
J, JTX1N647	400	.400	25	5.0	.025	15	.400	1.0	480		240	DO204MB
J, JTX1N649	600	.400	25	5.0	.050	25	.400	1.0	720		240	DO204MB
J, JTX, JTXV1N645-1	225	.400	25	5.0	.050	25	.400	1.0	270[2]		240	DO204MB
J, JTX, JTXV1N647-1	400	.400	25	5.0	.050	25	.400	1.0	480[2]		240	DO204MB
J, JTX, JTXV1N649-1	600	.400	25	5.0	.050	.25	.400	1.0	720[2]		240	DO204MB
J, JTX1N3611	200	1.0	100	20	1.0	300	1.0	1.1	240		228	DO204AP*
J, JTX1N3612	400	1.0	100	20	1.0	300	1.0	1.1	460		228	DO204AP*
J, JTX1N3613	600	1.0	100	20	1.0	300	1.0	1.1	720		228	DO204AP*
J, JTX1N3614	800	1.0	100	20	1.0	300	1.0	1.1	920		228	DO204AP*
J, JTX1N3957	1000	1.0	100	20	1.0	300	1.0	1.1	1150		228	DO204AP*
J, JTX, JTXV1N4245	200	1.0	100	25	1.0	150	3.0	1.3	240	5.0	286	DO204AP
J, JTX, JTXV1N4246	400	1.0	100	25	1.0	150	3.0	1.3	480	5.0	286	DO204AP
J, JTX, JTXV1N4247	600	1.0	100	25	1.0	150	3.0	1.3	720	5.0	286	DO204AP
J, JTX, JTXV1N4248	800	1.0	100	25	1.0	150	3.0	1.3	960	5.0	286	DO204AP
J, JTX, JTXV1N4249	1000	1.0	100	25	1.0	150	3.0	1.3	1150	5.0	286	DO204AP
J, JTX1N5624	200	3.5	55	125	1.0	100	3.5	1.0	240[2]	5.0	432	G3*
J, JTX1N5625	400	3.5	55	125	1.0	100	3.5	1.0	460[2]	5.0	432	G3*
J, JTX1N5626	600	3.5	55	125	1.0	100	3.5	1.0	600[2]	5.0	432	G3*
J, JTX1N5627	800	3.5	55	125	1.0	100	3.5	1.0	880[2]	5.0	432	G3*
FAST-SWITCHING												
J, JTX, JTXV1N4942	200	1.0	55	15	1.0	200	1.0	1.3	240[2]	.150	359	DO204AP
J, JTX, JTXV1N4944	400	1.0	55	15	1.0	200	1.0	1.3	460[2]	.150	359	DO204AP
J, JTX, JTXV1N4946	600	1.0	55	15	1.0	200	1.0	1.3	660[2]	.150	359	DO204AP
J, JTX, JTXV1N4947	800	1.0	55	15	1.0	200	1.0	1.3	880[2]	.250	359	DO204AP
J, JTX, JTXV1N4948	1000	1.0	55	15	1.0	200	1.0	1.3	1100[2]	.500	359	DO204AP
J, JTX, JTXV1N5415	50	3.0	55	80	1.0	20[3]	9.0	1.5	55[2]	.150	411C	G4
J, JTX, JTXV1N5416	100	3.0	55	80	1.0	20[3]	9.0	1.5	110[2]	.150	411C	G4
J, JTX, JTXV1N5417	200	3.0	55	80	1.0	20[3]	9.0	1.5	220[2]	.150	411C	G4
J, JTX, JTXV1N5418	400	3.0	55	80	1.0	20[3]	9.0	1.5	440[2]	.150	411C	G4
J, JTX, JTXV1N5419	500	3.0	55	80	1.0	20[3]	9.0	1.5	550[2]	.250	411C	G4
J, JTX, JTXV1N5420	600	3.0	55	80	1.0	20[3]	9.0	1.5	660[2]	.400	411C	G4
J, JTX, JTXV1N5550	220	5.0	55[8]	100	1.0	75[3]	9.0	1.2	220[2]	2.0	420A	G4
J, JTX, JTXV1N5551	400	5.0	55[8]	100	1.0	75[3]	9.0	1.2	440[2]	2.0	420A	G4
J, JTX, JTXV1N5552	600	5.0	55[8]	100	1.0	75[3]	9.0	1.2	660[2]	2.0	420A	G4
J, JTX, JTXV1N5553	800	5.0	55[8]	100	1.0	75[3]	9.0	1.2	880[2]	2.0	420A	G4
J, JTX, JTXV1N5554	1000	5.0	55[8]	100	1.0	75[3]	9.0	1.2	1100[2]	2.0	420A	G4
J, JTX, JTXV1N5614	200	1.0	55	30	0.5	25[3]	3.0	1.3	240[2]	2.0	427B	DO204AP*
J, JTX, JTXV1N5616	400	1.0	55	30	0.5	25[3]	3.0	1.3	440[2]	2.0	427B	DO204AP*
J, JTX, JTXV1N5618	600	1.0	55	30	0.5	25[3]	3.0	1.3	660[2]	2.0	427B	DO204AP*
J, JTX, JTXV1N5620	800	1.0	55	30	0.5	25[3]	3.0	1.3	880[2]	2.0	427B	DO204AP*
J, JTX, JTXV1N5622	1000	1.0	55	30	0.5	25[3]	3.0	1.3	1100[2]	2.0	427B	DO204AP*
J, JTX, JTXV1N5615	200	1.0	55	25	0.5	25[3]	3.0	1.6	220[2]	.150	429B	DO204AP*
J, JTX, JTXV1N5617	400	1.0	55	25	0.5	25[3]	3.0	1.6	440[2]	.150	429B	DO204AP*
J, JTX, JTXV1N5619	600	1.0	55	25	0.5	25[3]	3.0	1.6	660[2]	.250	429B	DO204AP*
J, JTX, JTXV1N5621	800	1.0	55	25	0.5	25[3]	3.0	1.6	800[2]	.300	429B	DO204AP*
J, JTX, JTXV1N5623	1000	1.0	55	25	0.5	25[3]	3.0	1.6	1100[2]	.500	429B	DO204AP*

MILITARY APPROVED PRODUCTS

Products Qualify Under Military Specification, MIL-S-19500
Glass composition is covered by patent No. 3,752,701—1973.

OPERATING TEMPERATURE – 65°C to +175°C
STORAGE TEMPERATURE – 65°C to +200°C

Type	PRV	Max Avg. Current @Half-wave Res. Load 60Hz		Max Fwd Peak Surge Current 1 ~ 60Hz Superimposed	Max Reverse Current @ Rated Peak Reverse Voltage		Max Forward Voltage @ T_A = 25°C		Minimum Breakdown Voltage @ 100μA	Max Reverse Recovery Time Note 1	Qualified Detailed Spec Number	Outline
		Io @ T_A		I_{FM} (Surge)	I_R		I_{FM}	V_{FM}	V_{BR}	Trr		
	Vpk	Aav	°C	Apk	μAdc		Apk	Vpk	Vpk	μS		
					T_A = 25°C	T_A = 150°C						
FAST-EFFICIENT												
J, JTX, JTXV1N5807	50	6.0	75[7]	125	5.0	150[3]	6.0	.925	60	.030[4]	477	G4*
J, JTX, JTXV1N5809	100	6.0	75[7]	125	5.0	150[3]	6.0	.925	110	.030[4]	477	G4*
J, JTX, JTXV1N5811	150	6.0	75[7]	125	5.0	150[3]	6.0	.925	180	.030[4]	477	G4*
GLASS PASSIVATED BRIDGE RECTIFER												
J, JTX M19500/469-01	200	10	55[5]	100	2.0	125[6]	15.7	1.35	240[2]	2.0	469	M19500
J, JTX M19500/469-02	400	10	55[5]	100	2.0	125[6]	15.7	1.35	460[2]	2.0	469	M19500
J, JTX M19500/469-03	600	10	55[5]	100	2.0	125[6]	15.7	1.35	660[2]	2.0	469	M19500
J, JTX M19500/469-04	800	10	55[5]	100	2.0	125[6]	15.7	1.35	880[2]	2.0	469	M19500

NOTES:
1. REVERSE RECOVERY TEST CONDITIONS: I_R = 0.5A, I_R = 1.0A, Irr = 0.25A.
2. I_{RM} = 50μA.
3. T_A = 100°C.
4. REVERSE RECOVERY TEST CONDITIONS: I_R = 1.0A, I_R = 1.0A, I_{RR} = 0.1A.
5. T_C = 55°C.
6. T_C = 100°C.
7. T_L = 75°C at lead lengths of .375″ 9.5mm.
8. T_L = 55°C at lead lengths of .375″ 9.5mm.

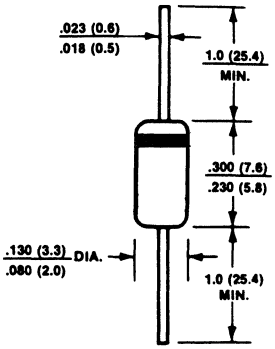
BI-POLARITY TRANSIENT VOLTAGE SUPPRESSORS/**DO204AP OUTLINE QUALIFIED DETAILED SPEC NBR 516

OPERATING AND STORAGE TEMPERATURES – 65°C to +175°C

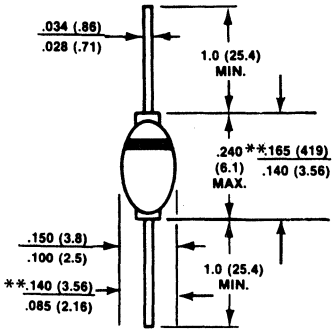
Type	Breakdown Voltage @ It Min Max Note 1	Max DC Power Dissipation T_L = 25°C Note 2	Test Current	Maximum Peak Surge Voltage @ 1mS	Maximum Peak Surge Current @ 1mS	Maximum Reverse Leakage Current @ T_A = 25°C		Maximum Temperature Coefficient Of V_{BR}	Maximum Peak Surge @ 1ms
	V_{BR}	PD	It	V_{SM}	I_{SM}	I_R	V_R		P_{SM}
	Volts	WATTS	mA	V_{PK}	A_{PK}	μA	Volts	%/°C	WATTS
J, JTX, JTXV1N6113	18.0 - 22.0	3.0	65	29.0	17.2	1.0	15.2	.085	500
J, JTX, JTXV1N6114	19.8 - 24.2	3.0	50	31.9	15.7	1.0	16.7	.085	500
J, JTX, JTXV1N6115	21.6 - 26.4	3.0	50	34.8	14.4	1.0	18.2	.090	500
J, JTX, JTXV1N6116	24.3 - 29.7	3..0	50	39.2	12.8	1.0	20.6	.090	500
J, JTX, JTXV1N6117	27.0 - 33.0	3.0	40	43.6	11.5	1.0	22.8	.090	500
J, JTX, JTXV1N6118	29.7 - 36.3	3.0	40	47.9	10.4	1.0	25.1	.095	500
J, JTX, JTXV1N6119	32.4 - 39.6	3.0	30	52.3	9.6	1.0	27.4	.095	500
J, JTX, JTXV1N6120	35.1 - 42.9	3.0	30	56.2	8.9	1.0	29.7	.095	500
J, JTX, JTXV1N6121	38.7 - 47.3	3.0	30	62.0	8.1	1.0	32.7	.095	500
J, JTX, JTXV1N6122	42.3 - 51.7	3.0	25	67.7	7.4	1.0	35.8	.095	500
J, JTX, JTXV1N6123	45.9 - 56.1	3.0	25	73.5	6.8	1.0	38.8	.095	500
J, JTX, JTXV1N6124	50.4 - 61.6	3.0	20	80.7	6.2	1.0	42.6	.095	500
J, JTX, JTXV1N6125	55.8 - 68.2	3.0	20	89.3	5.6	1.0	47.1	.100	500
J, JTX, JTXV1N6126	61.2 - 74.8	3.0	20	98.0	5.1	1.0	51.7	.100	500
J, JTX, JTXV1N6127	67.5 - 82.5	3.0	20	108.1	4.6	1.0	56.0	.100	500
J, JTX, JTXV1N6128	73.8 - 90.2	3.0	15	118.2	4.2	1.0	62.2	.100	500
J, JTX, JTXV1N6129	81.9 - 100.1	3.0	15	131.1	3.8	1.0	69.2	.100	500
J, JTX, JTXV1N6130	90.0 - 110.0	3.0	12	144.1	3.5	1.0	76.0	.100	500
J, JTX, JTXV1N6131	99.0 - 121.0	3.0	12	158.5	3.2	1.0	83.6	.100	500
J, JTX, JTXV1N6132	108 - 132	3.0	10	172.9	2.9	1.0	91.2	.100	500
J, JTX, JTXV1N6133	117 - 143	3.0	10	187.3	2.7	1.0	98.8	.105	500
J, JTX, JTXV1N6134	135 - 165	3.0	8.0	216.2	2.3	1.0	114.0	.105	500
J, JTX, JTXV1N6135	144 - 176	3.0	8.0	228.8	2.2	1.0	121.6	.105	500
J, JTX, JTXV1N6136	162 - 198	3.0	5.0	257.4	1.9	1.0	136.8	.110	500
J, JTX, JTXV1N6137	180 - 220	3.0	5.0	286.0	1.7	1.0	152.0	.110	500

NOTES:
1. Stand Voltage Tolerance +/– 10%, Suffix A +/– 5%.
2. Lead lengths of .375″ (9.5mm).

CASE DRAWINGS ALL DIMENSIONS IN INCHES AND (MILLIMETERS)

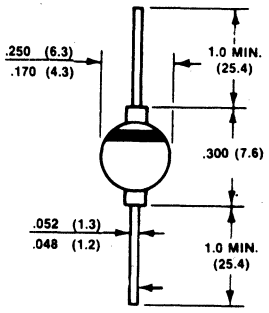


DO-204MB



*Body Dia. .110 (2.8) / .060 (1.5)

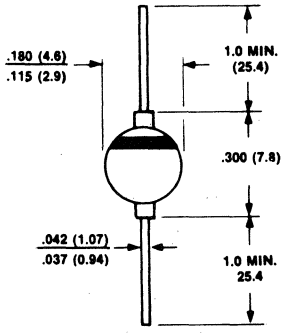
DO-204AP



* Body Dia.: .230 (5.8) / .160 (4.06)

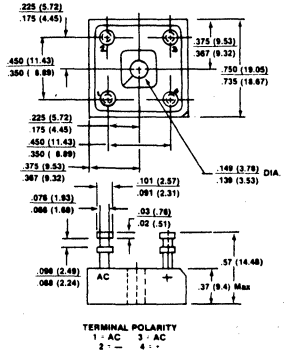
* Body Length: .260 (6.6) / .200 (5.08)

G3



*Body dia. .165 (4.2) / .115 (2.9)

G4



M19500

SCHOTTKY RECTIFIERS 1 TO 40 AMPERES

Axial Plastic Schottky Rectifiers 1 to 5 AMPERES

Types: SB120 thru SB160
SB170 thru SB180
SB320 thru SB380
SB520 thru SB580
1N5717 thru 1N5819
1N5820 thru 1N5822
GI5823 thru GI5825

Features:
- Economical plastic molded construction
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.

High Current Schottky Rectifiers 5 to 16 AMPERES single chip

Types: SBS520T thru SBS545T
SBS820T thru SBS860T
SBS1020T thru SBS1045T
SBS1620T thru SBS1645T

Features:
- Low thermal resistance
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.

High Current Schottky Rectifiers 10 to 40 AMPERES center tapped

Types: SBP1020T thru SBP1045T
SBP1620T thru SBP1660T
SLP2020P thru SLP2045P
SBP3020P thru SBP3060P
SLP3020P thru SLP3045P
SD241/SD241P
SBP3020M thru SBP3060M
SBP4020P thru SBP4060P

Features:
- Dual rectifier construction
- Low thermal resistance
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.

Plastic Schottky Rectifier Bridges 1 AMPERE

Types: SDF10M thru SDF60M

Features:
- Economical plastic molded construction
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.

GENERAL INSTRUMENT

AXIAL SCHOTTKY RECTIFIERS

TYPE	SB120 thru SB160	SB170 thru SB180	1N5817 thru 1N5819	SB320 thru SB380	1N5820 thru 1N5822	SB520 thru SB580	GI5823 thru GI5825	TYPE
CASE	F-126	F-126	F-126	DO201AD	DO201AD	DO201AD	DO201AD	CASE
I_o (A)	1.0	1.0	1.0	3.0	3.0	5.0	5.0	1_o (A)
@T_L (°C)	75	75	80	75	95	60	95	@T_L (°C)
V_R = 20 (V)	SB120		1N5817	SB320	1N5820	SB520	GI5823	V_R = 20 (V)
V_R = 30 (V)	SB130		1N5818	SB330	1N5821	SB530	GI5824	V_R = 30 (V)
V_R = 40 (V)	SB140		1N5819	SB340	1N5822	SB540	GI5825	V_R = 40 (V)
V_R = 50 (V)	SB150			SB350		SB550		V_R = 50 (V)
V_R = 60 (V)	SB160			SB360		SB560		V_R = 60 (V)
V_R = 70 (V)		SB170						
V_R = 80 (V)		SB180		SB380		SB580		
SURGE (A)	40	40	25	150	80	250	250	SURGE (A)
V_F (V)	0.55/.70	.80	0.45/0.60	0.50/0.80	0.475/0.525	0.57/0.80	.45	V_F (V)
Page	26	28	30	34	32	36	38	Page

GENERAL INSTRUMENT

HIGH CURRENT SCHOTTKY RECTIFIERS

TYPE	SBS520T thru SBS545T	SBS820T thru SBS860T	SBS1020T thru SBS1045T	SBS1620T thru SBS1660T	SBP1020T thru SBP1045T	SBP1620T thru SBP1660T	SBP3020P thru SBP3060P	SLP2020P thru SLP2045P	SLP3020P thru SLP3045P	SBP3020M thru SBP3060M	SBP4020P thru SBP4060P	SDF10M TO SDF60M	TYPE
CASE	T0220	T0220	T0220	T0220	T0220CT	TO220CT	TO3P	TO3P	TO3P	TO3M	T03P	DFM	CASE
I_o (A)	5.0	8.0	10.0	16.0	10.0	16.0	30.0	20.0	30.0	30.0	40.0	1.0	I_o (A)
@T_C (°C)	114	95	95	90	104	90	100	95	90	100	100	40	T_A (°C)
V_R = 20 (V)	SBS520T	SBS820T	SBS1020T	SBS1620T	SBP1020T	SBP1620T	SBP3020P	SLP2020P	SLP3020P	SBP3020M	SBP4020P	SDF20M	V_R = 20 (V)
V_R = 30 (V)	SBS530T	SBS830T	SBS1030T	SBS1630T	SBP1030T	SBP1630T	SBP3030P	SLP2030P	SLP3030P	SBP3030M	SBP4030P	SDF30M	V_R = 30 (V)
V_R = 35 (V)	SBS535T	SBS835T	SBS1035T	SBS1635T	SBP1035T	SBP1635T	SBP3035P	SLP2035P	SLP3035P	SBP3035M	SBP4035P		V_R = 35 (V)
V_R = 40 (V)	SBS540T	SBS840T	SBS1040T	SBS1640T	SBP1040T	SBP1640T	SBP3040P	SLP2040P	SLP3040P	SBP3040M	SBP4040P	SDF40M	V_R = 40 (V)
V_R = 45 (V)	SBS545T	SBS845T	SBS1045T	SBS1645T	SBP1045T	SBP1645T	SBP3045P	SLP2045P	SLP3045P	SBP3045M	SBP4045P		V_R = 45 (V)
V_R = 50 (V)		SBS850T				SBP1650T	SBP3050P			SBP3050M	SBP4060P	SDF50M	V_R = 50 (V)
V_R = 60 (V)		SBS860T				SBP1660T	SBP3060P			SBP3060M		SDF60M	V_R = 60 (V)
SURGE (A)	100	250	150	250	100	250	300	120	250	300	300	75	SURGE (A)
V_F (V)	0.55	0.65/0.75	0.57	0.65	0.55	0.65/0.75	0.65/0.75	0.55	0.55	0.65/0.75	0.65/0.75	0.606.65	V_F (V)
Page	42	44	46	48	50	52	62	54	60	64	66	70	Page

AXIAL PLASTIC SCHOTTKY RECTIFIERS 1 TO 5 AMPERES

SB120 THRU SB160

MINIATURE SCHOTTKY BARRIER RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
20 to 60 Volts
CURRENT
1.0 Amperes

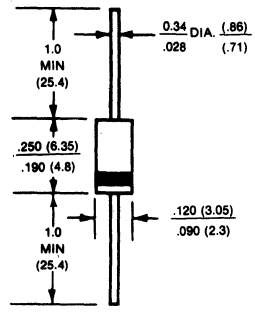
FEATURES

- Low cost
- Plastic material used carries Underwriters Laboratory Flammability Classifications 94V-0.
- Exceeds environmental standards of MIL-STD-19500.
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- High temperature soldering guaranteed: 250°C/10 seconds/.375" (9.5mm) lead lengths/5 lbs., (2.3kg) tension.

MECHANICAL DATA

Case: F-126 Molded Plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounces, .34 grams

F-126



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SB120	SB130	SB140	SB150	SB160	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	40	50	60	V
Maximum RMS Voltage	14	21	28	35	42	V
Maximum DC Blocking Voltage	20	30	40	50	60	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length See Fig. 1	1.0					A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	40.0					A
Maximum Instantaneous Forward Voltage at 1.0A	.50			.70		V
Maximum Average Reverse Current at Rated DC Blocking Voltage T_J = 25°C T_J = 100°C	1.0 10					mA mA
Typical Thermal Resistance $R\Theta JA$ (Note 1)	50					°C/W
Typical Junction Capacitance (Note 2)	110			80		pF
Operating Temperature Range T_J	-65 to +125			-65 to +150		°C
Storage Temperature Range T_{STG}	-65 to +150					°C

NOTES
1. Thermal Resistance Junction to Ambient Vertical PC Board Mounting 0.5" (12.7mm) Lead Length
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

RATING AND CHARACTERISTIC CURVES
SB120 THRU SB160

FIG. 1 — FORWARD CURRENT DERATING CURVE

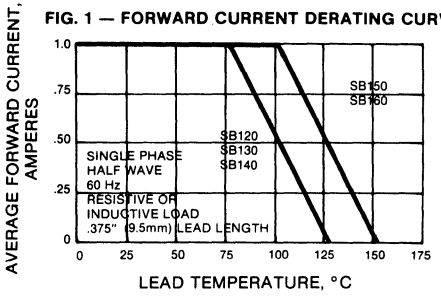


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

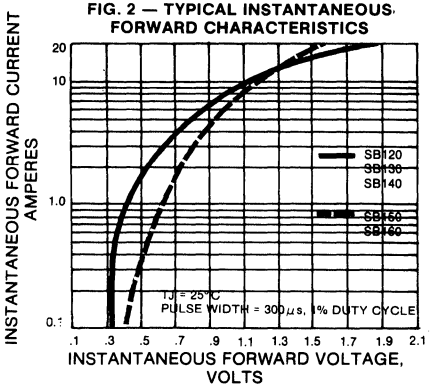


FIG. 3A — TYPICAL REVERSE CHARACTERISTICS

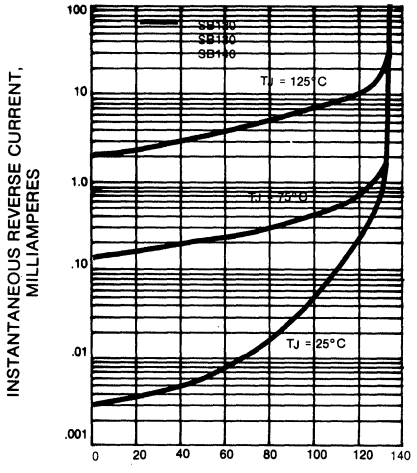


FIG. 3B — TYPICAL REVERSE CHARACTERISTICS

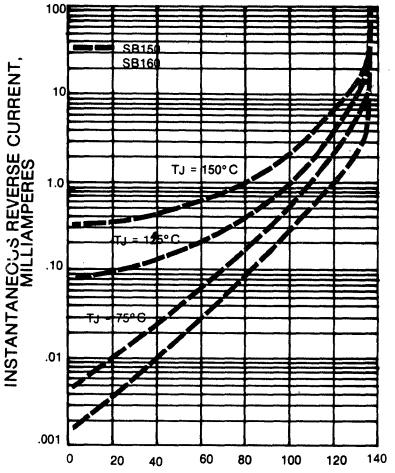


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

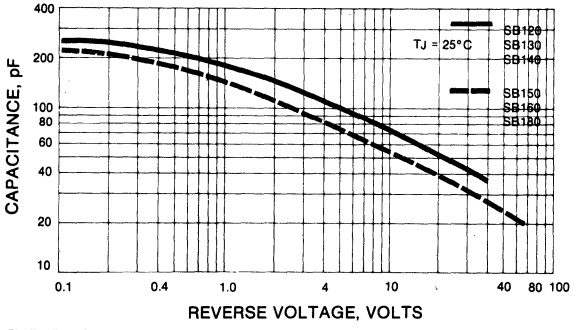
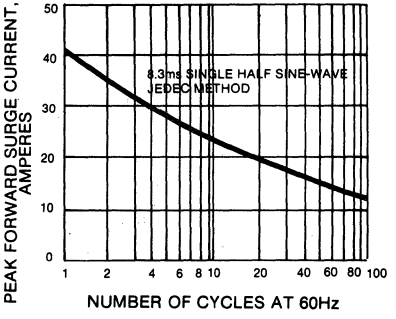


FIG. 5 — MAXIMUM NON-REPETITIVE SURGE CURRENT



SB170 THRU SB180

MINIATURE SCHOTTKY BARRIER RECTIFIERS

GENERAL INSTRUMENT

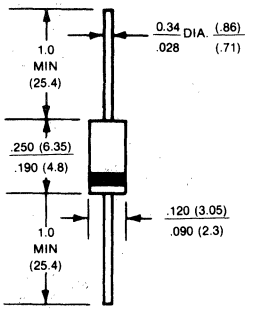
VOLTAGE RANGE
70 to 80 Volts

CURRENT
1.0 Amperes

FEATURES

- Low cost
- Plastic material used carries Underwriters Laboratory Flammability Classifications 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed: 250°C/10 seconds/.375" (9.5mm) lead lengths/5 lbs., (2.3kg) tension

F-126



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: F-126 Molded Plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounces, .34 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SB170	SB180	UNITS
Maximum Recurrent Peak Reverse Voltage	70	80	V
Maximum RMS Voltage	50	56	V
Maximum DC Blcoking Voltage	70	80	V
Maximum Average Forward Rectified Current .375" (9.5mm) Lead Length See Fig. 1	1.0		A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	40.0		A
Maximum Instantaneous Forward Voltage at 1.0A	.80		V
Maximum Average Reverse Current at Rated DC Blocking Voltage T_J = 25°C T_J = 100°C	1.0 10		mA mA
Typical Thermal Resistance $R\Theta JA$ (Note 1)	50		°C/W
Typcial Junction Capacitance (Note 2)	80		pF
Operating Temperature Range T_J	-65 to +150		°C
Storage Temperature Range T_{STG}	-65 to +150		°C

NOTES:
1. Thermal Resistance Junction to Ambient Vertical PC Board Mounting 0.5" (12.7mm) Lead Length.
2. Measured at 1 MHz and applied reverse ovltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES
SB170 THRU SB180

FIG. 1 — FORWARD CURRENT DERATING CURVE

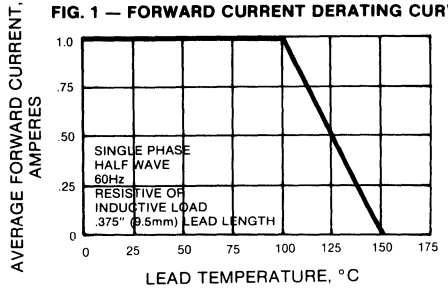


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

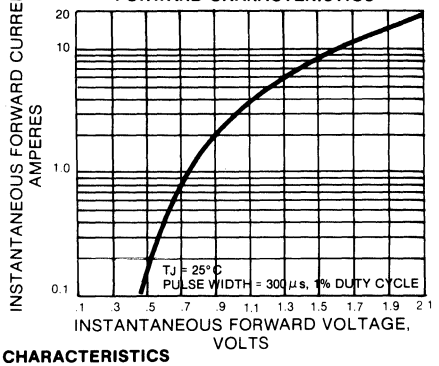


FIG. 3A — TYPICAL REVERSE CHARACTERISTICS

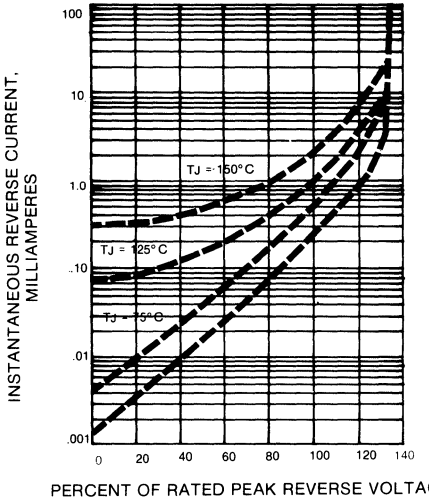


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

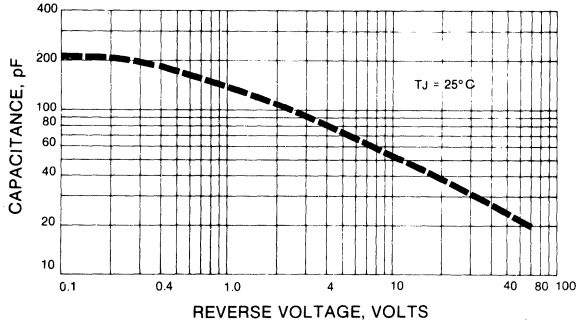
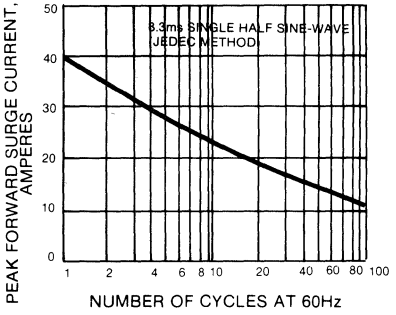


FIG. 5 — MAXIMUM NON-REPETITIVE SURGE CURRENT



IN5817 THRU IN5819

MINIATURE SCHOTTKY BARRIER RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
20, 30, 40 Volts
CURRENT
1.0 Amperes

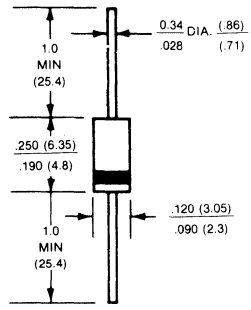
FEATURES

- Low cost
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- High temperature soldering guaranteed: 250°C/10 seconds/.375" (9.5mm) lead lengths at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: F-126 Molded Plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounces, .34 grams

F-126



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	IN5817	IN5818	IN5819	UNITS
*Maximum Recurrent Peak Reverse Voltage	20	30	40	V
Maximum RMS Voltage	14	21	28	V
Maximum DC Blocking Voltage	20	30	40	V
*Maximum Average Forward Rectified Current .375", 9.5mm Lead Length at T_L = 90°C	1.0			A
*Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) T_L = 70°C	25			A
*Maximum Forward Voltage at 1.0A	.45	.55	.60	V
*Maximum Forward Voltage at 3.1A	.75	.875	.90	V
*Maximum Average Reverse Current at Peak Reverse Voltage T_A = 25°C T_A = 100°C	1.0 10			mA mA
Typical Thermal Resistance $R\Theta JA$ (Note 1)	80			°C/W
Typical Junction Capacitance (Note 2)	110			pF
*Storage and Operating Temperature Range T_J, T_{STG}	-65 to +125			°C

NOTES:
1. Thermal Resistance Junction to Ambient Vertical PC Board Mounting, 0.5", 1.27mm Lead Length
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts
* JEDEC registered values

RATING CHARACTERISTIC CURVES
IN5817 THRU IN5819

FIG. 1 — FORWARD CURRENT DERATING CURVE

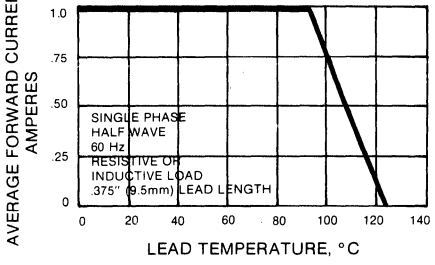


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

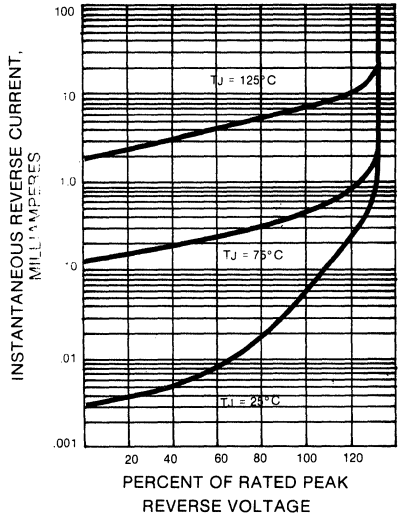


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

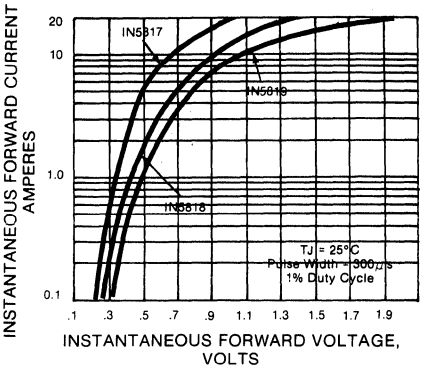


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

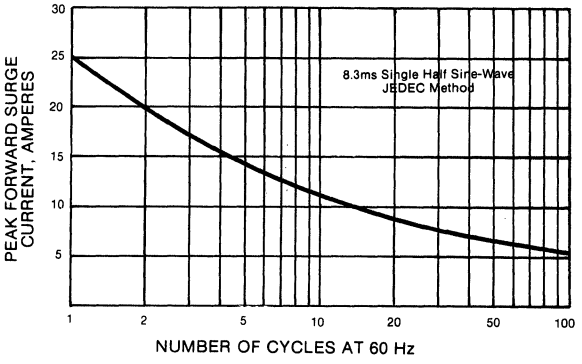
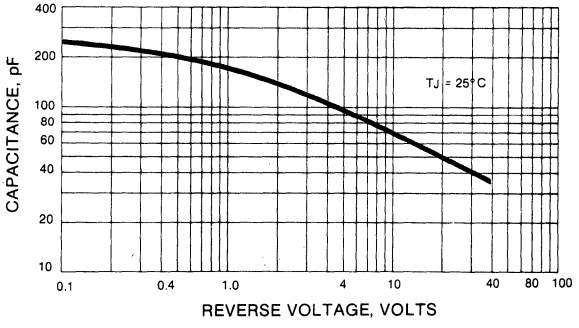


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



1N5820 THRU 1N5822

HIGH CURRENT SCHOTTKY BARRIER RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
20, 30, 40 Volts

CURRENT
3.0 Amperes

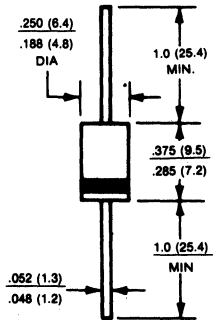
FEATURES

- Low cost
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed: 300°C/10 seconds/.375", 9.5mm lead lengths at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: DO-201AD Molded Plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight: 0.04 ounces, 1.12 grams

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5820	1N5821	1N5822	UNITS
* Maximum Recurrent Peak Reverse Voltage	20	30	40	V
Maximum RMS Voltge	14	21	28	V
Maximum DC Blocking Voltage	20	30	40	V
* Maximum Average Forward Rectified Current .375", 9.5mm lead length at T_L = 95°C	3.0			A
* Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) T_L = 75°C	80			A
* Maximum Instantaneous Forward Voltage at 3.0A (Note 1)	.475	.500	.525	V
* Maximum Instantaneous Forward Voltage at 9.4A (Note 1)	.850	.900	.950	V
* Maximum Average Reverse Current at rated DC Blocking Voltage (Note 1) T_L = 25°C	2.0			mA
T_L = 100°C	20			mA
Typical Thermal Resistance ROJA (Note 2)	28			°C/W
Typical Junction Capacitance (Note 3)	250			pF
*Storage and Operating Temperature Range T_J, T_{STG}	-65 to +125			°C

NOTES:
1. Measured at Pulse Width 300 μs, Duty Cycle 2%.
2. Thermal Resistance Junction to Ambient Vertical PC Board Mounting, 0.5" (12.5mm) Lead Lengths.
3. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
* JEDEC Registered Value.

RATING CHARACTERISTIC CURVES
1N5820 THRU 1N5822

FIG. 1 — FORWARD CURRENT DERATING CURVE

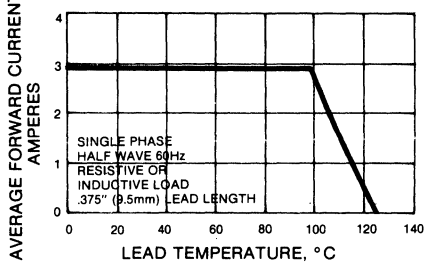


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

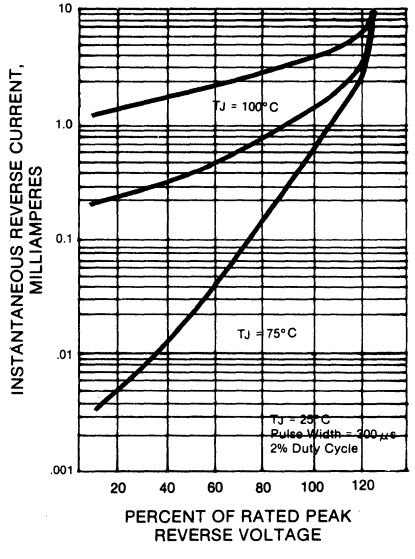


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

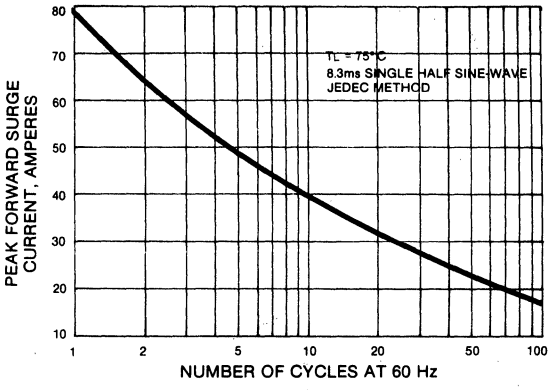


FIG. 4 — TYPICAL FORWARD CHARACTERISTICS

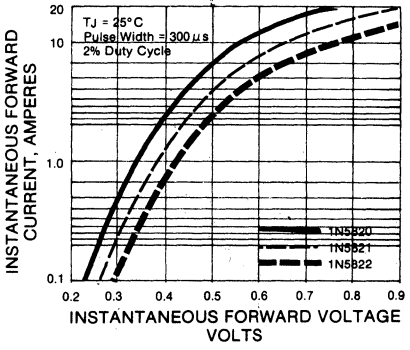
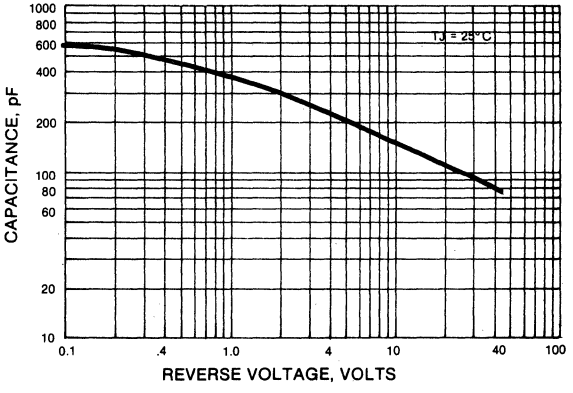


FIG 5 — TYPICAL JUNCTION CAPACITANCE



SB320 THRU SB360

HIGH CURRENT SCHOTTKY BARRIER RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
20 to 80 Volts

CURRENT
3.0 Amperes

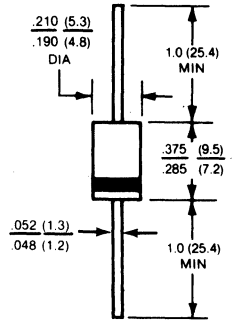
FEATURES

- Low cost
- Plastic package has Underwriters Laboratory Flammability Classification94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed: 250° C/10 seconds/.375" (9.5mm) lead lengths at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: DO-201AD Molded Plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: 0.04 ounces, 1.12 grams

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SB320	SB330	SB340	SB350	SB360	SB380	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	40	50	60	80	V
Maximum RMS Voltage	14	21	28	35	42	56	V
Maximum DC Blocking Voltage	20	30	40	50	60	80	V
Maximum Average Forward Rectified Current .375", 9.5mm Lead Length See Fig. 1	3.0						A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	150						A
Maximum Instantaneous Forward Voltage at 3.0A	.50			.75		.80	V
Maximum Average Reverse Current at Rated DC Reverse Voltage T_A = 25° C	3.0						mA
T_A = 100° C	30						mA
Typical Thermal Resistance ROJA (Note 1)	35						°C/W
Typical Junction Capacitance (Note 2)	300						pF
Operating Temperature Range T_J	-65 to +125			-65 to +150			°C
Storage Temperature Range T_{STG}	-65 to +150						°C

NOTES:
1. Thermal Resistance Junction to Ambient Vertical PC Board Mounting, 0.5", 12.7mm Lead Length.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES
SB320 THRU SB360

FIG. 1 — FORWARD CURRENT DERATING CURVE

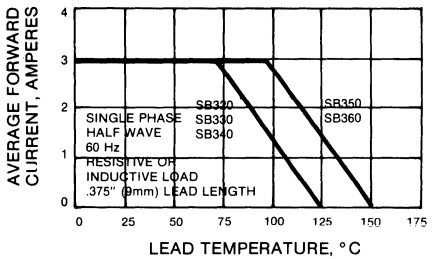


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

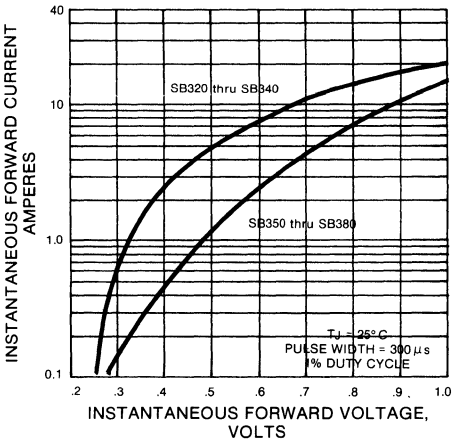


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

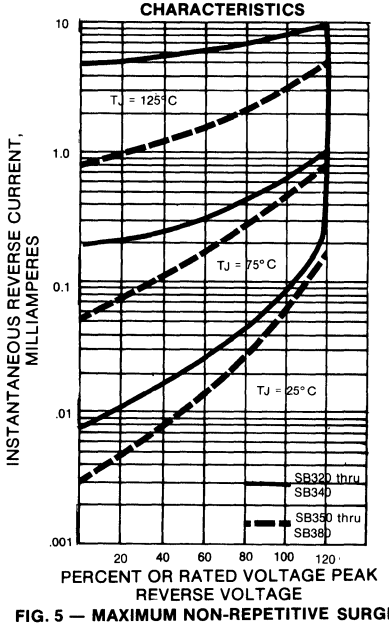


FIG. 4 — TYPICAL JUNCTION CAPAICTANCE

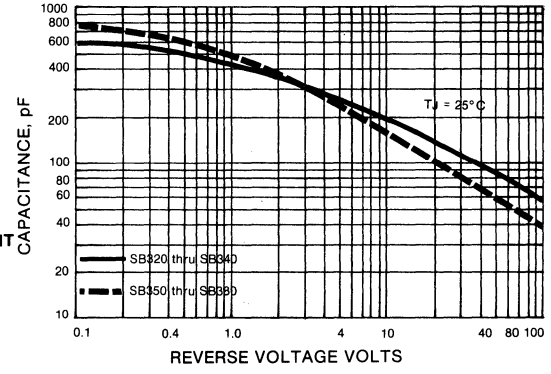
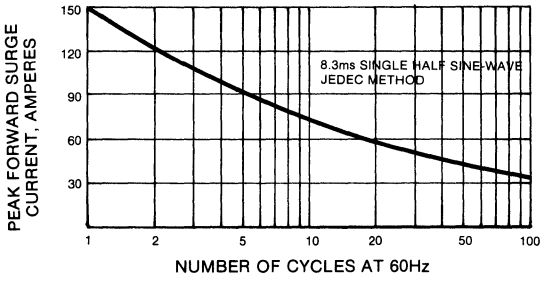


FIG. 5 — MAXIMUM NON-REPETITIVE SURGE CURRENT



SB520 THRU SB580

HIGH CURRENT SCHOTTKY BARRIER RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
20 to 80 Volts

CURRENT
5.0 Amperes

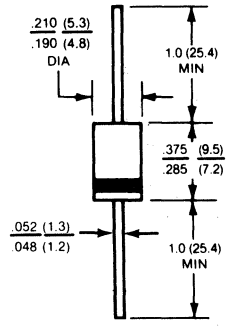
FEATURES

- Low cost
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- High temperature soldering guaranteed: 250°C/10 seconds/.375" (9.5mm) lead lengths at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: DO-201AD Molded Plastic
Terminals: Axial leads, solderable per MIL-STD-202 Method 208
Polarity: color band denotes cathode
Mounting Position: Any
Weight: 0.04 ounces, 1.12 grams

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SB520	SB530	SB540	SB550	SB560	SB580	UNITS
Maximum Recurrent Peak Reverse Voltage	50	30	40	50	60	80	V
Maximum RMS Voltage	14	21	28	35	42	56	V
Maximum DC Blocking Voltage	20	30	40	50	60	80	V
Maximum Average Forward Rectified Current, .375", 9.5mm, Lead Length See Fig. 1	5.0						A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	250						A
Maximum Instantaneous Forward Voltage at 5.0A	.57			.70		.80	V
Maximum DC Reverse Current at DC Blocking Voltage T_A = 25°C T_A = 100°C	10 50						mA mA
Typical Thermal Resistance $R\Theta JA$ (Note 1)	30						°C/W
Typical Junction Capacitance (Note 2)	500			380			pF
Operating Temperature Range T_J	-65 to +125		-65 to +150				°C
Storage Temperature Range T_{STG}	-65 to +150						°C

NOTES:
1. Thermal Resistance Junction to Ambient Vertical PC Board Mounting 0.5" (12.7mm) lead lengths.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES
SB520 THRU SB580

FIG. 1 — FORWARD CURRENT DERATING CURVE

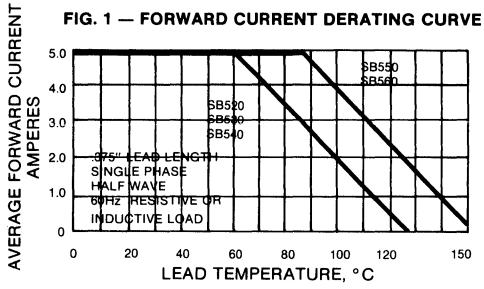


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

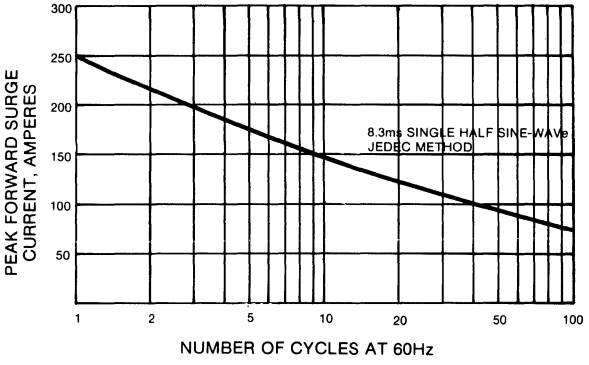


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

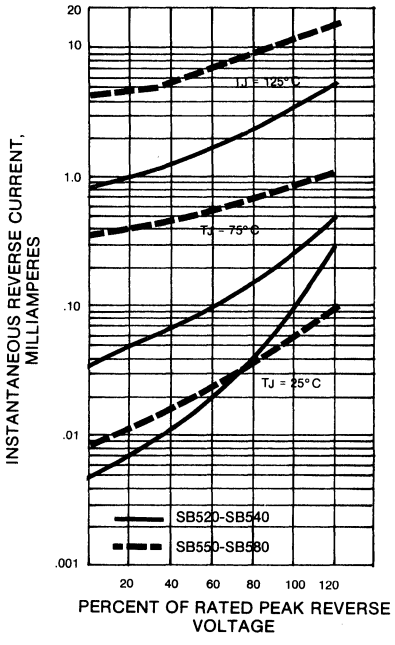


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

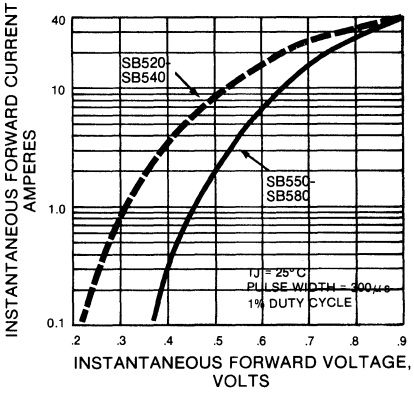
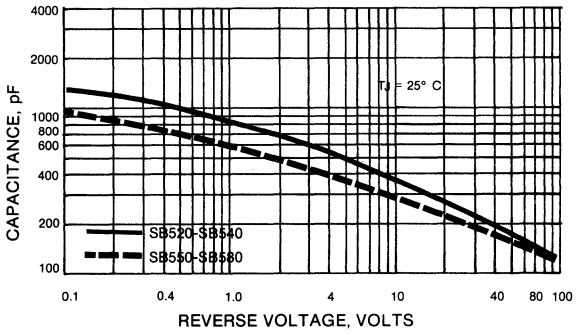


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



GI5823 THRU GI5825

HIGH CURRENT SCHOTTKY BARRIER RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
20, 30, 40 Volts

CURRENT
5.0 Amperes

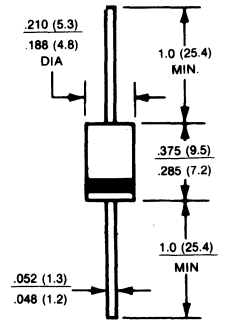
FEATURES

- Low cost
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

MECHANICAL DATA

Case: DO-201AD Molded Plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight: 0.04 ounces, 1.12 grams

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI5823	GI5824	GI5825	UNITS
* Maximum Recurrent Peak Reverse Voltage to T_L = 80°C	20	30	40	V
Maximum RMS Voltage	14	21	28	V
Maximum DC Blocking Voltage	20	30	40	V
* Maximum Average Forward Rectified Current .375", 9.5mm Lead Length at T_L = 80°C	5.0			A
* Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) T_L = 80°C	250			A
Maximum Instantaneous Forward Voltage at 3.0A	.42			V
Maximum Instantaneous Forward Voltage at 5.0A	.45			V
Maximum Instantaneous Forward Voltage at 15.7A	.625			V
* Maximum Average Reverse Current at Peak Reverse Voltage T_A = 25°C T_A = 100°C	10 75			mA mA
* Thermal Resistance $R_{\theta JA}$ (Note 1)	25			°C/W
Typical Junction Capacitance (Note 2)	700			pF
* Storage and Operating Temperature Range, T_J	-65 to +125			°C

NOTES:
1. Thermal Resistance Junction to Ambient Vertical PC Board Mounting, 0.5" Lead Length.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
* JEDEC registered value.

RATING CHARACTERISTIC CURVES
GI5823 THRU GI5825

FIG. 1—FORWARD CURRENT DERATING CURVE

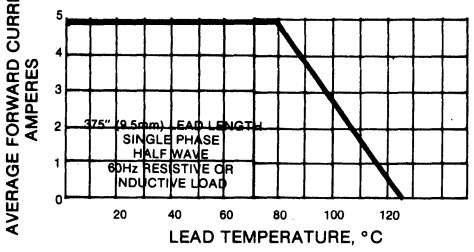


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

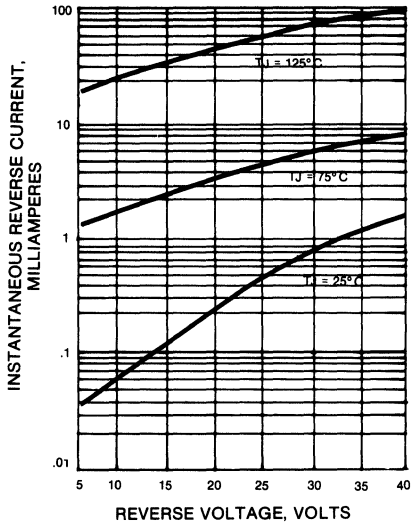


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

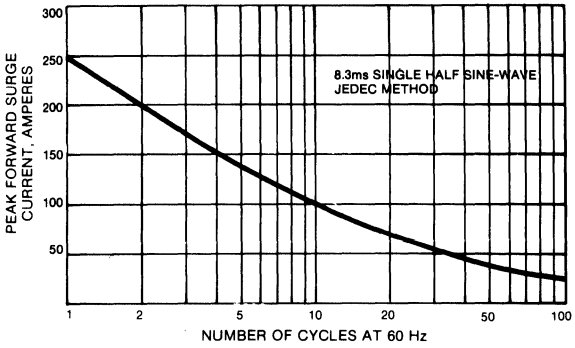
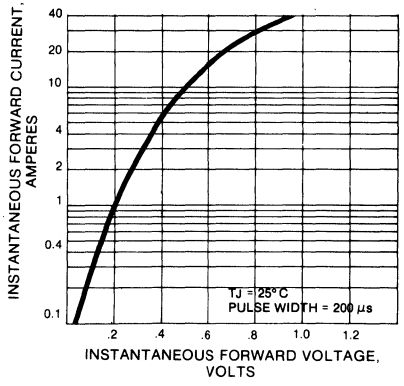
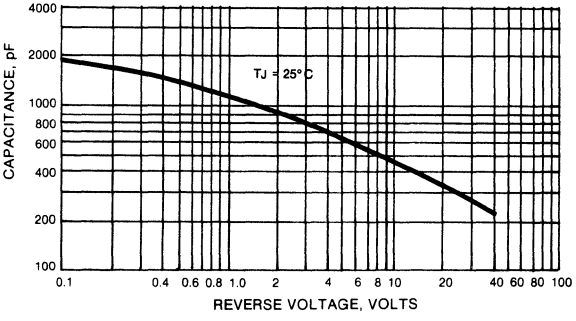


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



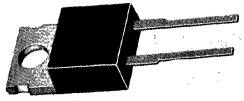


HIGH CURRENT SCHOTTKY RECTIFIERS 5 TO 40 AMPERES

SBS5-T SERIES

SCHOTTKY RECTIFIER

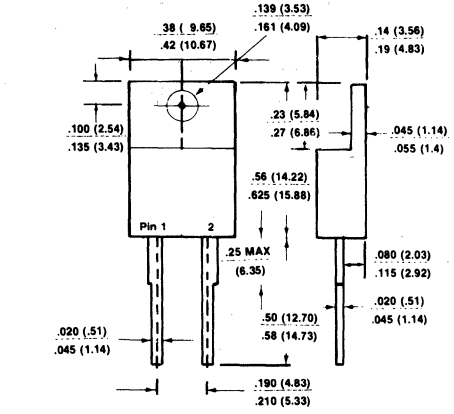
GENERAL INSTRUMENT



VOLTAGE RANGE
20 to 45 Volts

CURRENT
5.0 Amperes

TO-220



All dimensions in inches and (millimeters)

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal of silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity portection applications

MECHANICAL DATA

Case: To-220 molded plastic
Terminals: Lead solderable per MIL-STD-202 Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SBS520T	SBS530T	SBS535T	SBS540T	SBS545T	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	V
Maximum RMS Voltage	14	21	24.5	28	31.5	V
Maximum DC Blocking Voltage	20	30	35	40	45	V
Maximum Average Forward Rectified Current See Fig. 1	5.0					A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	100					A
Maximum Instantaneous Forward Voltage I_F = 5.0A, T_C = 25°C (Note 3)	.55					V
Maximum Average Reverse Current at T_C = 25°C Rated DC Blocking Voltage per element T_C = 125°C	3.5 33					mA mA
Typical Thermal Resistance $R\Theta JC$ (Note 1)	3.0					°C/W
Typical Junction Capacitance (Note 2)	600					pF
Operating Temperature Range Tc	-65 to +125					°C
Storage Temperature Range T_{STG}	-65 to +125					°C

NOTES:
1. Thermal Resistance Junction to CASE.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. 300 μs Pulse Width, 2% Duty Factor.

RATING CHARACTERISTIC CURVES
SBS5-T SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

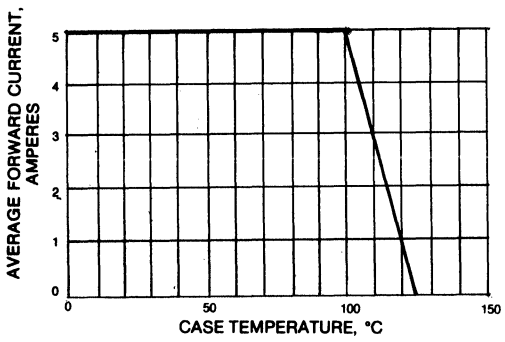


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

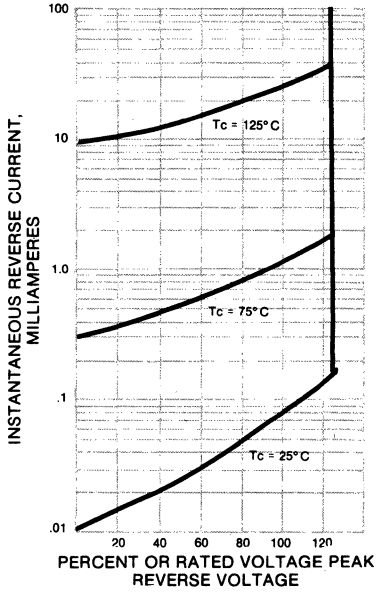
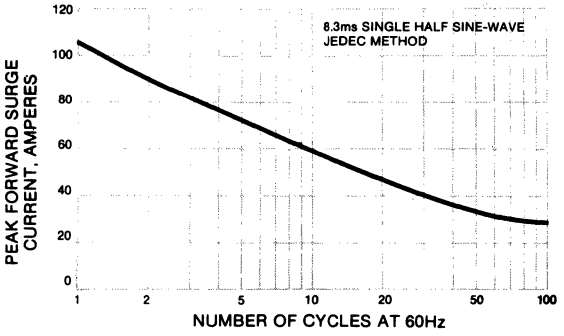


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT



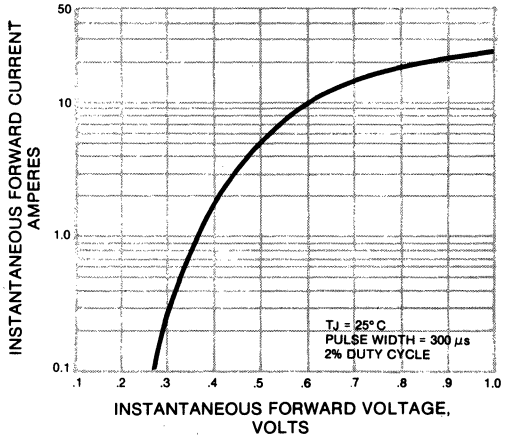
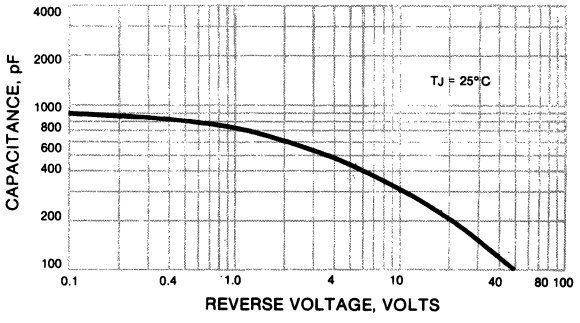


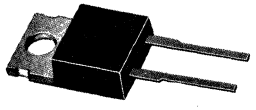
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SBS8-T SERIES

SCHOTTKY RECTIFIER

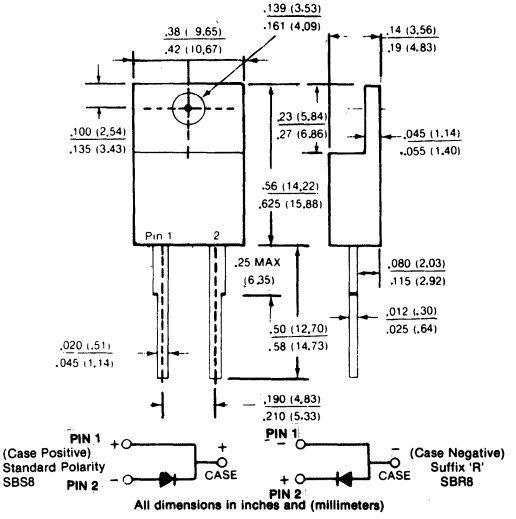
GENERAL INSTRUMENT



VOLTAGE RANGE
20 to 60 Volts

CURRENT
8.0 Amperes

TO-220



All dimensions in inches and (millimeters)

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal of silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202. Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SBS820T	SBS830T	SBS835T	SBS840T	SBS845T	SBS850T	SBS860T	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	50	60	V
Maximum RMS Voltage	14	21	24.5	28	31.5	35	42	V
Maximum DC Blocking Voltage	20	30	35	40	45	50	60	V
Maximum Average Forward Rectified Current See Fig. 1	8.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	250							A
Maximum Instantaneous Forward Voltage I_F = 8.0A, Tc = 125°C (Note 3) I_F = 8.0A, Tc = 25°C	.55 .65					.65 .75		V
Maximum Average Reverse Current at Tc = 25°C Rated DC Blocking Voltage per element Tc = 100°C	5 50							mA mA
Typical Thermal Resistance ROJC (Note 1)	3.0							°C/W
Typical Junction Capacitance (Note 2)	700					460		pF
Operating Temperature Range T_J	-65 to +125					-65 to +150		°C
Storage Temperature Range T_{STG}	-65 to +150							°C

NOTES:
1. Thermal Resistance Junction to CASE.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. 300 μs Pulse Width, 2% Duty Factor.

RATING CHARACTERISTIC CURVES
SBS8-T SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

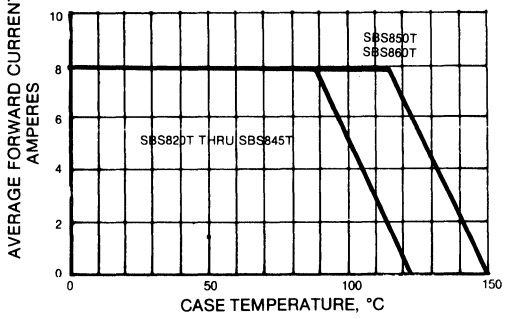


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

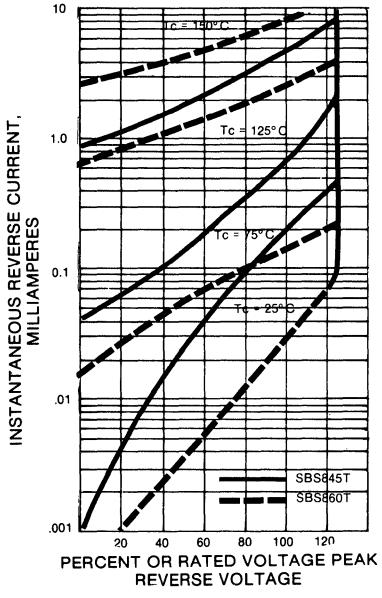


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

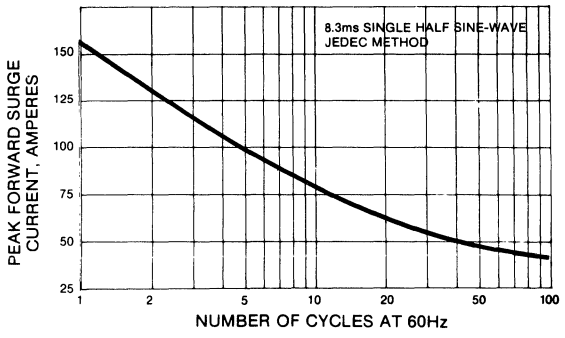


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

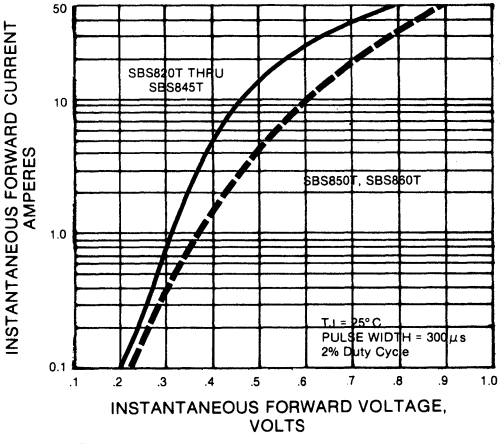
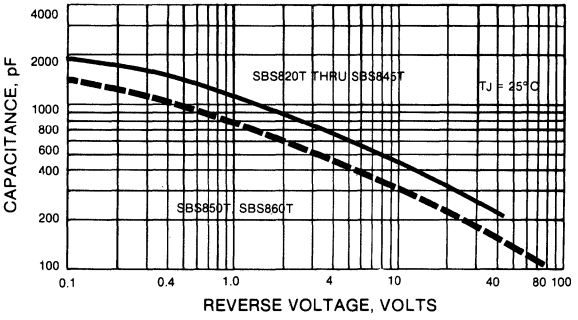


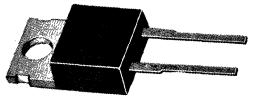
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SBS10-T SERIES

SCHOTTKY RECTIFIER

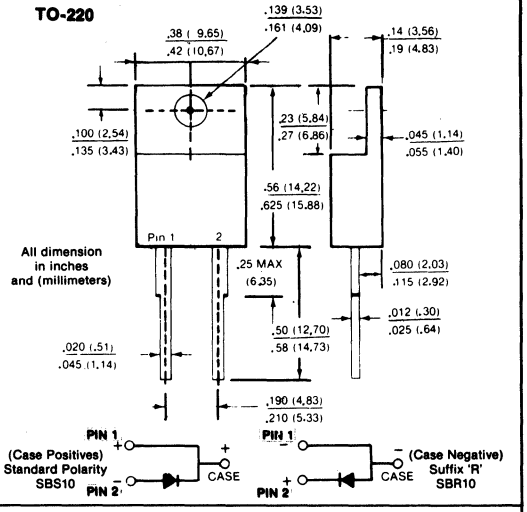
GENERAL INSTRUMENT



VOLTAGE RANGE
20 to 45 Volts

CURRENT
10.0 Amperes

TO-220



FEATURES
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier condition
- Low power loss high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.

MECHANICAL DATA
Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202 Method 208
Polarity: As marked
Mounting Position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, reistive or inductive load.
For capacitive load, derate current by 20%.

	SBS1020T	SBS1030T	SBS1035T	SBS1040T	SBS1045T	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	
MAXIMUM RMS Voltage	**14**	**21**	**24.5**	**28**	**31.5**	V
DC Blocking Voltage	20	30	35	40	45	
Maximum Average Forward Rectified Current at Tc = 135°C	10					A
Peak Repetitive Forward Current, (Square Wave 20KHz) at Tc = 135°C	20					A
Peak Forward Surge Current 8.3ms single half wine-wave superimposed on rated load (JEDEC method)	150					A
Peak Repetitive Reverse Surge Current (2.0μS, 1 KHz)	1.0					A
Voltage Rate of Change, dv/dt (rated V_R)	1000					V/μS
Maximum Forward Voltage (Note 1) I_F = 10A, Tc = 125°C I_F = 20A, Tc = 125°C I_F = 20A, Tc = 25°C	 0.57 0.72 0.84					V
Maximum Reverse Current at Peak Reverse Voltage Tc = 25°C (Note 1) Tc = 125°C	 0.1 15					mA
Maximum Thermal Resistance $R\Theta JC$, Junction to Case	2.0					°C/W
Maximum Operating Junction Temperature, Tc	-65 to +150					°C
Maximum Storage Temperature, T_{STG}	-65 to +175					°C

NOTE 1. Pulse Test Pulse Width 300μs, Duty Cycle 2%.

RATING AND CHARACTERISTIC CURVES
SBS10-T SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

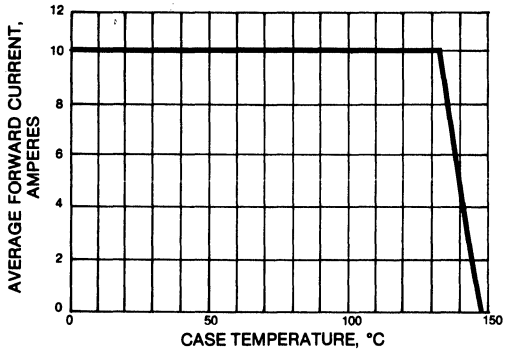


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

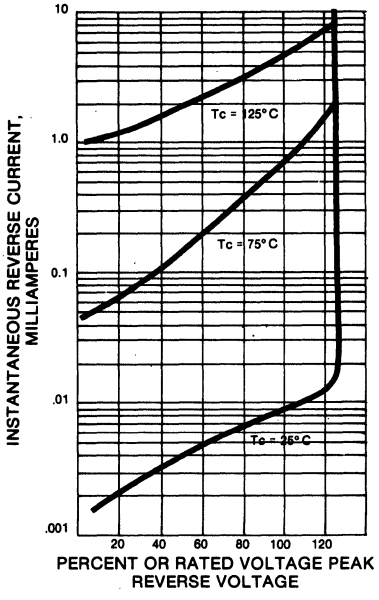


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

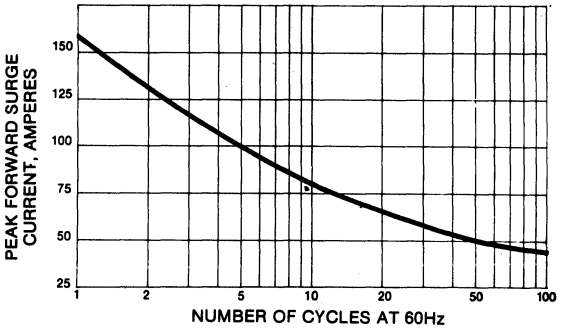


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

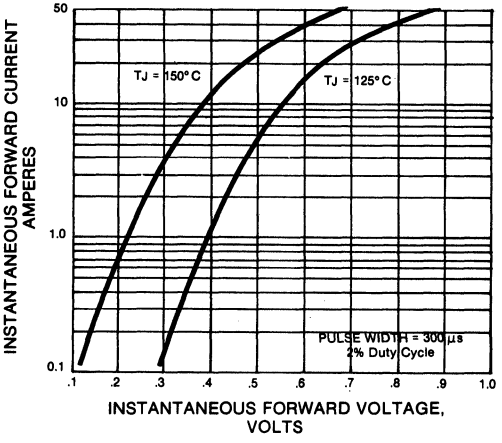
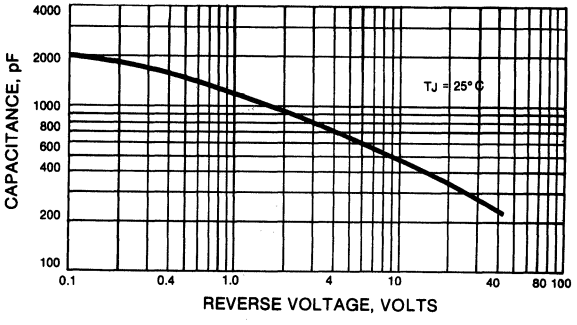


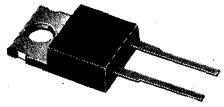
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SBS1620T THRU SBS1645T

SCHOTTKY RECTIFIERS

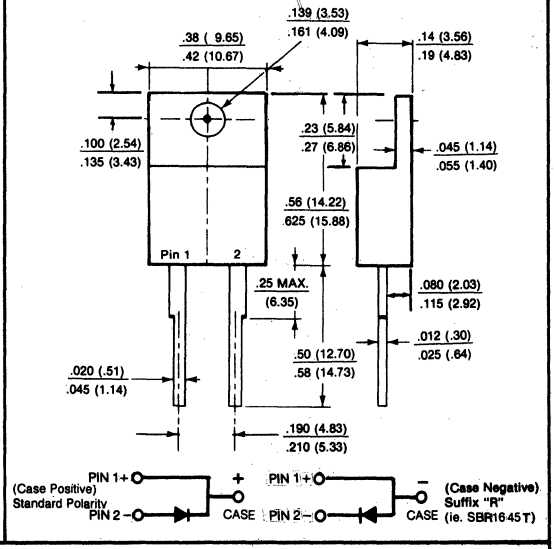
GENERAL INSTRUMENT



VOLTAGE RANGE
20 to 45 Volts

CURRENT
16 Amperes

TO-220



FEATURES

- Plastic Material used carries Underwriters Laboratory recognition
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD 202. Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SBS1620T	SBS1635T	SBS1640T	SBS1645T	UNITS
Maximum Recurrent Peak Reverse Voltage	20	35	40	45	V
Working Peak Reverse Voltage	20	35	40	45	V
Maximum DC Blocking Voltage	20	35	40	45	V
Maximum Average Forward Rectified Current at T_C = 115°C	16				A
Peak Repetitive Forward Current (Square Wave 20KHz, 50% Duty Cycle) at T_C = 115°C	32				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	250				A
Voltage Rate of Change, dv/dt (rated V_R)	1000				V/μS
Maximum Forward Voltage (Note 1) I_F = 16A, T_C = 125°C I_F = 16A, T_C = 25°C	0.55 0.65				V
Maximum Reverse Current at Peak Reverse Voltage T_C = 25°C (Note 1) T_C = 125°C	10 50				mA
Maximum Thermal Resistance $R_{\Theta JC}$ Junction to Case	2.0				°C/W
Typical Junction Capacitance, V_R = 5V	2000				pF
Maximum Operation Junction Temperature, T_J	-65 to +150				°C
Maximum Storage Temperature, T_{STG}	-65 to +150				°C

NOTE:
1. Pulse Test Pulse Width 300μS, Cuty Cycle 2%.

RATING CHARACTERISTIC CURVES
SBS1620T thru SBS1645T

Fig. 1—FORWARD CURRENT DERATING CURVE

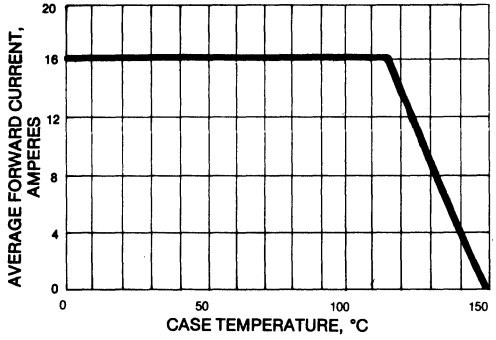


Fig. 2—TYPICAL REVERSE CHARACTERISTICS

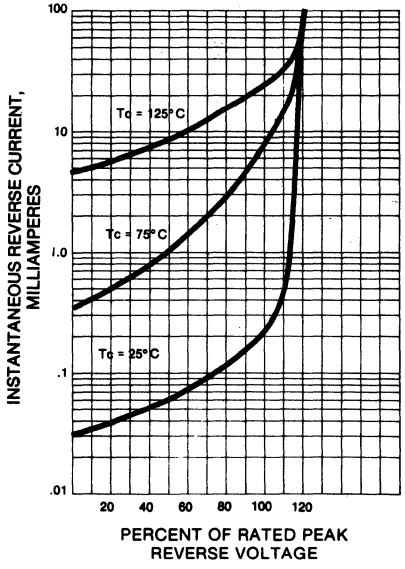


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

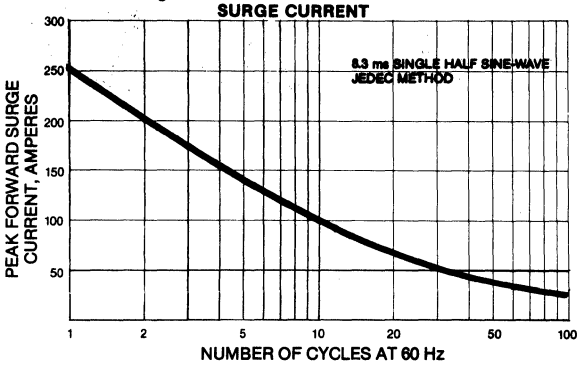


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

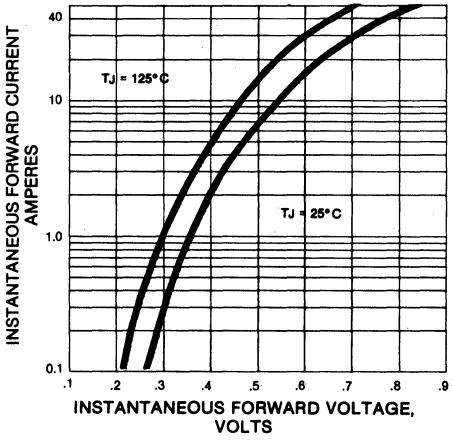
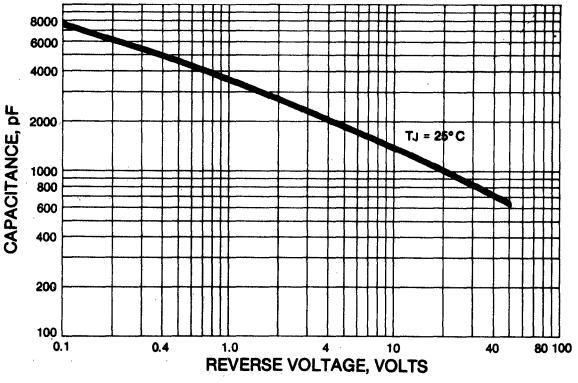


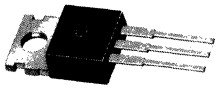
Fig. 5—TYPICAL JUNCTION CAPACITANCE



SBP10-T SERIES

SCHOTTKY RECTIFIER

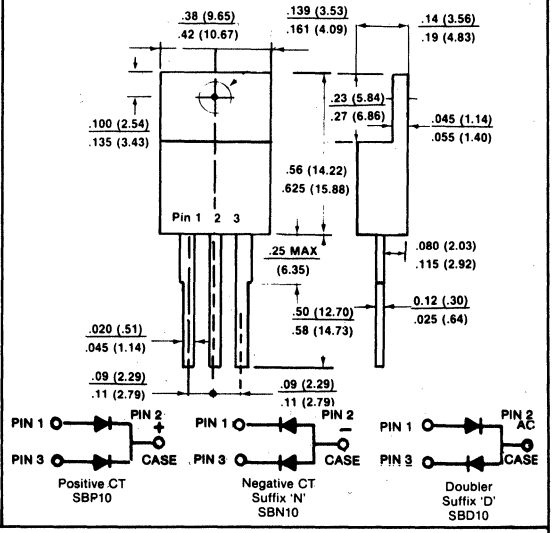
GENERAL INSTRUMENT



VOLTAGE RANGE
20 to 45 Volts

CURRENT
10 Amperes

TO-220 CT



FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0 utilizing General
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Dual rectifier construction, positive center-tap

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD 202 Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SBP 1020T	SBP 1030T	SBP 1035T	SBP 1040T	SBP 1045T	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	V
Maximum RMS Voltage	14	21	24.5	28	31.5	V
Maximum DC Blocking Voltage	20	30	35	40	45	V
Maximum Average Forward Rectified Current See Figure 1	10.0					A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	100					A
Maximum Instantaneous Forward Voltage Per Leg I_F = 5.0A, Tc = 25°C (Note 3)	.55					V
Maximum Average Reverse Current at Tc = 25°C Rated DC Blocking Voltage per element	3.5					mA
Typical Thermal Resistance RΘJC (Note 1)	3.0					°C/W
Typical Junction Capacitance (Note 2)	650					pF
Operating Temperature Range, Tc	-65 to +125					°C
Storage Temperature Range, T_{STG}	-65 to +150					°C

NOTES:
1. Thermal Resistance Junction to CASE.
2. Measured at 1MHz and applied reverse voltage of 4.0 volts.
3. 300μs Pulse Width, 2% Duty Factor.

RATING AND CHARACTERISTIC CURVES
SBP10-T SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

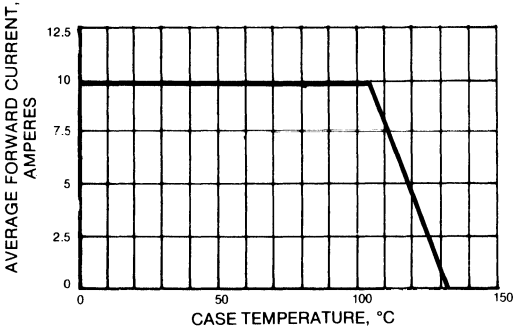


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

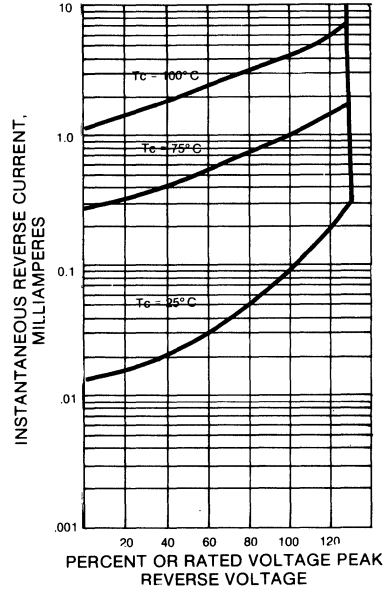


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

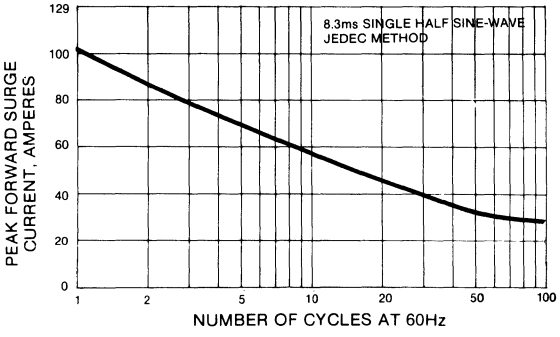


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

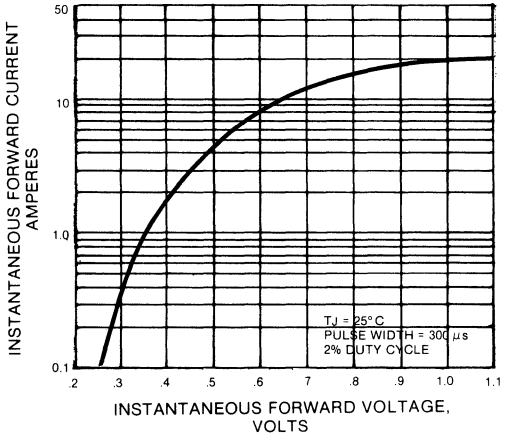
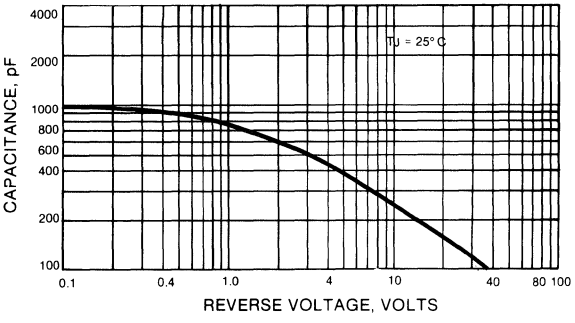


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SBP16-T SERIES

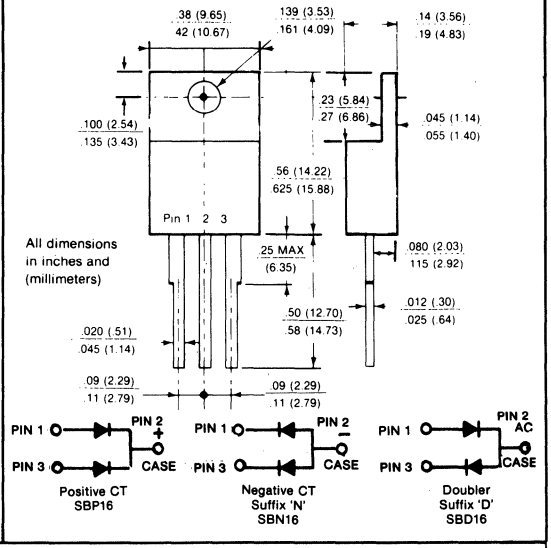
SCHOTTKY RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
20 to 60 Volts

CURRENT
16 Amperes

TO-220 CT



FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O.
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting Position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SBP 1620T	SBP 1630T	SBP 1635T	SBP 1640T	SBP 1645T	SBP 1650T	SBP 1660T	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	50	60	V
Maximum RMS Voltage	14	21	24.5	28	31.5	35	42	V
Maximum DC Blocking Voltage	20	30	35	40	45	50	60	V
Maximum Average Forward Rectified Current See Fig. 1	16.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	250							A
Maximum Instantaneous Forward Voltage Per Leg I_F = 8.0A, Tc = 125°C (Note 3) I_F = 8.0A, Tc = 25°C	.55 .65					.65 .75		V V
Maximum Average Reverse Current at Tc = 25°C Rated DC Blocking Voltage per element Tc = 100°C	5 50							mA mA
Typical Thermal Resistance $R_{\Theta JC}$ (Note 1)	3.0							°C/W
Typical Junction Capacitance (Note 2)	700					460		pF
Operating Temperature Range, Tc	-65 to +125					-65 to +150		°C
Storage Temperature Range, T_{STG}	-65 to +150							°C

NOTES:
1. Thermal Resistance Junction to CASE.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. 300 μs Pulse Width, 2% Duty Factor.

RATING AND CHARACTERISTIC CURVES
SBP16-T SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

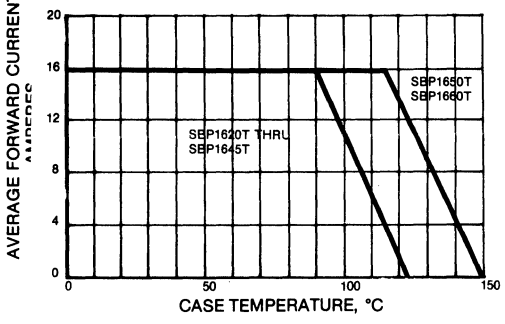


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

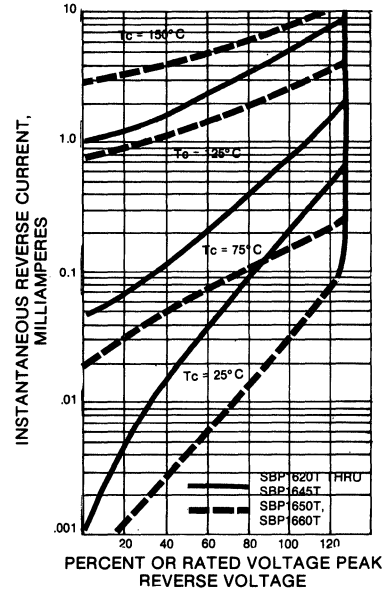


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

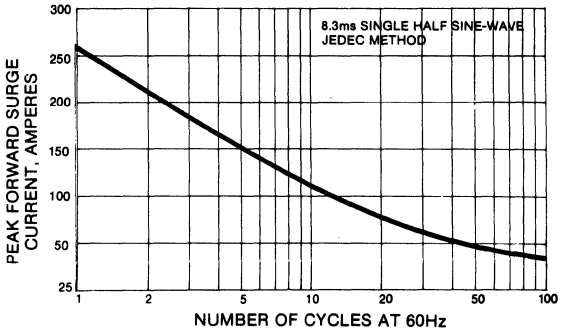


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

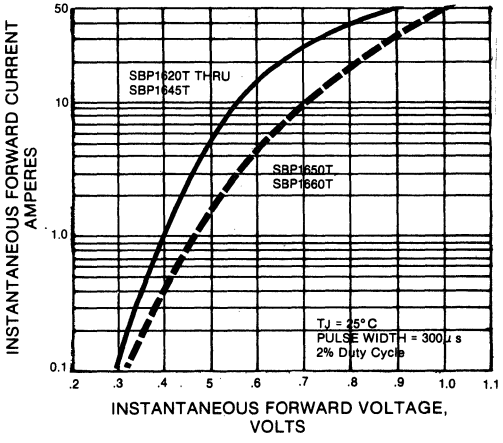
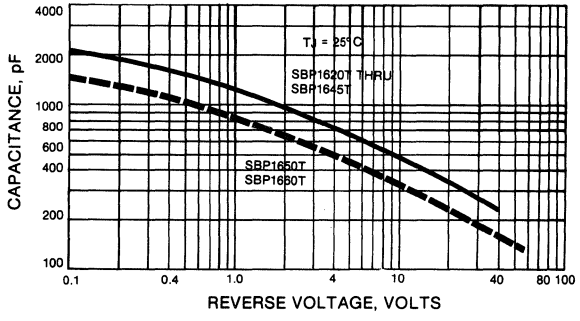


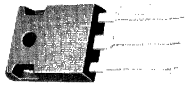
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SLP20-P SERIES

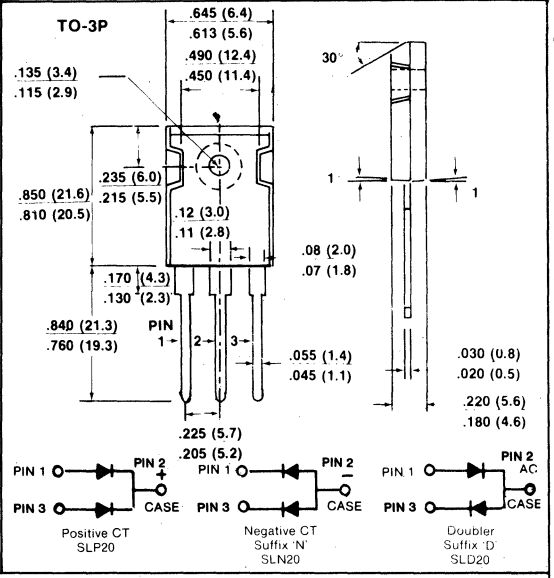
SCHOTTKY RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
20 to 45 Volts

CURRENT
20 Amperes



FEATURES

- Dual rectifier construction, positive center-tap
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

MECHANICAL DATA

Case: TO-3P
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting Position: Any
Weight: .47 ounces, 13.2 ounces

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SLP 2020P	SLP 2030P	SLP 2035P	SLP 2040P	SLP 2045P	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	V
Maximum RMS Voltage	14	21	24.5	28	31.5	V
Maximum DC Blocking Voltage	20	30	35	40	45	V
Maximum Average Forward Rectified Current See Fig. 1	20					A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	120					A
Maximum Instantaneous Forward Voltage Per Leg I_F = 10.0A, Tc = 25° C (Note 3)	.55					V
Maximum Average Reverse Current at Tc = 25° C Rated DC Blocking Voltage per element	15					mA
Typical Thermal Resistance $R\Theta JC$ (Note 1)	1.5					°C/W
Typcial Junction Capacitance (Note 2)	1700					pF
Operating Temperature Range Tc	-65 to +125					°C
Storage Temperature Range, T_{STG}	-65 to +125					°C

NOTES:
1. Thermal Resistance to CASE.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. 300 μs Pulse Width, 2% Duty Factor.

RATING AND CHARACTERISTIC CURVES
SLP20-P

FIG. 1 — FORWARD CURRENT DERATING CURVE

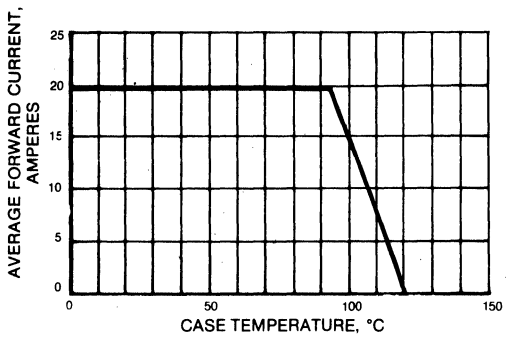


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

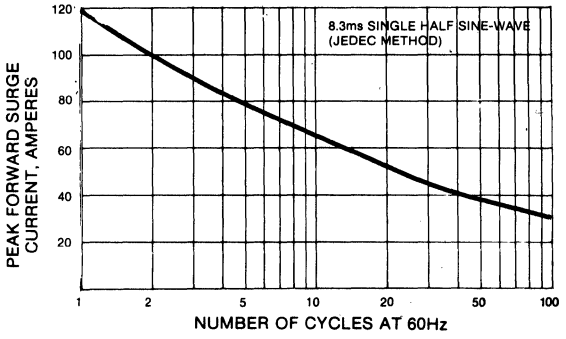


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

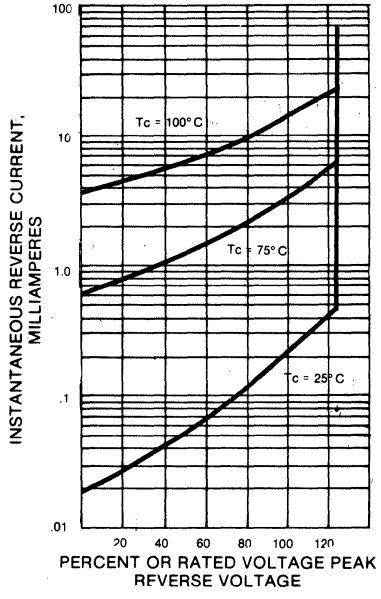


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

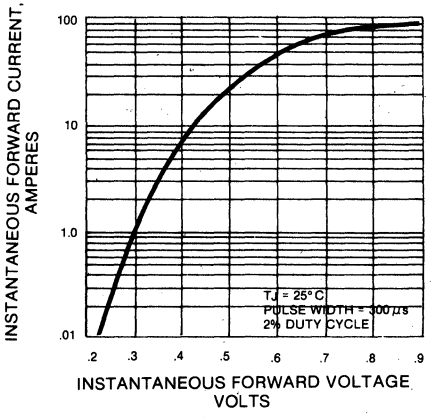
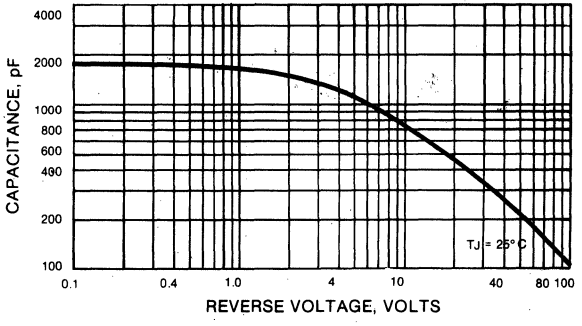


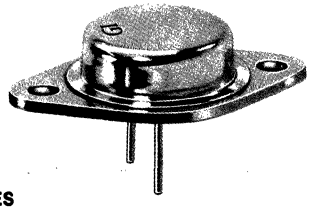
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SD241

SCHOTTKY RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
45 Volts

CURRENT
30 Amperes

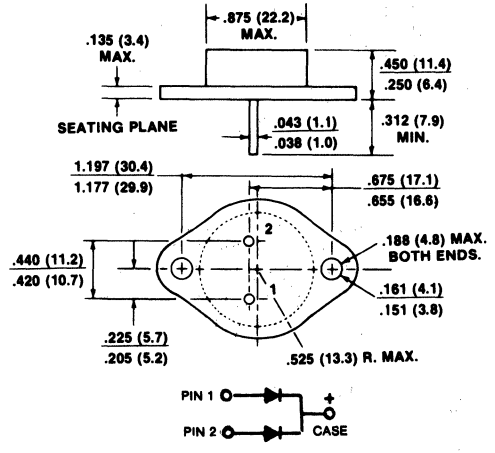
FEATURES

- Dual rectifier construction, positive center-tap
- Convenient, mechanically rugged, hermetically sealed package
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

MECHANICAL DATA

Case: TO-3
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting Position: Any
Weight: .47 ounces, 13.2 grams

TO-3



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

		SD241	UNITS
Maximum Recurrent Peak Reverse Voltage at Tc = 25°C		45	V
Maximum DC Blocking Voltage at Tc = 25°C		45	V
Maximum Average Forward Rectified Current at Tc = 95°C		30	A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)		400	A
Peak Repetitive Reverse Surge Current at 2.0 μs, 1 KHz		2.0	A
Maximum Instantaneous Forward Voltage Pulse Width = 300 μs, Duty Cylce = 1% at			
I_F = 10A, Tc = 125°C		.47	V
I_F = 20A, Tc = 125°C		.60	V
Maximum Instantaneous Reverse Current Pulse Width = 400 μs, Duty Cycle = 1% at 35V	Tc = 25°C	25	mA
	Tc = 125°C	100	mA
Maximum Voltage Rate of Change at 35V, dv/dt		1000	V/μs
Package Thermal Resistance $R\Theta JC$ (Note 1)		1.4	°C/W
Maximum Junction Capacitance (Note 2)		2000	pF
Operating Temperature Range Tc		-65 to +150	°C
Storage Temperature Range T_{STG}		-65 to +175	°C

NOTES:
1. Thermal Resistance Junction to Case.
2. Measured at 1 MHz and applied reverse voltage of 5.0 volts.

RATING CHARACTERISTIC CURVES
SD241

FIG. 1 — FORWARD CURRENT DERATING CURVE

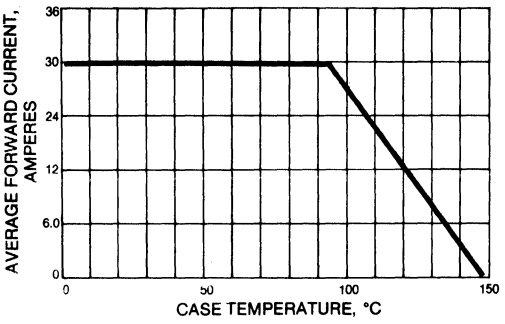


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

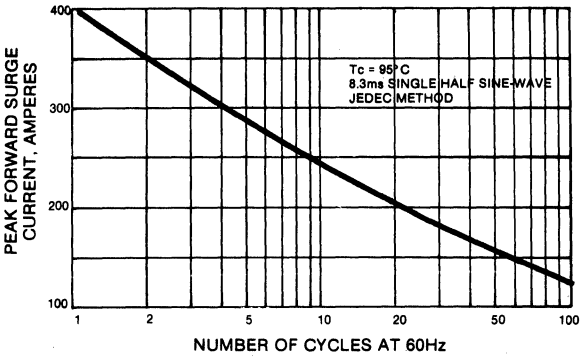


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

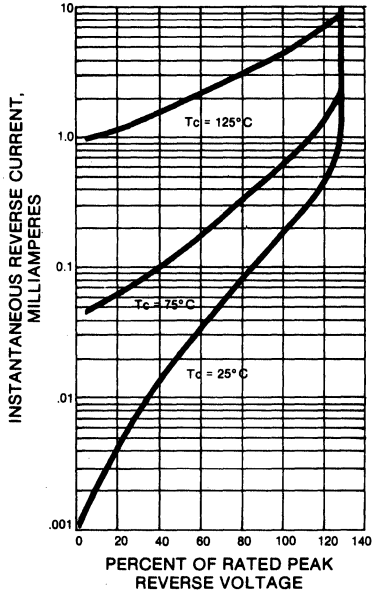


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

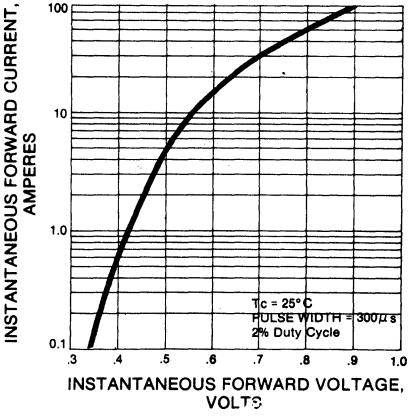
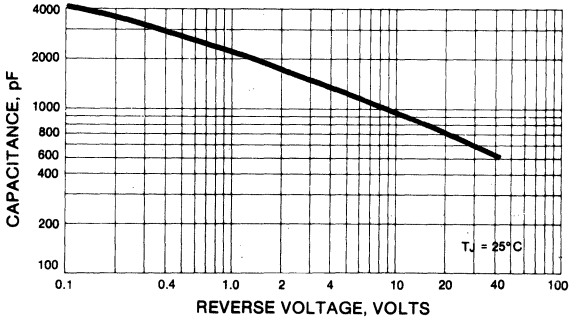


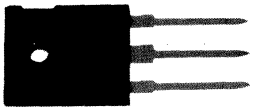
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SD241P

SCHOTTKY RECTIFIERS

GENERAL INSTRUMENT



VOLTAGE RANGE
45 Volts

CURRENT
30 Amperes

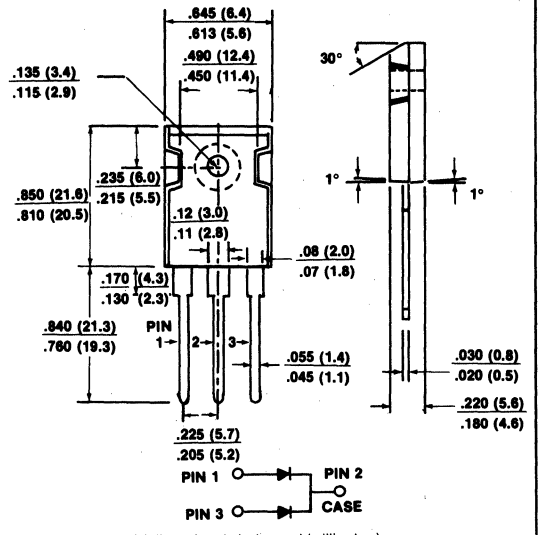
FEATURES

- Dual rectifier construction, positive center-tap
- Plastic material used carries Underwriters Laboratory Falmmability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction using a Epitaxial construction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed: 300°C, .17", 4.3mm from case for 10 seconds

MECHANICAL DATA

Case: TO-3P
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .47 ounces, 13.2 grams

TO-3P



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified. For capactive load, derate current by 20%.
Single phase, half wave, 60Hz, resistive or inductive load.

		SD241P	UNITS
Maximum Recurrent Peak Reverse Voltage at Tc = 25°C		45	V
Maximum Blocking Voltage at Tc = 25°C		45	V
Maximum Average Forward Rectified Current at Tc = 95°C		30	A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)		400	A
Peak Repetitive Reverse Surge Current at 2.0 μs, 1 KHz		2.0	A
Maximum Instantaneous Forward Voltage Pulse Width = 300 μs, Duty Cycle = 1% at			
I_F = 10A, Tc = 125°C		.47	V
I_F = 20A, Tc = 125°C		.60	
Maximum Instantaneous Reverse Current			
Pulse Width = 400 μs, Duty Cycle = 1% at 35V	Tc = 25°C	25	mA
	Tc = 125°C	100	mA
Maximum Voltage Rate of Change at 35V, dv/dt		1900	V/μs
Package Thermal Resistance RΘJC (Note 1)		1.4	°C/W
Maximum Junction Capacitance (Note 2)		2000	pF
Operating Temperature Range Tc		-65 to +150	°C
Storage Temperature Range T_{STG}		-65 to +175	°C

NOTES:
1. Thermal Resistance Junction to Case. 2. Measured at 1MHz and applied reverse voltage of 5.0 volts.

RATING CHARACTERISTIC CURVES
SD241P

FIG. 1—FORWARD CURRENT DERATING CURVE

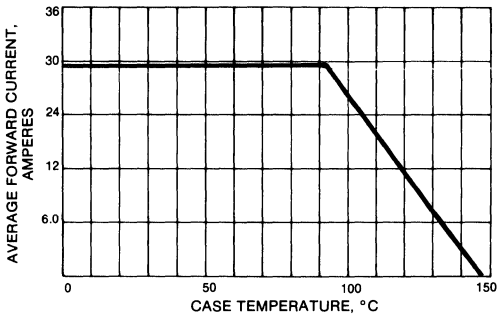


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

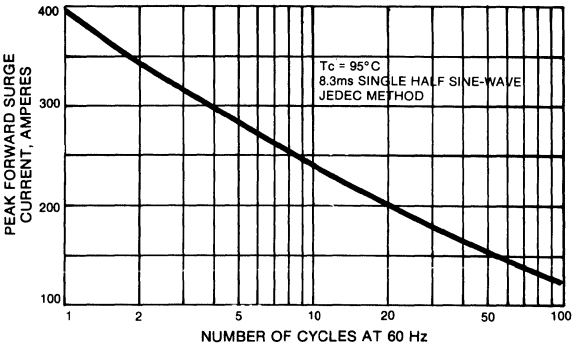


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

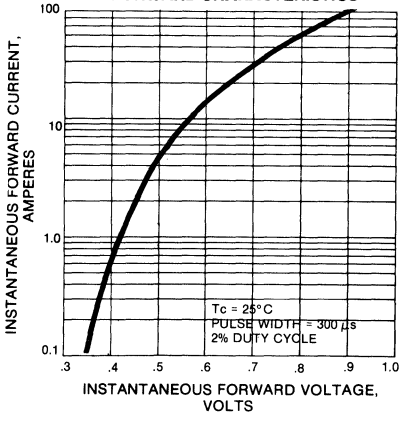


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

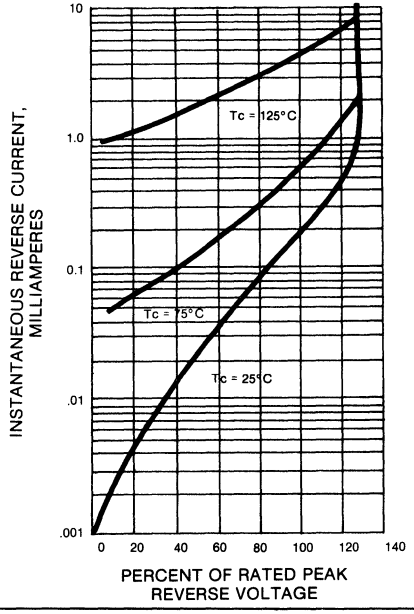
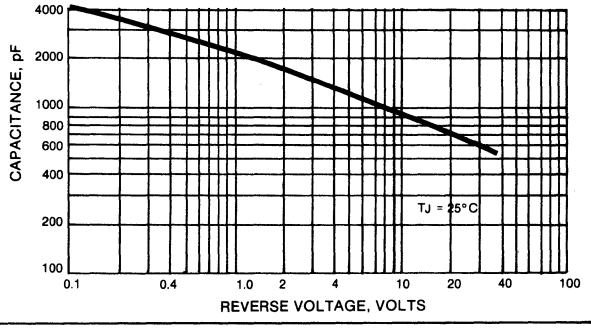


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



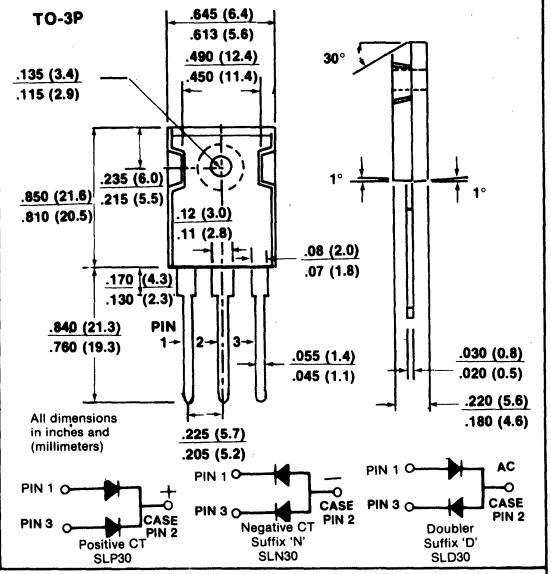
SLP30-P SERIES

SCHOTTKY RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
20 to 45 Volts

CURRENT
30 Amperes



FEATURES

- Dual rectifier construction, positive center-tap
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

MECHANICAL DATA

Case: TO-3P
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting Position: Any
Weight: .47 ounces, 13.2 ounces

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SLP 3020P	SLP 3030P	SLP 3035P	SLP 3040P	SLP 3045P	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	V
Maximum RMS Voltage	14	21	24.5	28	31.5	V
Maximum DC Blocking Voltage	20	30	35	40	45	V
Maximum Average Forward Rectified Current See Fig. 1	30					A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	250					A
Maximum Instantaneous Forward Voltage Per Leg I_F = 15A, Tc = 25°C (Note 3)	.55					V
Maximum Average Reverse Current at Tc = 25°C Rated DC Blocking Voltage per element	20					mA
Typical Thermal Resistance $R\Theta JC$ (Note 1)	1.2					°C/W
Typical Junction Capacitance (Note 2)	1700					pF
Operating Temperature Range, Tc	-65 to +125					°C
Storage Temperature Range, T_{STG}	-65 to +125					°C

NOTES:
1. Thermal Resistance Junction to CASE.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. 300μs Pulse Width, 2% Duty Factor.

RATING AND CHARACTERISTIC CURVES
SLP30-P

FIG. 1 — FORWARD CURRENT DERATING CURVE

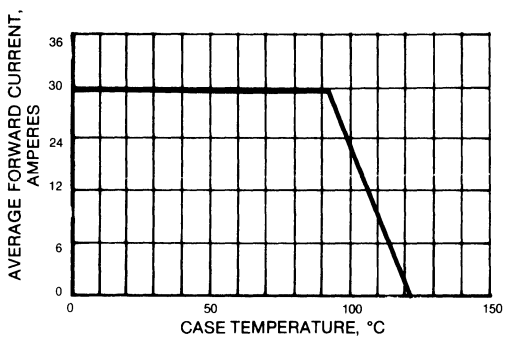


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

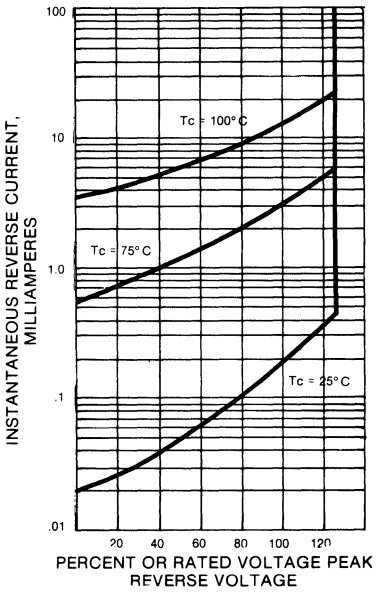


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

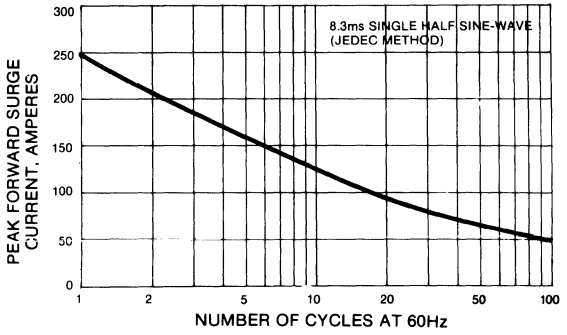


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

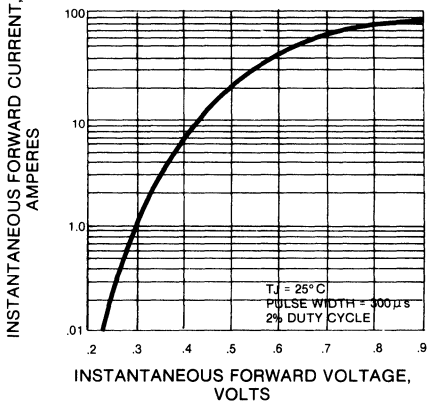
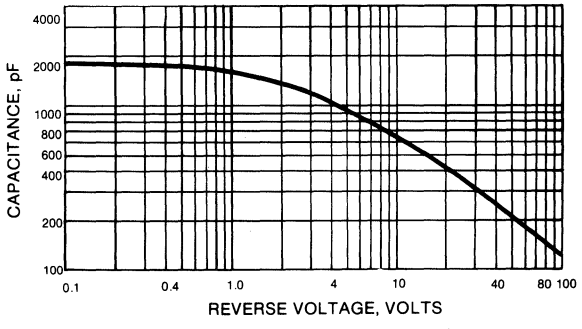


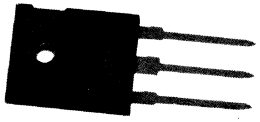
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SBP30-P SERIES

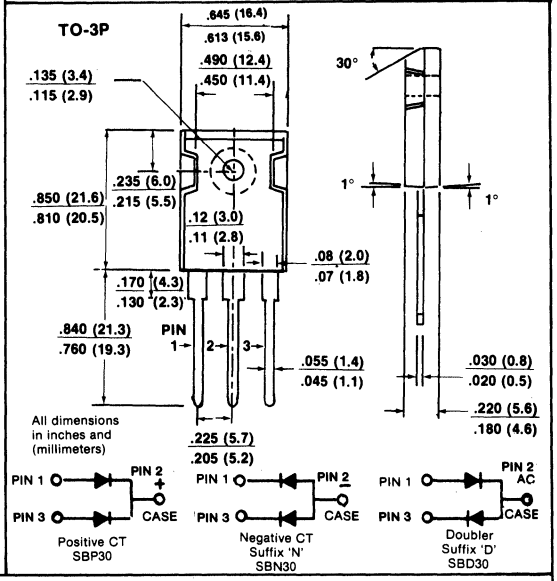
SCHOTTKY RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
20 to 60 Volts

CURRENT
30 Amperes



FEATURES

- Dual rectifier construction, positive center-tap
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

MECHANICAL DATA

Case: TO-3P
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting Position: Any
Weight: .47 ounces, 13.2 ounces

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SBP3020P	SBP3030P	SBP3035P	SBP3040P	SBP3045P	SBP3050P	SBP3060P	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	50	60	V
Maximum RMS Voltage	14	21	24.5	28	31.5	35	42	V
Maximum DC Blocking Voltage	20	30	35	40	45	50	60	V
Maximum Average Forward Rectified Current See Fig. 1	30							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300							A
Maximum Instantaneous Forward Voltage Per Leg I_F = 15A, T_C = 125° C (Note 3)	.55					.65		V
I_F = 15A, T_C = 25° C	.65					.75		V
Maximum Average Reverse Current at T_C = 25° C	10							mA
Rated DC Blocking Voltage per element **T_C = 100° C**	100							mA
Typical Thermal Resistance $R_{\Theta JC}$ (Note 1)	1.4							°C/W
Typical Junction Capacitance (Note 2)	1400			1400		700		pF
Operating Temperature Range T_C	-65 to +125					-65 to +150		°C
Storage Temperature Range, T_{STG}	-65 to +150							°C

NOTES:
1. Thermal Resistance Junction to CASE.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. 300μs Pulse Width, 2% Duty Factor.

RATING AND CHARACTERISTIC CURVES
SBP30-P SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

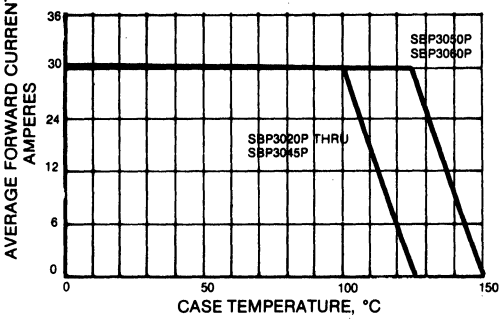


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

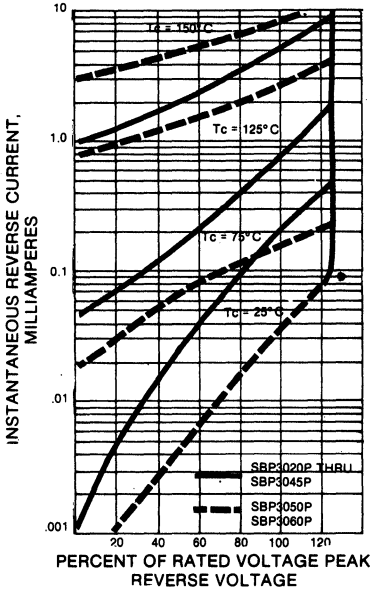


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

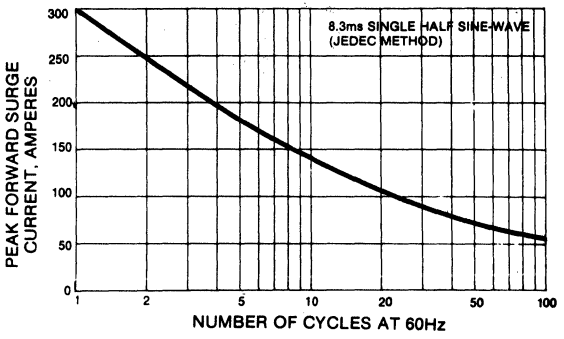


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

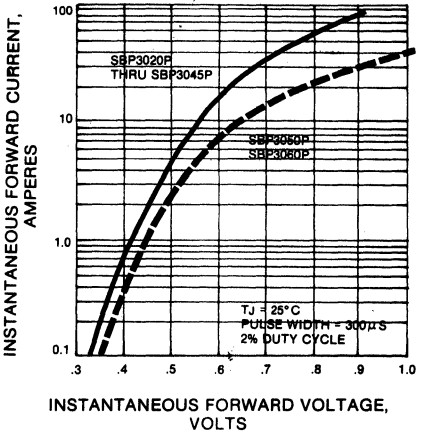
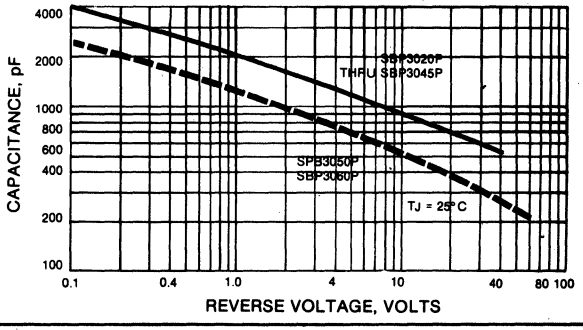


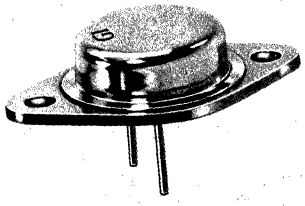
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SBP30-M SERIES

SCHOTTKY RECTIFIER

GENERAL INSTRUMENT



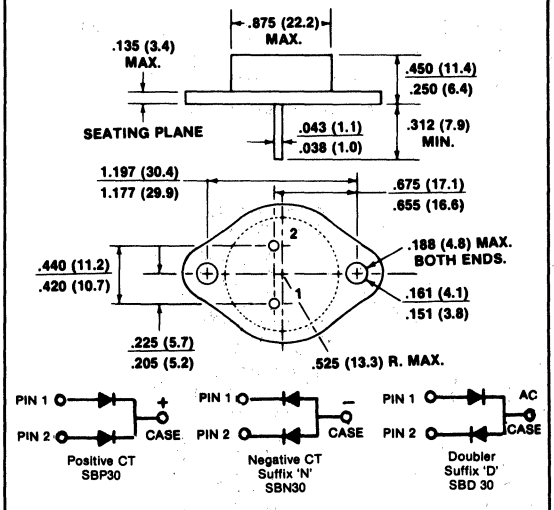
VOLTAGE RANGE
20 to 60 Volts

CURRENT
30 Amperes

FEATURES
- Dual rectifier construction, positive center-tap
- Convenient, mechanically rugged, hermetically sealed package
- Exceeds environmental standards of MIL-STD-19500
- Metal to silcon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.

MECHANICAL DATA
Case: TO-3
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting Position: Any
Weight: .47 ounces, 13.2 grams

TO-3



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. For capacitive load, derate current by 20%.
Single phase, half wave, 60Hz, resistive or inductive load.

	SBP 3020M	SBP 3030M	SBP 3035M	SBP 3040M	SBP 3045M	SBP 3050M	SBP 3060M	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	50	60	V
Maximum RMS Voltage	14	21	24.5	28	31.5	35	42	V
Maximum DC Blocking Voltage	20	30	35	40	45	50	60	V
Maximum Average Forward Rectified Current See Fig. 1	30							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300							A
Maximum Instantaneous Forward Voltage Per Leg I_F = 15A, T_C = 125°C (Note 3)	.55					.65		V
I_F = 15A, T_C = 25°C	.65					.75		V
Maximum Average Reverse Current at Rated DC Blocking Voltage per element T_C = 25°C	10							mA
T_C = 100°C	100							mA
Typical Thermal Resistance $R_{\theta JC}$ (Note 1)	1.4							°C/W
Typical Junction Capacitance (Note 2)	1400					700		pF
Operating Temperature Range, Tc	-65 to +125					-65 to +150		°C
Storage Temperature Range T_{STG}	-65 to +150							°C

NOTES:
1. Thermal Resistance Junction to CASE.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. 300μs Pulse Width, 2% Duty Factor.

RATING AND CHARACTERISTIC CUVES
SBP30-M SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

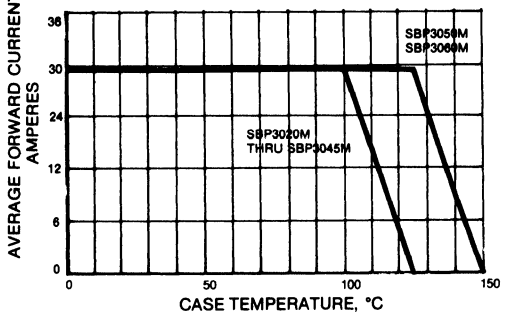


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

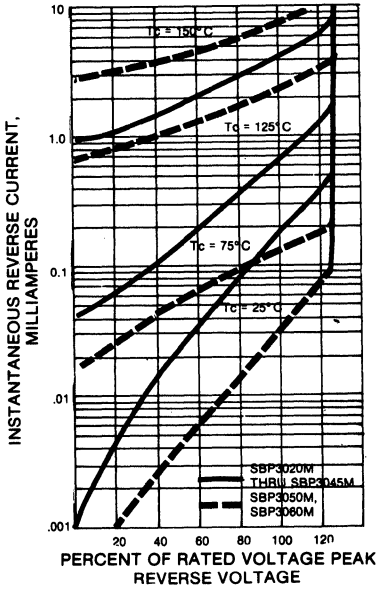


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

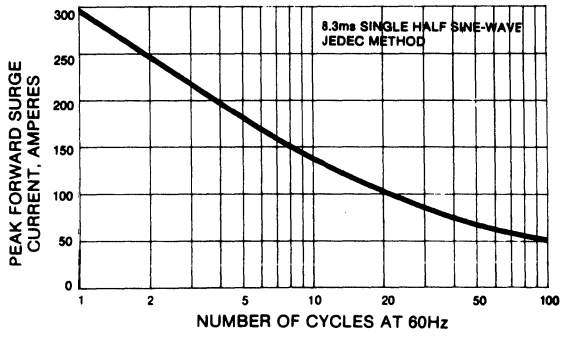


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

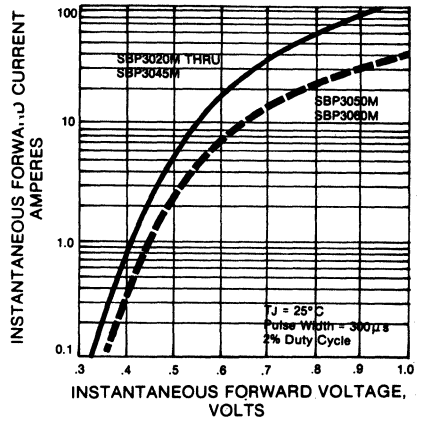
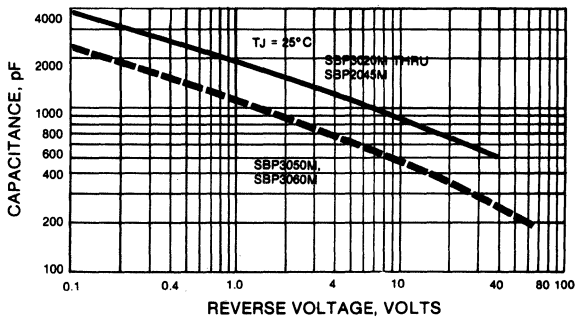


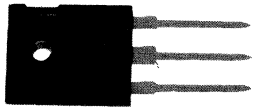
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SBP40-P SERIES

SCHOTTKY RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
20 to 60 Volts

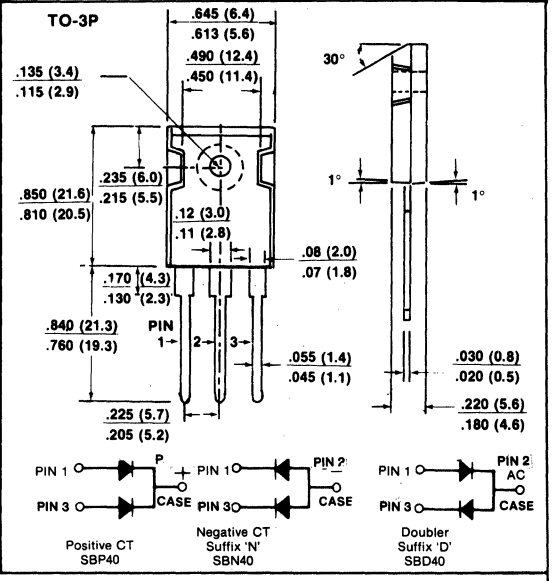
CURRENT
40 Amperes

FEATURES

- Dual rectifier construction, positive center-tap
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Epitaxial construction
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

MECHANICAL DATA

Case: TO-3P
Terminals: Leads solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting Position: Any
Weight: .47 ounces, 13.2 ounces



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SBP 4020P	SBP 4030P	SBP 4035P	SBP 4040P	SBP 4045P	SBP 4050P	SBP 4060P	UNITS
Maximum Recurrent Peak Reverse Voltage	20	30	35	40	45	50	60	V
Maximum RMS Voltage	14	21	24.5	28	31.5	35	42	V
Maximum DC Blocking Voltage	20	30	35	40	45	50	60	V
Maximum Average Forward Rectified Current See Fig. 1	40							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	300							A
Maximum Instantaneous Forward Voltage Per Leg I_F = 20A, Tc = 125°C (Note 3)	.60					.70		V
I_F = 20A, Tc = 25°C	.70					.80		V
Maximum Average Reverse Current at Tc = 25°C	10							mA
Rated DC Blocking Voltage per element Tc = 100°C	100							mA
Typical Thermal Resistance $R_{\theta JC}$ (Note 1)	1.4							°C/W
Typical Junction Capacitance (Note 2)	1400					700		pF
Operating Temperature Range Tc	-65 to +125					-65 to +150		°C
Storage Temperature Range, T_{STG}	-65 to +150							°C

NOTES:
1. Thermal Resistance Junction to CASE.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. 300μs Pulse Width, 2% Duty Factor.

RATING AND CHARACTERISTIC CURVES
SBP40-P SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

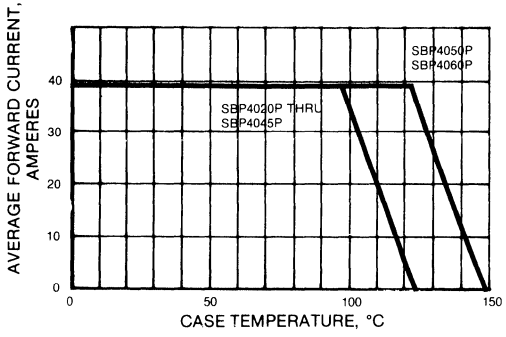


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

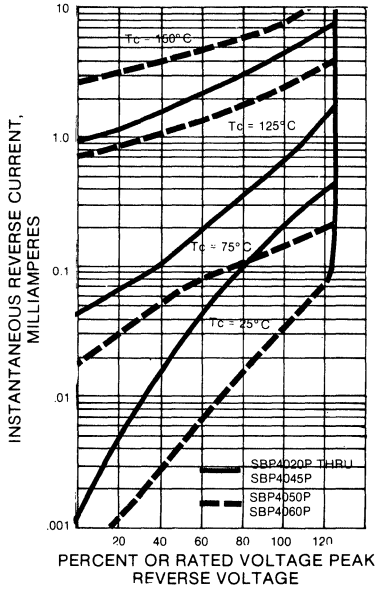


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

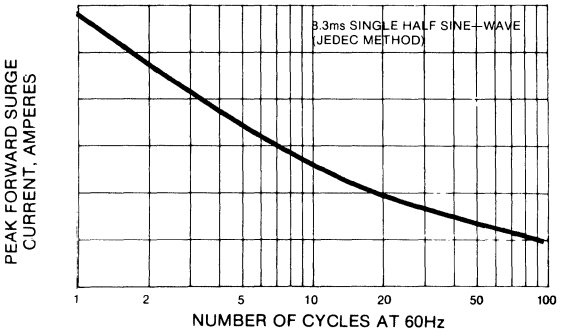


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

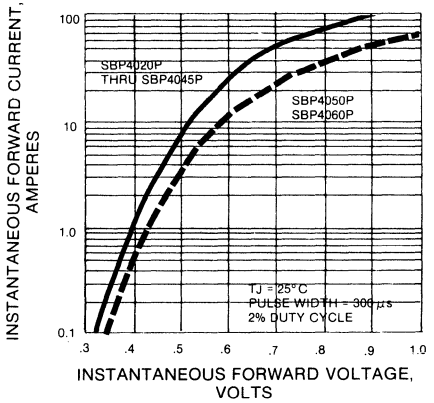
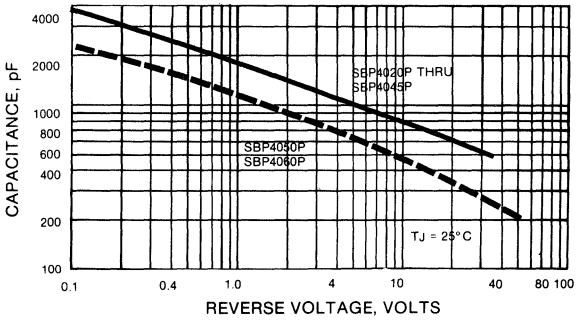


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



PLASTIC SCHOTTKY RECTIFIER BRIDGES 1 AMPERE

SDF SERIES

MINIATURE SINGLE-PHASE SCHOTTKY BRIDGE

GENERAL INSTRUMENT

VOLTAGE RANGE
10 to 60 Volts

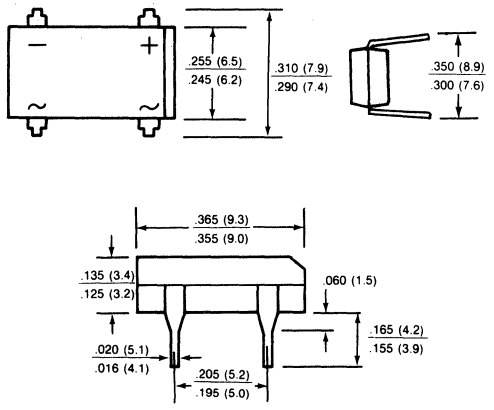
CURRENT
1.0 Ampere

FEATURES

- Plastic material used carries Underwriters Laboratory recognition.
- Ideal for printed circuit board
- Metal to silicon rectifier, majority carrier conduction
- Low power loss, high efficiency
- High surge capability
- Very low forward voltage drop
- Epitaxial construction
- Exceeds environmental standards of MIL-STD-19500

MECHANICAL

Case: Reliable low cost construction utilizing molded plastic technique.
Terminals: Leads solderable per MIL-STD-202, Methode 208.
Polarity symbols molded on body
Mounting position: Any
Weight: 0.04 ounce 1.0 gram.



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SDF10	SDF20	SDF30	SDF40	SDF50	SDF60	UNITS
Maximum Recurrent Peak Reverse Voltage	10	20	30	40	50	60	V
Maximum RMS Bridge Input Voltage	7	14	21	28	35	42	V
Maximum DC Blocking Voltage	10	20	30	40	50	60	V
Maximum Average Forward Output Current T_A = 40°C	1.0						A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load	75.0						A
Maximum Forward Voltage Drop per bridge element I_F = 100mA I_F = 500mA I_F = 1.0A	.475 .545 .600				.575 .625 .650		V
Maximum Reverse Current at rated T_A = 25°C DC Blocking Voltage per element T_A = 100°C	1.0 5.0						mA mA
Operating Temperature Range T_J	-65 to +125				-65 to +150		°C
Storage Temperature Range T_{STG}	-55 to +150						°C

FIG. 1—MAXIMUM FORWARD SURGE CURRENT

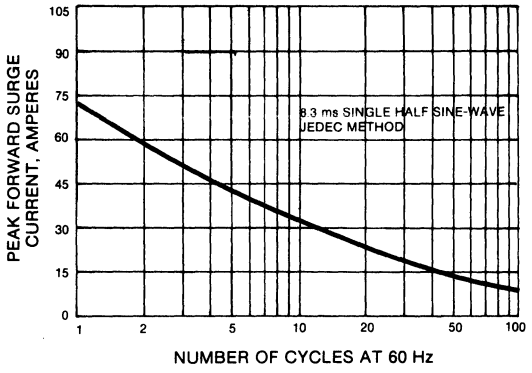


FIG. 2—DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

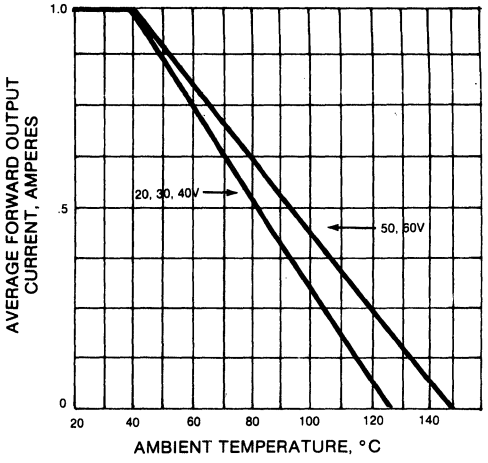


FIG. 3—TYPICAL FORWARD CHARACTERISTICS

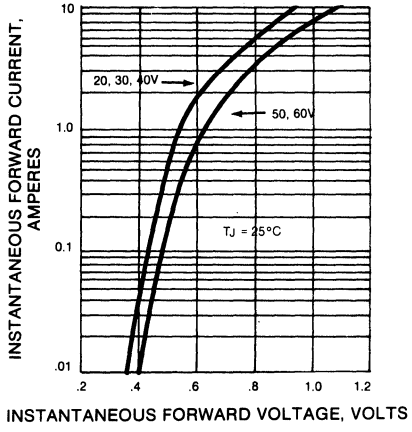
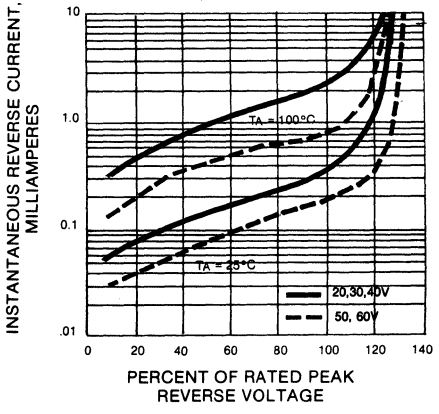


FIG. 4—TYPICAL REVERSE CHARACTERISTICS PER BRIDGE ELEMENT



FAST EFFICIENT RECTIFIERS 1 TO 30 AMPERES

GENERAL INSTRUMENT

FAMILIES OF GENERAL INSTRUMENT FAST EFFICIENT RECTIFIERS

Glass Passivated Fast Efficient Rectifiers 1 to 6 AMPERES

Types: FE1A thru FE1D
FE2A thru FE2D
FE3A thru FE3D
FE5A thru FE5D
FE6A thru FE6D

Features:
- Glass Passivated Junction
- Superfast Recovery
- Low Forward Voltage
- High Rectification Efficiency to 500 kHz
- High Mechanical Strength
- Hermetically Sealed
- Low Leakage
- Tin Plated Axial Leads Solderable per MIL-STD-202/208

Glass Passivated Junction Plastic Fast Efficient Rectifers 1 to 5 AMPERES

Types: EGP10A thru EGP10G
EGP20A thru EGP20G
EGP30A thru EGP30G
EGP50A thru EGP50G

Features:
- High Temperature Metallurgically Bonded
- Superfast Recovery
- High Rectification Efficiency to 500 kHz
- Low Forward Voltage
- No Thermal Runaway
- Exceeds Environmental Standards of MIL-STD-19500
- Includes all Advantages for the SUPERECTIFIER Design
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208

Plastic Fast Efficient Rectifiers 1 to 3 AMPERES

Types: UF4001 thru UF4007
UF5400 thru UF5406

Features:
- Low cost
- Superfast Recovery
- High Rectification Efficiency to 500 kHz
- Exceeds Environmental Standards of MIL-STD-19500

High Current Fast Efficient Rectifiers 8 to 30 AMPERES

Types: FES8AT thru FES8JT
FES16AT thru FES16JT
FEP16AT thru FEP16JT
FEP30AP thru FEP30JP
FEP30AM thru FEP30JM

Features:
- Superfast recovery times, high voltage
- Low forward voltage, high current capability
- Low thermal resistance
- Low power loss, high efficiency
- Dual rectifier construction, positive center-tap (FEP16/FEP30)

Fast Efficient Rectifer Bridges 1 AMPERE

Types: EDF1A—EDF1D

Features:
- Superfast Recovery
- High Rectification Efficiency to 500 kHz
- Low Forward Voltage
- No Thermal Runaway
- Exceeds Environmental Standards of MIL-STD-19500
- Tin Plated Leads, Solderable per MIL-STD-202/208

GENERAL INSTRUMENT

AXIAL FAST EFFICIENT RECTIFIERS

TYPE	EGP10A thru EGP10G	FE1A thru FE1D	UF4001 thru UF4007	EGP20A thru EGP20G	FE2A thru FE2D	EGP30A thru EGP30G	FE3A thru FE3D	UF5400 thru UF5406	EGP50A thru EGP50G	FE5A thru FE5D	FE6A thru FE6D	G1301 thru GI1304	TYPE
CASE	DO41	DO204AP	DO41	DO15	DO204AP	DO201A	G4	DO201AP	DO201AD	G4	G4	G4	CASE
I_o (A)	1	1	1	2	2	3	3	3	5	5	6	6	I_o (A)
T_A (°C)	55	55	55	55	55	55	55	55	55	55	55	55	T_A (°C)
V_R = 50 (V)	EGP10A	FE1A	UF4001	EGP20A	FE2A	EGP30A	FE3A	UF5400	EGP50A	FE5A	FE6A	GI1301	V_R = 50 (V)
V_R = 100 (V)	EGP10B	FE1B	UF4002	EGP20B	FE2B	EGP30B	FE3B	UF5401	EGP50B	FE5B	FE6B	GI1302	V_R = 100 (V)
V_R = 150 (V)	EGP10C	FE1C	–	EGP20C	FE2C	EGP30C	FE3C	–	EGP50C	FE5C	FE6C	GI1303	V_R = 150 (V)
V_R = 200 (V)	EGP10D	FE1D	UF4003	EGP20D	FE2D	EGP30D	FE3D	UF5402	EGP50D	FE5D	FE6D	GI1304	V_R = 200 (V)
V_R = 300 (V)	EGP10F		–	EGP20F		EGP30F		UF5403	EGP50F				V_R = 300 (V)
V_R = 400 (V)	EGP10G		UF4004	EGP20G		EGP30G		UF5404	EGP50G				V_R = 400 (V)
V_R = 500 (V)			–					UF5405					V_R = 500 (V)
V_R = 600 (V)			UF4005					UF5406					V_R = 600 (V)
V_R = 800 (V)			UF4006										V_R = 800 (V)
V_R = 1000 (V)			UF4007										V_R = 1000 (V)
SURGE (A)	30	30	30	75	50	125	125	150	150	135	150	150	SURGE (A)
V_F (V)	.95/1.25	0.95	1.0/1.2	.95/1.25	0.95	.95/1.25	0.95	1.0/1.1	.95/1.25	0.95	0.95	0.925	V_F (V)
Page	100	78	110	102	82	104	88	112	106	90	94	96	Page

GENERAL INSTRUMENT

HIGH CURRENT FAST EFFICIENT RECTIFIERS

TYPE	FES8AT thru FES8JT	FES16AT thru FES16GT	FEP16AT thru FEP16JT	FEP30AM thru FEP30JM	FEP30AP thru FEP30JP	TYPE
CASE	TO220	TO220	TO220CT	TO3M	TO3P	CASE
I_o (A)	8	16	16	30	30	I_o (A)
T_A (°C)	100	100	100	100	100	T_A (°C)
V_R = 50 (V)	FES8AT	FES16AT	FEP16AT	FEP30AM	FEP30AP	V_R = 50 (V)
V_R = 100 (V)	FES8BT	FES16BT	FEP16BT	FEB30BM	FEP30BP	V_R = 100 (V)
V_R = 150 (V)	FES8CT	FES16CT	FEP16CT	FEP30CM	FEP30CP	V_R = 150 (V)
V_R = 200 (V)	FES8DT	FES16DT	FEP16DT	FEP30DM	FEP30DP	V_R = 200 (V)
V_R = 300 (V)	FES8FT	FES16FT	FEP16FT	FEP30FM	FEP30FP	V_R = 300 (V)
V_R = 400 (V)	FES8GT	FES16GT	FEP16GT	FEP30GM	FEP30GP	V_R = 400 (V)
V_R = 500 (V)	FES8HT	FES16HT	FEP16HT	FEP30HM	FEP30HP	V_R = 500 (V)
V_R = 600 (V)	FES8JT	FES16JT	FEP16JT	FEP30JM	FEP30JP	V_R = 600 (V)
SURGE (A)	125	200	200	300	300	SURGE (A)
V_F (V)	0.95/1.3	0.95/1.3	0.95/1.3	0.95/1.3	0.95/1.3	V_F (V)
Page	116	122	126	130		Page

GLASS PASSIVATED FAST EFFICIENT RECTIFIERS 1 TO 6 AMPERES

FE1A THRU FE1D

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

GENERAL INSTRUMENT

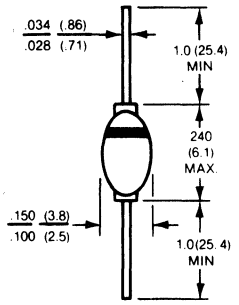
VOLTAGE RANGE
50 thru 200 Volts

CURRENT
1.0 Amperes

FEATURES

- Glass passivated junction
- Superfast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

DO-204AP



MECHANICAL DATA

Case: Unitized glass hermetically sealed
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end
Mounting Position: Any
Weight: 0.2 ounce, 0.6 gram

PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

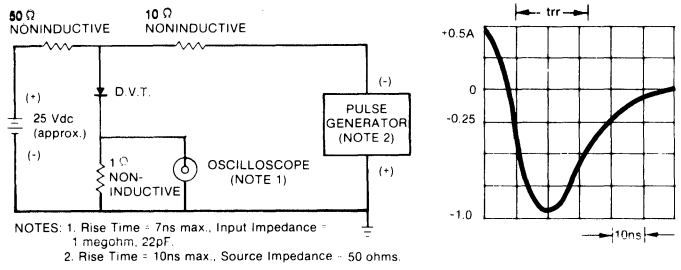
Ratings and 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%..

	FE1A	FE1B	FE1C	FE1D	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at T_A = 55°C	1.0				A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30.0				A
Maximum Instantaneous Forward Voltage at 1.0A	0.95				V
Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 150°C	2.0 50.0				μA
Maximum Reverse Recovery Time (Note 1)	35				ns
Typical Junction Capacitance (Note 2)	50				pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175				°C

NOTES:
1. Reverse Recovery Test Conditions: I_F = .5A, I_R = 1A, I_{rr} = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES FE1A THRU FE1D

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

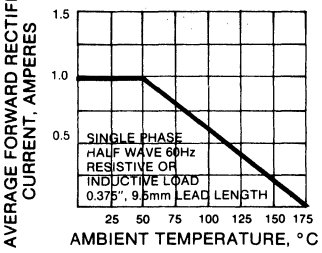


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

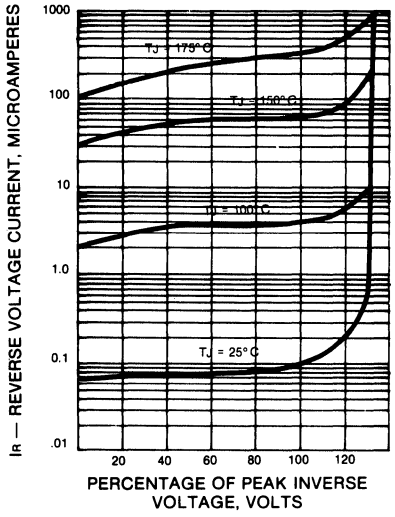


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

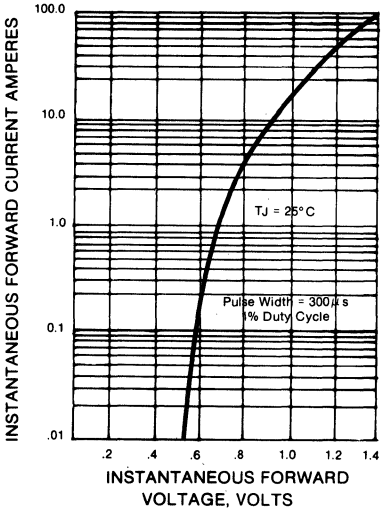


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

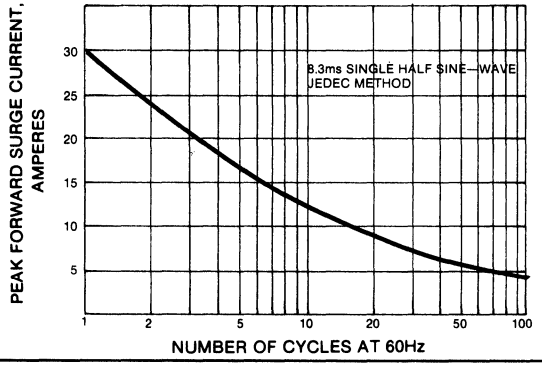
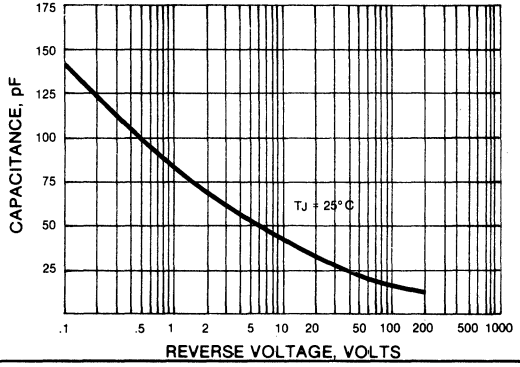


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



GI1001 thru GI1004

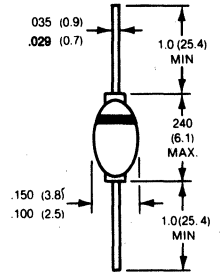
GLASS PASSIVATED FAST EPITAXIAL RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50, 100, 150, 200 Volts

CURRENT
1.0 Amperes

DO-204-AP



Dimensions in inches and (millimeters)

FEATURES

- Glass passivated junction
- Superfast recovery times—epitaxial construction
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts

MECHANICAL DATA

Case: Unitized glass hermetically sealed.
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end.
Mounting Position: Any
Weight: 0.02 ounce, 0.6 gram
Lead temperature for Soldering: 350°C, .375 from case for 10 seconds at 5lbs. tension

PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

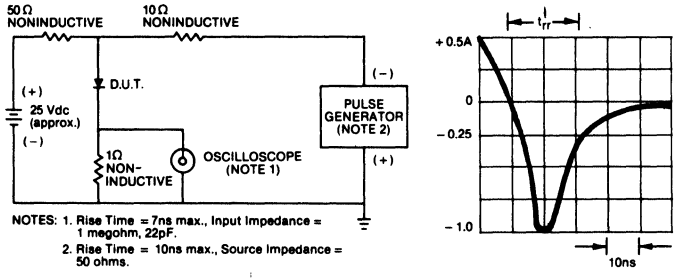
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%

	GI1001	GI1002	GI1003	GI1004	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at T_L = 75°C	1.0				A
Peak Forward Surge Current, IFM (surge) 8.3 ms single half sine-wave superimposed on rated load (JEDEC) method)	30.0				A
Maximum Forward Voltage at 1.0 ADC	.975				V
Maximum DC Reverse Current at Rated DC Blocking Voltage	2.0				μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_L = 100°C	50.0				μA
Maximum Reverse Recovery Time (Note 1)	25.0				ns
Typical Junction Capacitance (Note 2)	63.0				pF
Operating and Storage Temperature Range T_J	−65 to +175				°C

NOTES: 1—Reverse Recovery Test Conditions: I_F = .5A, I_R = .1A, I_{rr} = .25A
2—Measured at 1 MHz and applied reverse voltage of 4.0 volts.

FIG. 1—REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2—MAXIMUM AVERAGE FORWARD CURRENT RATING

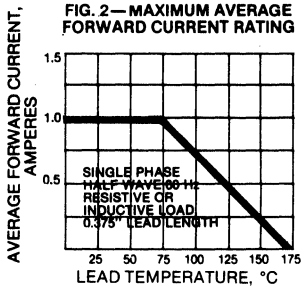


FIG. 3—TYPICAL REVERSE CHARACTERISTICS

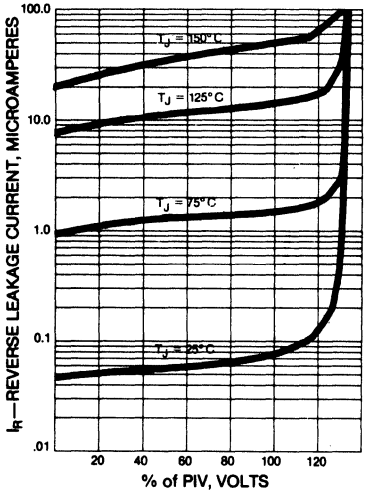


FIG. 5—TYPICAL FORWARD CHARACTERISTICS

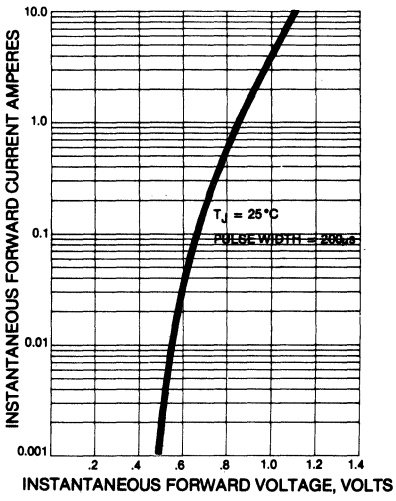


FIG. 4—MAXIMUM NON-REPETITIVE SURGE CURRENT

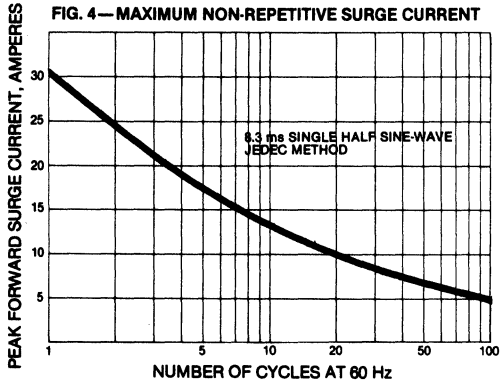
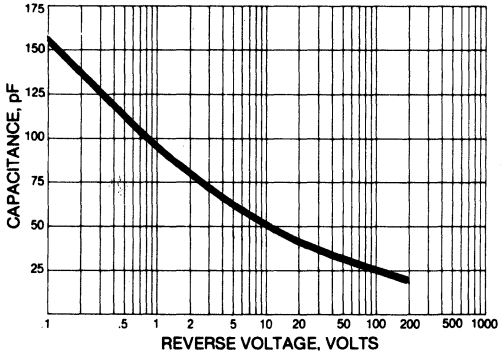


FIG. 6—TYPICAL JUNCTION CAPACITANCE



FE2A THRU FE2D

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 thru 200 Volts

CURRENT
2.0 Amperes

FEATURES

- Glass passivated junction
- Superfast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

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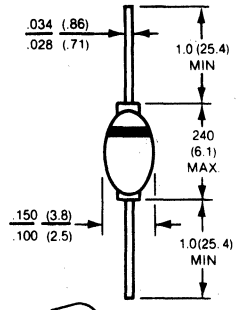


MECHANICAL DATA

Case: Unitized glass hermetically sealed
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight: 0.2 ounce, 0.6 gram

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	FE2A	FE2B	FE2C	FE2D	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current, .375" (9.5mm) Lead Length at T_A = 55°C	2.0				A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50.0				A
Maximum Instantaneous Forward Voltage at 2.0A	0.95				V
Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 150°C	2.0 50.0				μA
Maximum Reverse Recovery Time (Note 1)	35				ns
Typical Junction Capacitance (Note 2)	50				pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175				°C

NOTES:
1. Reverse Recovery Test Conditions: I_F = .5A, I_R = 1A, I_{rr} = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES FE2A THRU FE2D

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM

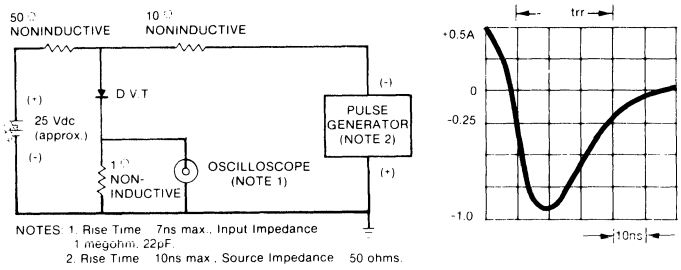


FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

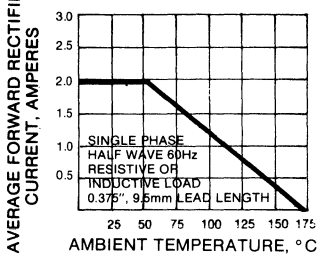


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

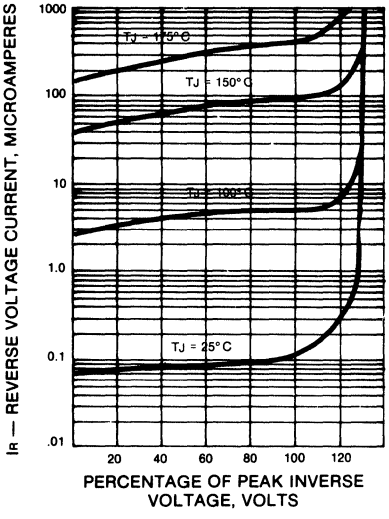


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

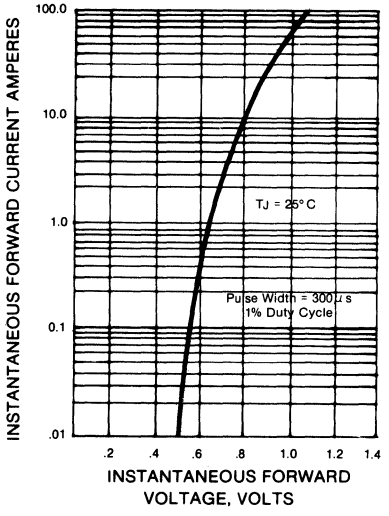


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

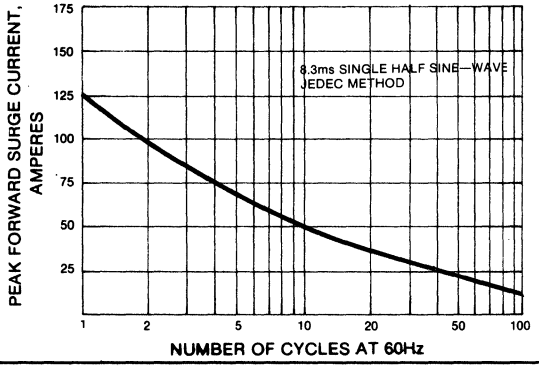
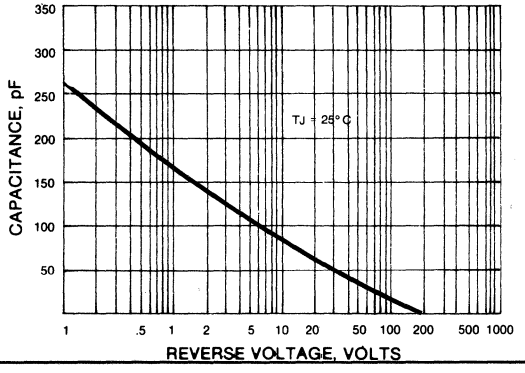


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



GI1101 thru GI1104

GLASS PASSIVATED FAST EFFICIENT RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 200 Volts

CURRENT
2.5 Amperes

FEATURES

- Glass passivated junction
- Superfast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- High temperature soldering guaranteed: [350°C, .375", 9.5 mm, from case for 10 seconds at 5 lbs., 2.3 KG tension]

MECHANICAL DATA

Case: Unitized glass hermetically sealed.
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end.
Mounting Position: Any
Weight: 0.02 ounce, 0.6 gram

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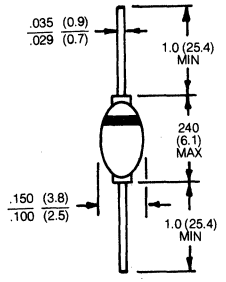


Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

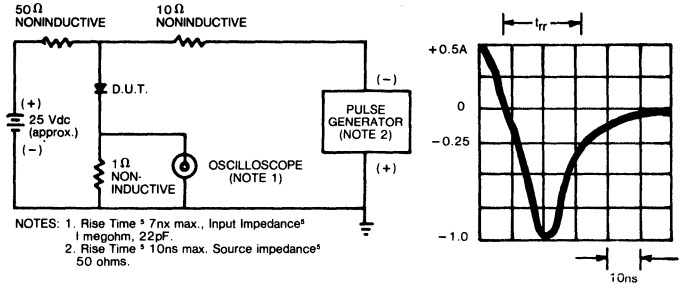
Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI1101	GI1102	GI1103	GI1104	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at $T_L = 75°C$	2.5			(Note 3) 2.0	A
Peak Forward Surge Current, IFM (surge) 8.3 ms single half sine-wave superimposed on rated load (JEDEC) method	50			20	A
Maximum Instantaneous Forward Voltage at 2.0 A	.975			(Note 4) 1.25	V
Maximum DC Reverse Current $T_J = 25°C$ at Rated DC Blocking Voltage $T_J = 100°C$	2.0 50			10 200	μA
Maximum Reverse Recovery Time (Note 1)	25			50	ns
Typical Junction Capacitance (Note 2)	50				pF
Operating and Storage Temperature Range T_J	−65 to +175			−65 to +150	°C

NOTES: 1-Reverse Recovery Test Conditions: $I_F = .5A$, $I_R = .1A$, $I_{rr} = .25A$
2-Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3-$T_L = 50°C$ .375" (9.5mm) Lead length
4-$I_{FM} = 1.0ADC$

RATING AND CHARACTERISTIC CURVES GI1101 THRU GI1104

FIG.1—REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time ≤ 7nx max., Input Impedance≥ 1 megohm, 22pF.
2. Rise Time ≤ 10ns max. Source impedance≤ 50 ohms.

FIG.2—MAXIMUM AVERAGE FORWARD CURRENT RATING

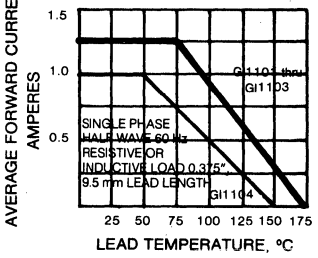


FIG.3—TYPICAL REVERSE CHARACTERISTICS

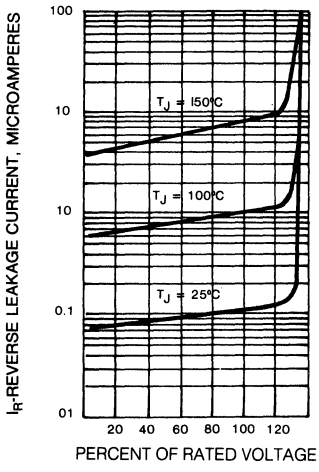


FIG.5—TYPICAL FORWARD CHARACTERISTICS

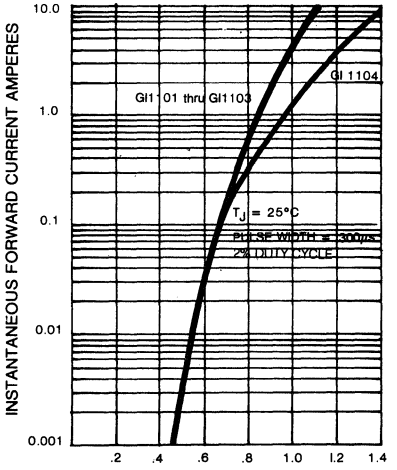


FIG.4—MAXIMUM NON-REPETITIVE SURGE CURRENT

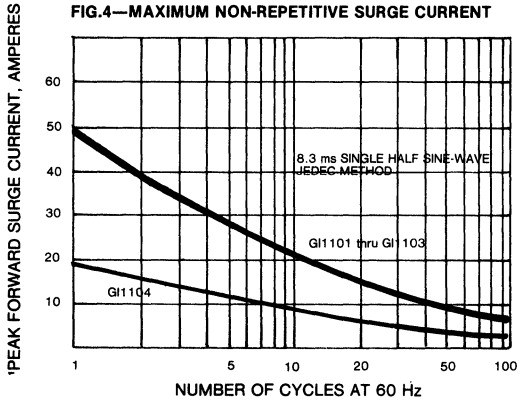
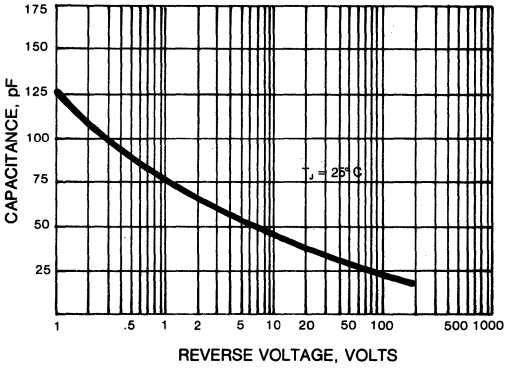


FIG.6—TYPICAL JUNCTION CAPACITANCE



SGI5001 THRU SGI5004

GLASS PASSIVATED FAST EFFICIENT RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50, 100, 150, 200 Volts

CURRENT
2.0 Ampere

FEATURES

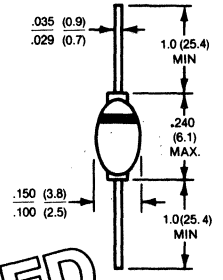
- Glass passivated junction
- Very fast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts

MECHANICAL DATA

Case: Unitized glass hermetically sealed.
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end.
Mounting Position: Any
Weight: 0.02 ounce, 0.6 gram
Lead Temperature for Soldering: 350°C, .375 from case for 10 seconds at 5lbs. tension

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1975 and glass composition by Patent No. 3,752,701 of 1973

DO-204-AP



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

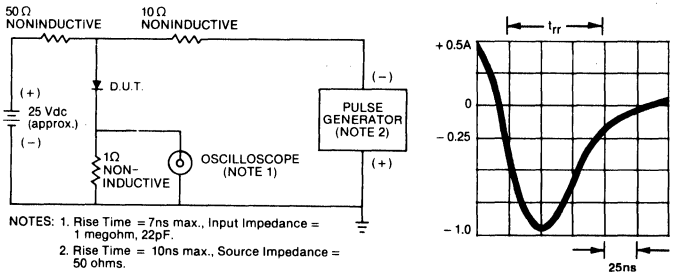
Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SGI5001	SGI5002	SGI5003	SGI5004	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at T_L = 75°C	2.0				A
Peak Forward Surge Current, IFM (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	35.0				A
Maximum Forward Voltage at 1.0ADC T_J = 25°C T_J = 100°C	0.975 0.895				V
Maximum DC Reverse Current at Rated DC Blocking Voltage	2.0				μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J = 100°C	50.0				μA
Maximum Reverse Recovery Time (Note 1)	100.0				ns
Operating and Storage Temperature Range, T_J	-65 to +175				°C

NOTES:
1. Reverse Recovery Test Conditions: I_F = .5A, I_R = 1A, Irr = .25A

RATING AND CHARACTERIC CURVES
SGI5001 THRU SGI5004 SERIES

FIG. 1—REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2—MAXIMUM AVERAGE FORWARD CURRENT RATING

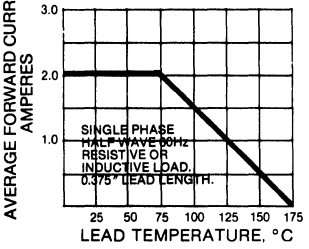


FIG. 3—TYPICAL REVERSE CHARACTERISTICS

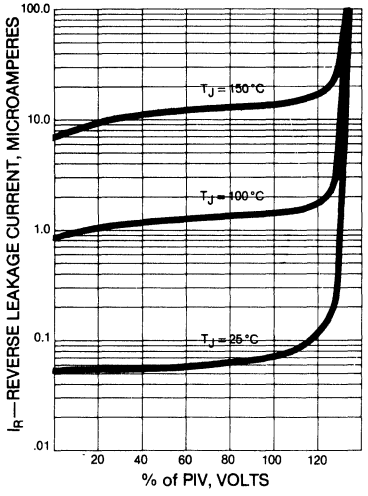


FIG. 5—TYPICAL FORWARD CHARACTERISTICS

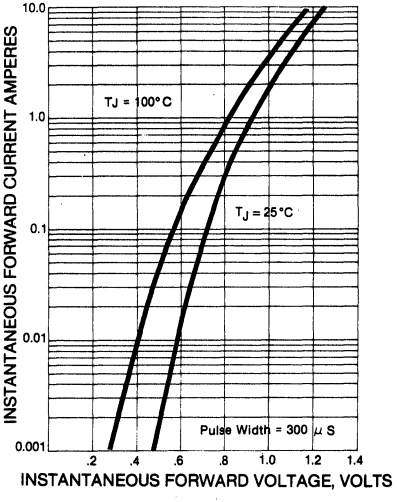


FIG. 4—MAXIMUM NON-REPETITIVE SURGE CURRENT

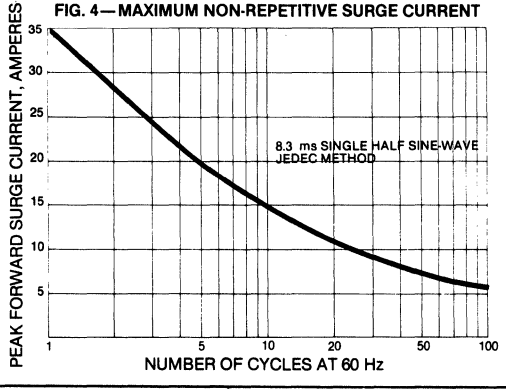
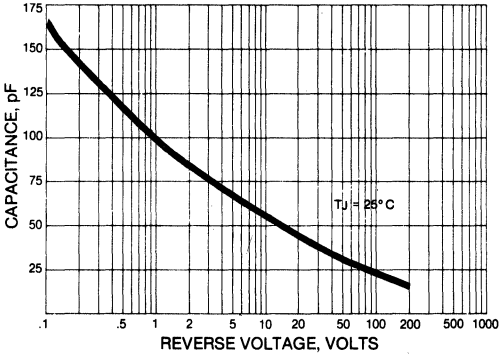


FIG. 6—TYPICAL JUNCTION CAPACITANCE



FE3A THRU FE3D

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

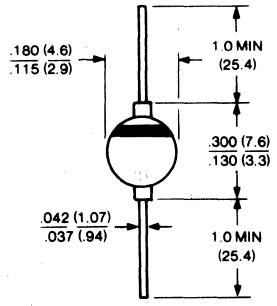
GENERAL INSTRUMENT

VOLTAGE RANGE
50 thru 200 Volts

CURRENT
3.0 Amperes

FEATURES

- Glass passivated junction
- Superfast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contracts
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension



MECHANICAL DATA

Case: Unitized glass hermetically sealed.
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end
Mounting Position: Any
Weight: 0.37 ounce, 1.04 grams

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

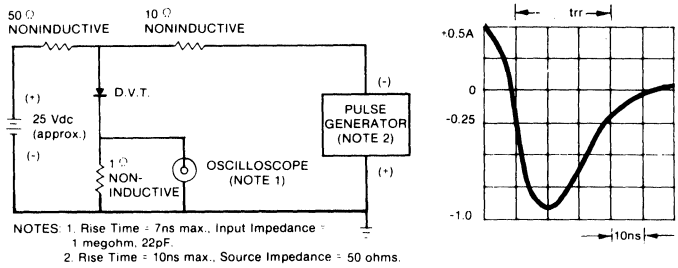
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	FE3A	FE3B	FE3C	FE3D	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at T_A = 55°C	3.0				A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125.0				A
Maximum Instantaneous Forward Voltage at 3.0A	0.95				V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 150°C	5.0 50.0				μA
Maximum Reverse Recovery Time (Note 1)	35				ns
Typical Junction Capacitance (Note 2)	100				pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175				°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES FE3A THRU FE3D

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

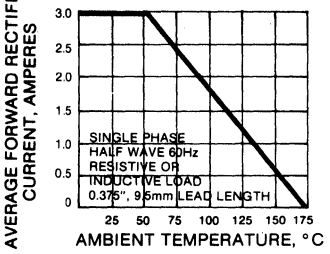


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

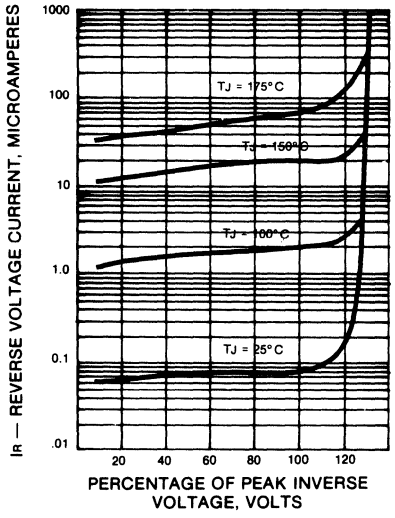


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

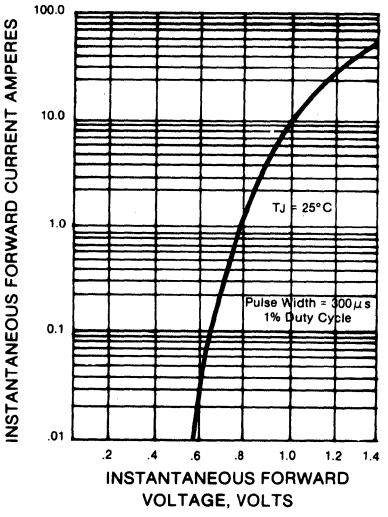


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

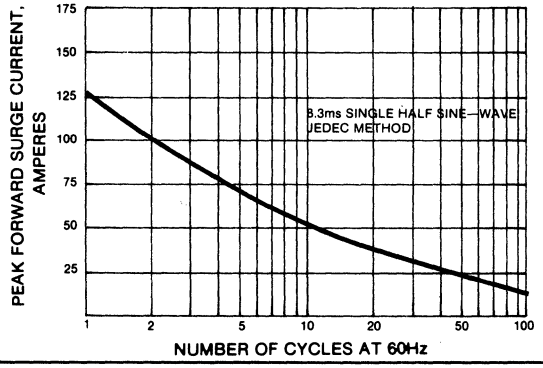
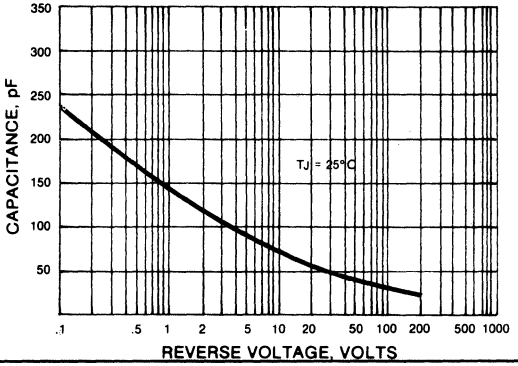


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



FE5A THRU FE5D

GLASS PASSIVATED FAST-EFFICIENT RECTIFIER

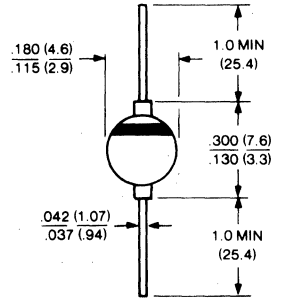
GENERAL INSTRUMENT

VOLTAGE RANGE
50 thru 200 Volts

CURRENT
5.0 Amperes

FEATURES

- Glass passivated junction
- Superfast recovery times—epitaxial construction
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension



MECHANICAL DATA

Case: Unitized glass hermetically sealed
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end
Mounting Position: Any
Weight: 0.37 ounce, 1.04 grams

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

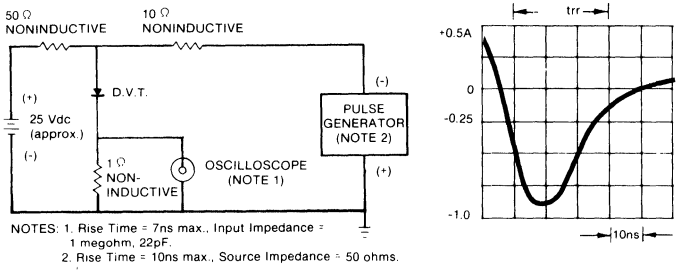
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	FE5A	FE5B	FE5C	FE5D	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current .375", (9.5mm) Lead Length at T_L = 55°C	5.0				A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	135.0				A
Maximum Instantaneous Forward Voltage at 5.0A	0.95				V
Maximum DC Reverse Current T_A = 25°C	5.0				
at Rated DC Blocking Voltage T_A = 150°C	50.0				μA
Maximum Reverse Recovery Time (Note 1)	35				ns
Typical Junction Capacitance (Note 2)	100				pF
Operating and Storage Temprature Range T_J, T_{STG}	-65 to +175				°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES FE5A THRU FE5D

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

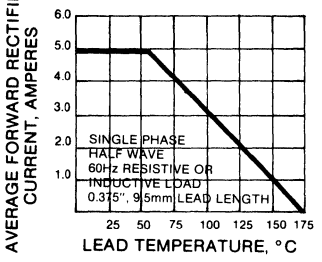


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

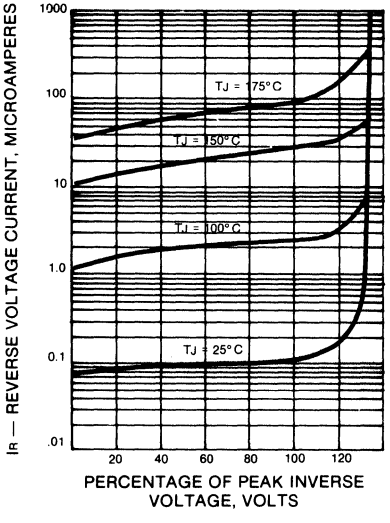


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

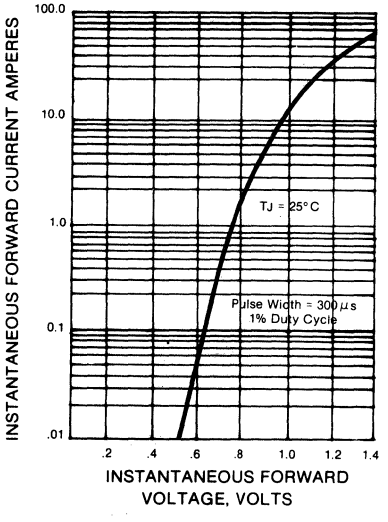


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

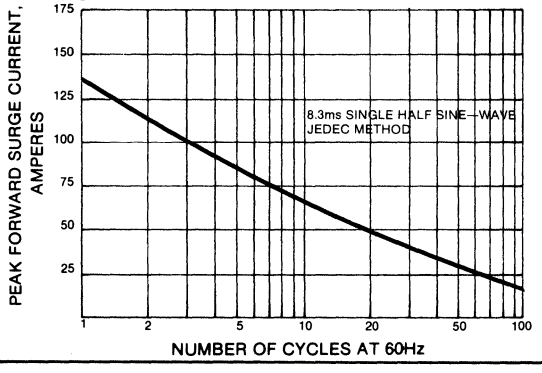
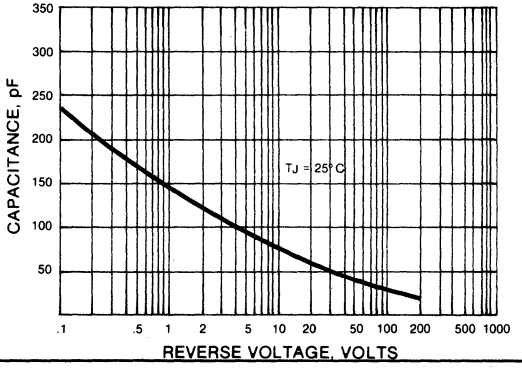


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



SGI5301 THRU SGI5304

GLASS PASSIVATED FAST EFFICIENT RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50, 100, 150, 200 Volts

CURRENT
5.0 Amperes

FEATURES

- Glass passivated junction
- Very fast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts

MECHANICAL DATA

Case: Unitized glass hermetically sealed.
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end.
Mounting Position: Any
Weight: 0.037 ounce, 1.04 grams
Lead Temperature for Soldering: 350°C, .375 from case for 10 seconds at 5lbs. tension

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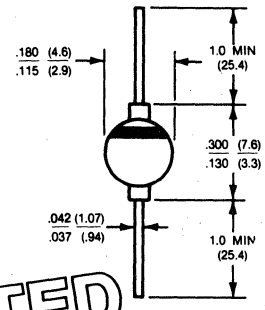


PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

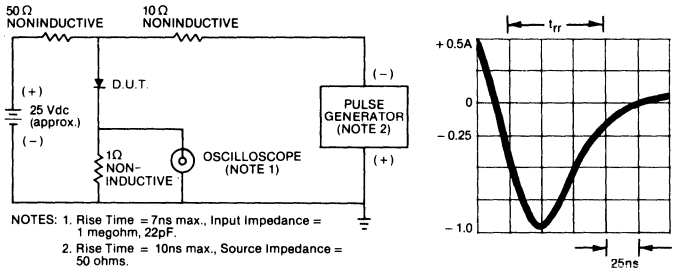
Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SGI5301	SGI5302	SGI5303	SGI5304	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at T_L = 75°C	5.0				A
Peak Forward Surge Current, IFM (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	110.0				A
Maximum Forward Voltage at 5.0ADC T_J = 25°C T_J = 100°C	0.975 0.895				V
Maximum DC Reverse Current at Rated DC Blocking Voltage	5.0				μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J = 100°C	150.0				μA
Maximum Reverse Recovery Time (Note 1)	100.0				ns
Operating and Storage Temperature Range	-65 to +175				°C

NOTES:
1. Reverse Recovery Test Conditions: I_F = .5A, I_R = 1A, I_{rr} = .25A

* RATING AND CHARACTERISTIC CURVES
SGI5301 thur SGI5304

FIG. 1—REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2—MAXIMUM AVERAGE FORWARD CURRENT RATING

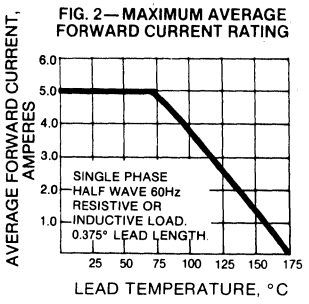


FIG. 3—TYPICAL REVERSE CHARACTERISTICS

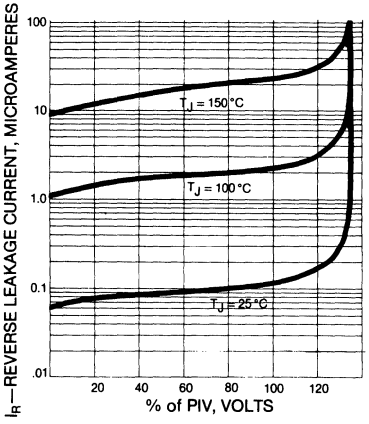


FIG. 5—TYPICAL FORWARD CHARACTERISTICS

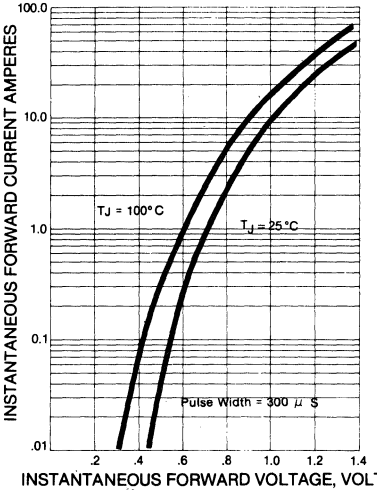


FIG. 4—MAXIMUM NON-REPETITIVE SURGE CURRENT

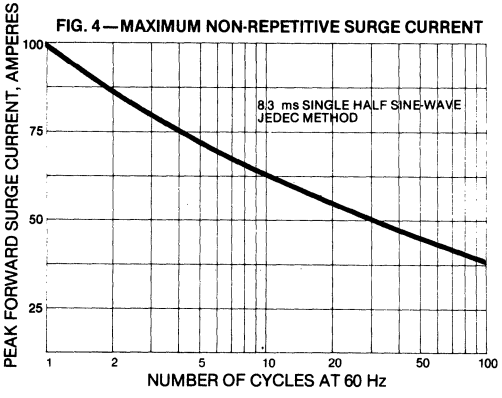
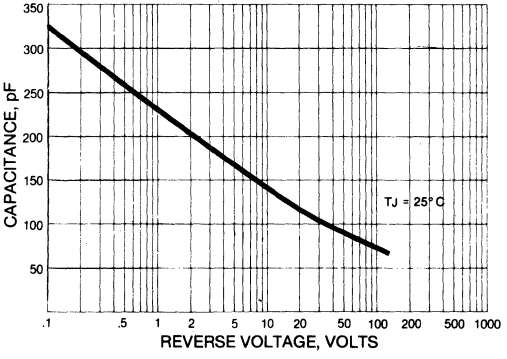


FIG. 6—TYPICAL JUNCTION CAPACITANCE



FE6A THRU FE6D

GLASS PASSIVATED FAST-EFFICIENT RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 thru 200 Volts

CURRENT
6.0 Amperes

FEATURES

- Glass passivated junction
- Superfast recovery times—epitaxial construction
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Unitized glass hermetically sealed
Terminals: Axial leads to solderable to MIL-STD-202 Method 208
Polarity: Colorband denotes cathode end
Mounting Position: Any
Weight: 0.37 ounce, 1.04 grams

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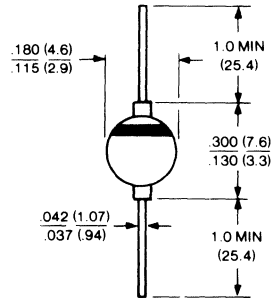


PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

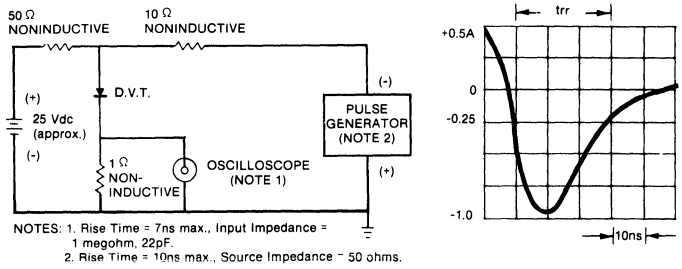
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	FE6A	FE6B	FE6C	FE6D	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current .375", (9.5mm) Lead Length at T_L = 55°C	6.0				A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	150.0				A
Maximum Instantaneous Forward Voltage at 6.0A	0.975				V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 150°C	5.0 50.0				A μA
Maximum Reverse Recovery Time (Note 1)	35				ns
Typical Junction Capacitance (Note 2)	100				pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175				°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES FE6A THRU FE6D

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

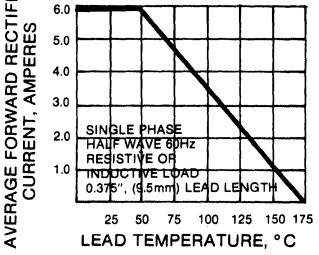


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

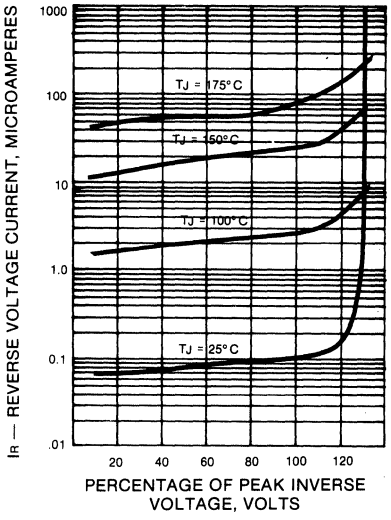


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

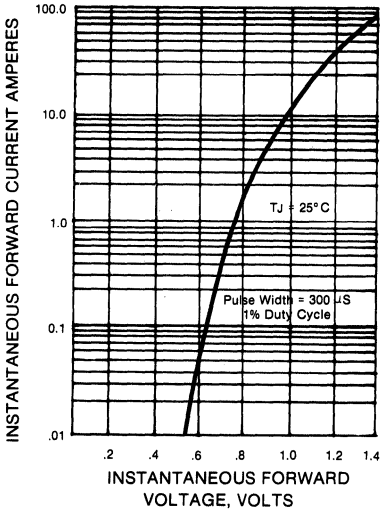


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

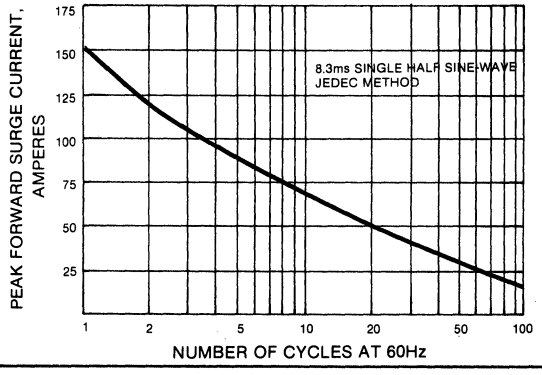
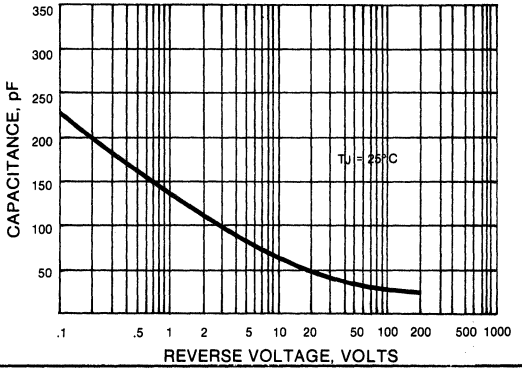


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



GI1301 thru GI1304

GLASS PASSIVATED FAST EFFICIENT RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 200 Volts

CURRENT
6.0 Amperes

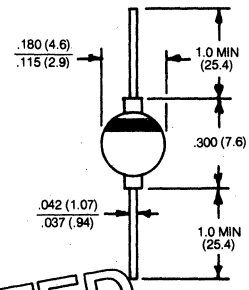
FEATURES

- Glass passivated junction
- Superfast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- High temperature soldering guaranteed: 350°C, .375", (9.5 mm), from case for 10 seconds at 5 lbs., (2.3 kg) tension

MECHANICAL DATA

Case: Unitized glass hermetically sealed.
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end.
Mounting Position: Any
Weight: 0.37 ounce, 10.4 grams

G-4



PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

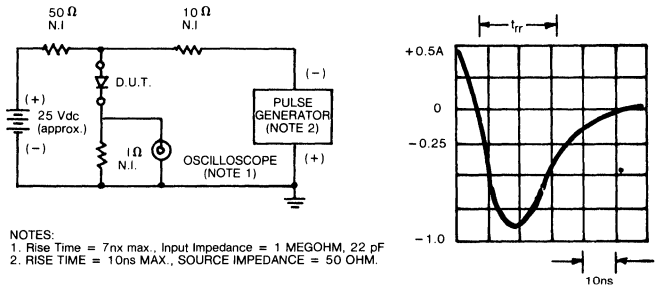
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI1301	GI1302	GI1303	GI1304	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at T_L = 75°C	6.0			(Note 3) 5.0	A
Peak Forward Surge Current, IFM (surge) 8.3ms single half sine-wave superimposed on rated load (JEDEC) method	150			70	A
Maximum Instantaneous Forward Voltage at 6.0 A	0.925			(Note 4) 1.25	V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 100°C	50 150			20 500	μA
Maximum Reverse Recovery Time (Note 1)	30			50	ns
Typical Junction Capacitance (Note 2)	95				pF
Operating and Storage Temperature Range T_J	−65 to +175			−65 to +150	°C

NOTES: 1-Reverse Recovery Test Conditions: I_F = .5A, I_R = 1A, I_{rr} = .25A
2-Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3-T_L = 50°C .375" (9.5mm) Lead length
4-I_{FM} = 3.0ADC

FIG.1—REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES:
1. Rise Time = 7nx max., Input Impedance = 1 MEGOHM, 22 pF
2. RISE TIME = 10ns MAX., SOURCE IMPEDANCE = 50 OHM.

FIG.2—MAXIMUM AVERAGE FORWARD CURRENT RATING

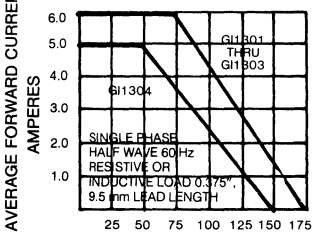


FIG.3—TYPICAL REVERSE CHARACTERISTICS

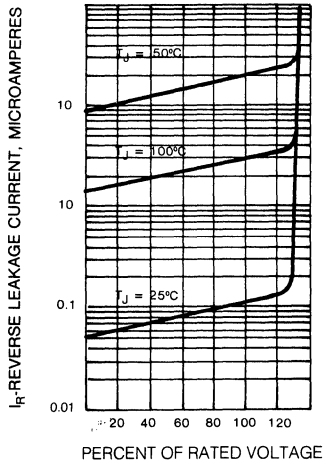


FIG.5—TYPICAL FORWARD CHARACTERISTICS

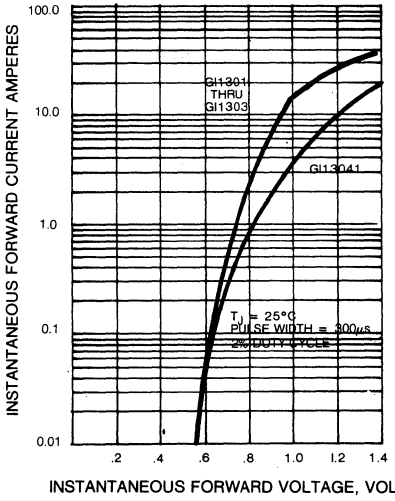


FIG.4—MAXIMUM NON-REPETITIVE SURGE CURRENT

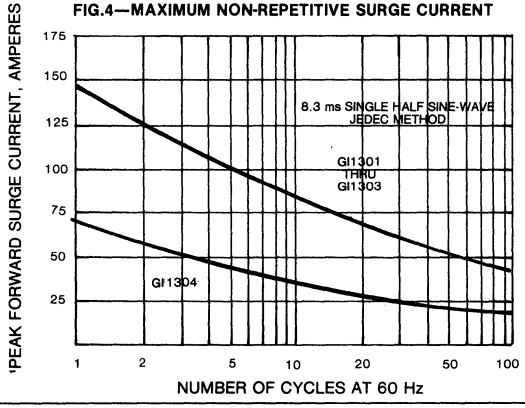
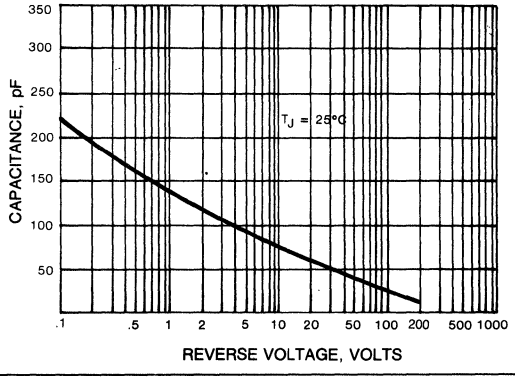


FIG.6—TYPICAL JUNCTION CAPACITANCE



GLASS PASSIVATED PLASTIC FAST EFFICIENT RECTIFIERS 1 TO 5 AMPERES

EGP10A THRU EGP10G

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 thru 400 Volts

CURRENT
1.0 Amperes

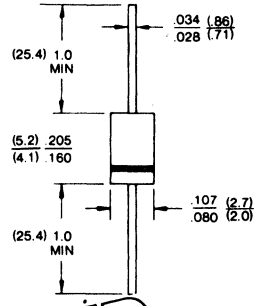
FEATURES

- Glass passivated junction
- Superfast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end
Mounting Position: Any
Weight: 0.015 ounce, 0.4 gram

DO41



PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

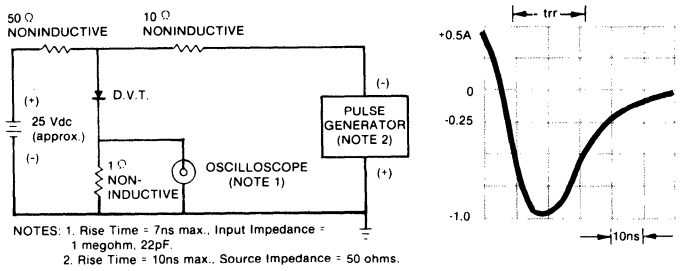
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	EGP10A	EGP10B	EGP10C	EGP10D	EGP10F	EGP10G	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	V
Maximum RMS Voltage	35	70	105	140	210	280	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	V
Maximum Average Forward Current .375", (9.5mm) Lead Length at T_A = 55°C	1.0						A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30.0						A
Maximum Instantaneous Forward Voltage at 1.0A	0.95				1.25		V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 150°C	5.0 50.0						μA
Maximum Reverse Recovery Time (Note 1)	50.0						ns
Typical Junction Capacitance (Note 2)	20						pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +150						°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES EGP10A THRU EGP10G

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

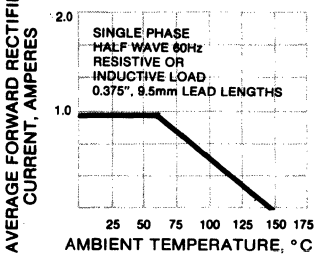


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

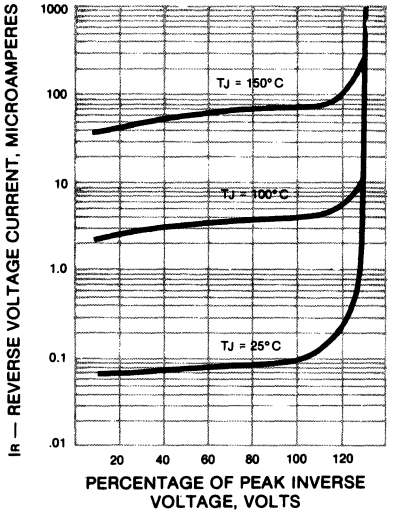


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

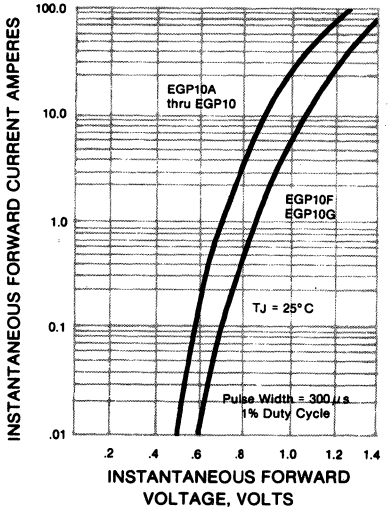


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

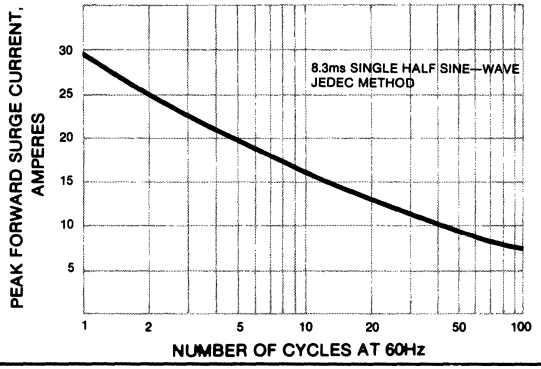
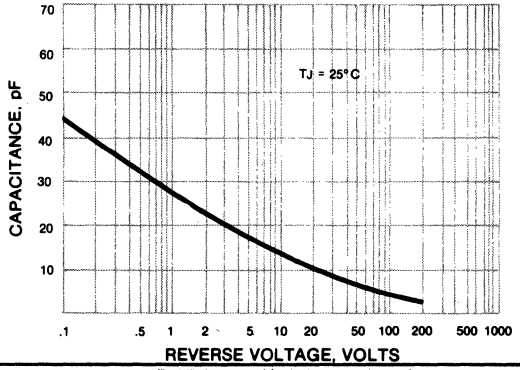


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



EGP20A THRU EGP20G

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

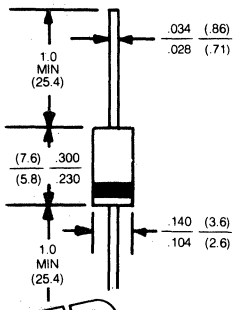
VOLTAGE RANGE
50 thru 400 Volts

CURRENT
2.0 Amperes

FEATURES

- Glass passivated junction
- Superfast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.2kg) tension

DO15



MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads osIderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end
Mounting Position: Any
Weight: 0.015 ounce, 0.4 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976, brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

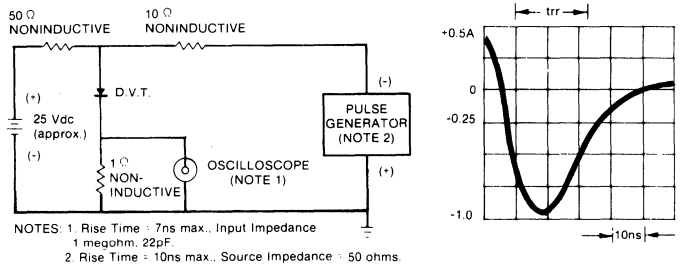
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	EGP20A	EGP20B	EGP20C	EGP20D	EGP20F	EGP20G	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	V
Maximum RMS Voltage	35	70	105	140	210	280	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	V
Maximum Average Forward Current .375", (9.5mm) Lead Length at T_A = 55°C	2.0						A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	75.0						A
Maximum Instantaneous Forward Voltage at 2.0A	.95				1.25		V
Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 150°C	5.0 50.0						μA
Maximum Reverse Recovery Time (Note 1)	50.0						ns
Typical Junction Capacitance (Note 2)	50						pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +150						°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES EGP20A THRU EGP20G

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

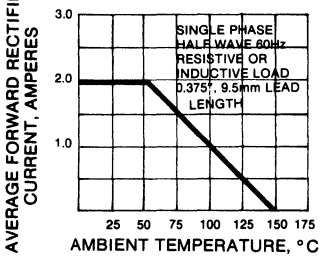


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

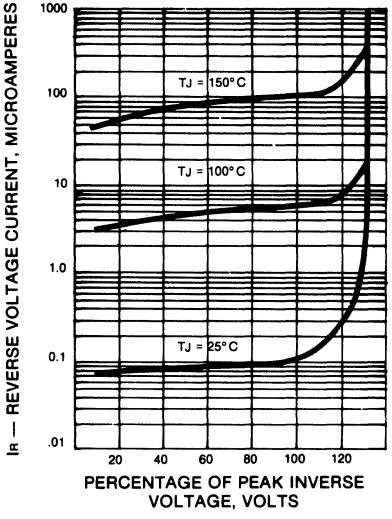


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

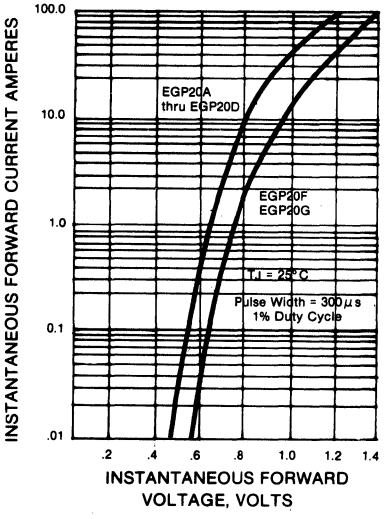


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

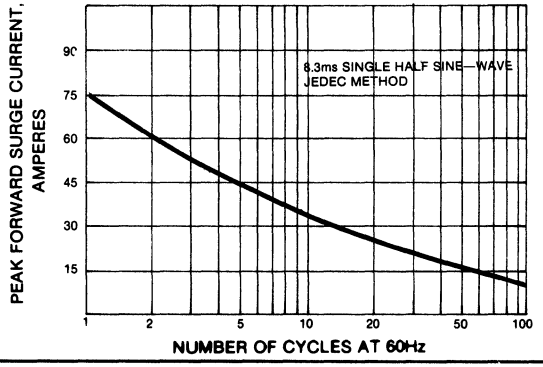
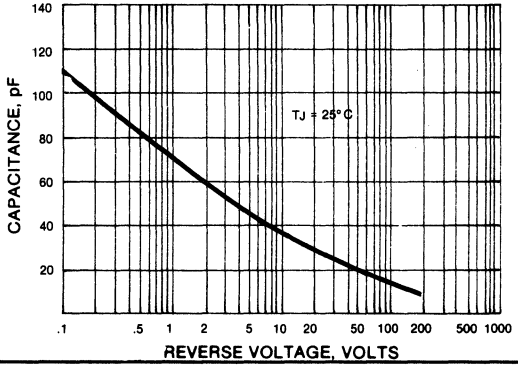


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



EGP30A THRU EGP30G

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

SUPERECTIFIER

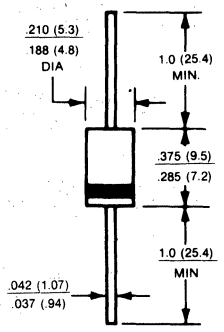
GENERAL INSTRUMENT

VOLTAGE RANGE
50 thru 400 Volts

CURRENT
3.0 Amperes

FEATURES

- Glass passivated junction
- Superfast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension



MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end
Mounting Position: Any
Weight: 0.04 ounce, 1.12 grams

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

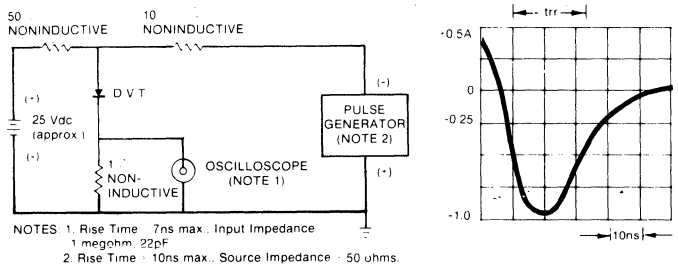
Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	EGP30A	EGP30B	EGP30C	EGP30D	EGP30F	**EGP30G**	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	V
Maximum RMS Voltage	35	70	105	140	210	280	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at T_A = 55°C	3.0						A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125.0						A
Maximum Instantaneous Forward Voltage at 3.0A	.95				1.25		V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 150°C	5.0 50.0						μA
Maximum Reverse Recovery Time (Note 1)	50.0						ns
Typical Junction Capacitance (Note 2)	100						pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +150						°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES EGP30A THRU EGP30G

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

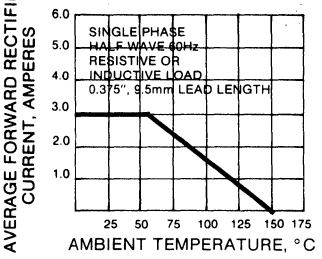


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

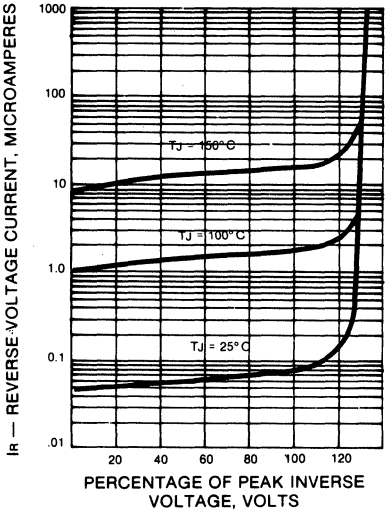


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

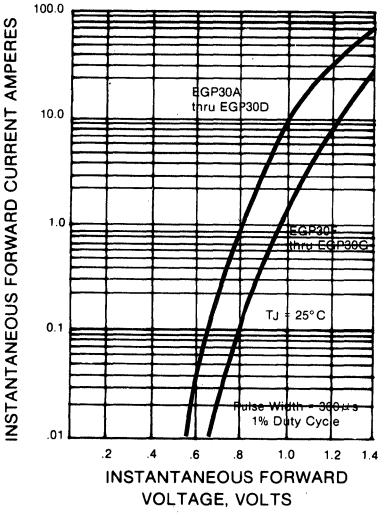


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

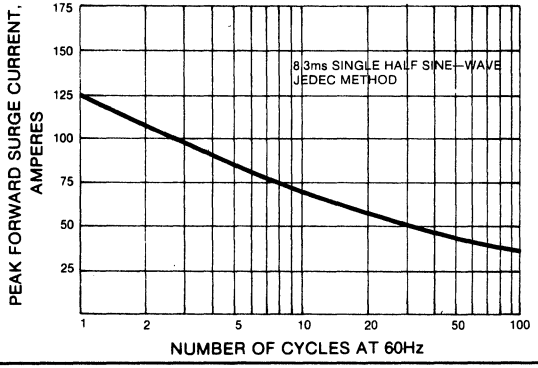
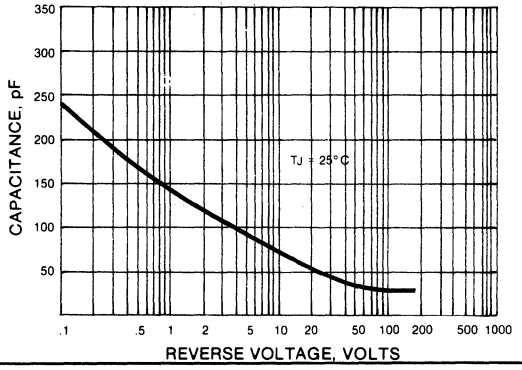


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



EGP50A THRU EGP50G

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

SUPERECTIFIER

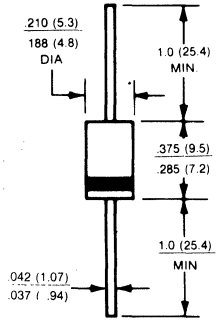
GENERAL INSTRUMENT

VOLTAGE RANGE
50 thru 400 Volts

CURRENT
5.0 Amperes

FEATURES

- Glass passivated junction
- Superfast recovery times
- Low forward voltage, high current capability
- Exceeds environmental standards of MIL-STD-19500
- Low leakage
- High surge capability
- High temperature metallurgically bonded, no compression contacts
- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension



MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads solderable to MIL-STD-202, Method 208
Polarity: Colorband denotes cathode end
Mounting Position: Any
Weight: 0.04 ounce, 1.12 grams

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

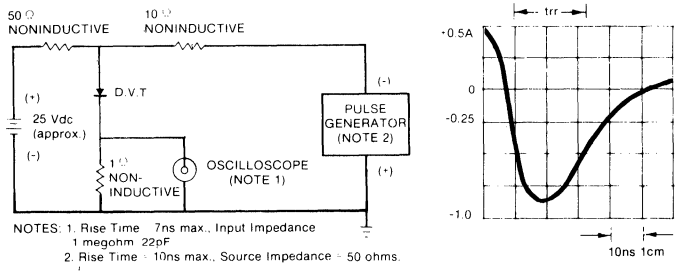
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	EGP50A	EGP50B	EGP50C	EGP50D	EGP50F	EGP50G	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	V
Maximum RMS Voltage	35	70	105	140	210	280	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at T_L = 55°C	5.0						A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	150.0						A
Maximum Instantaneous Forward Voltage at 5.0A	.95				1.25		V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 150°C	5.0 50.0						μA
Maximum Reverse Recovery Time (Note 1)	50.0						ns
Typical Junction Capacitance (Note 2)	100						pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +150						°C

NOTES:
1. Reverse Recovery Test Conditions: I_F = .5A, i_R = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES EGP50A THRU EGP50G

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm 22pF
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

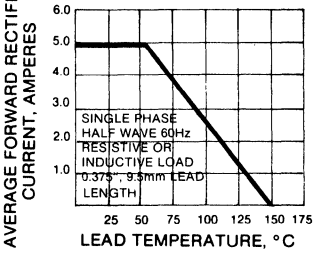


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

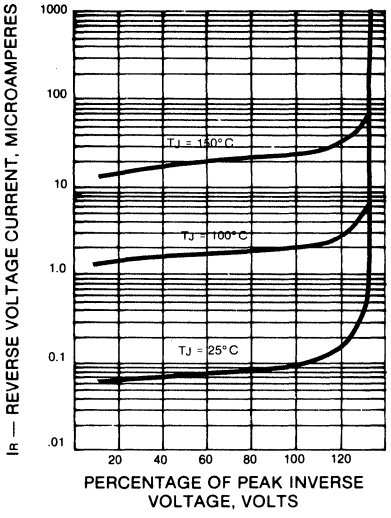


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

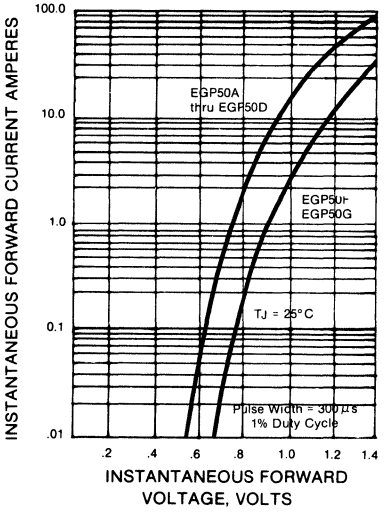


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

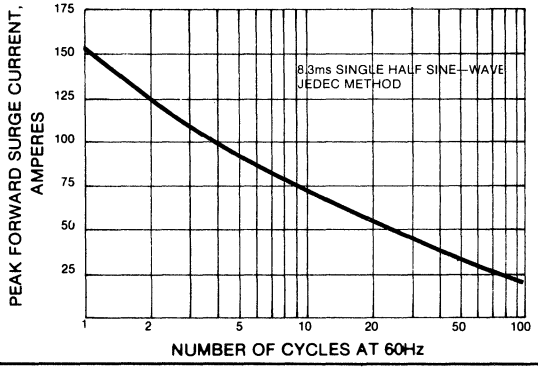
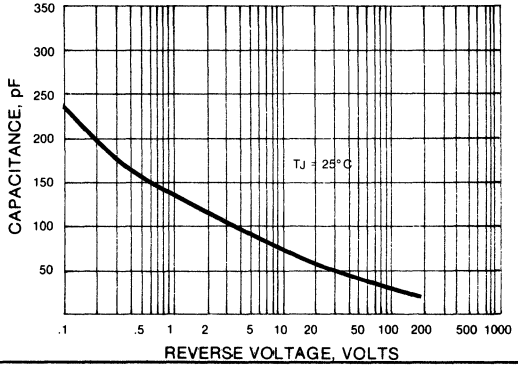


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



PLASTIC
FAST EFFICIENT RECTIFIERS
1 TO 3 AMPERES

UF4001 THRU UF4007

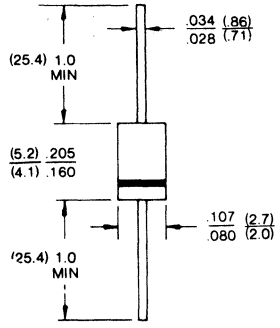
ULTRAFAST MINIATURE PLASTIC SILICON RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 PRV

CURRENT
1.0 Ampere

DO-41



All dimensions in inches and (millimeters)

FEATURES
- Low Cost
- Ultrafast Recovery Times
- Low Forward Voltage
- Low Leakage
- High Surge Capability
- Plastic Package has U/L Flammability Classification 94V-0.

MECHANICAL DATA:
Case: JEDEC DO-41, Molded Plastic
Terminals: Axial Leads Solderable Per MIL-STD-202, Method 208
Polarity: Color band denotes Cathode End
Mounting Position: Any
Weight: 0.012 ounce, 0.3 gram

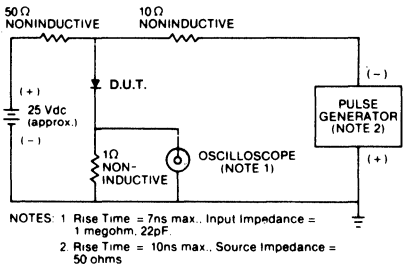
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capactivie load, derate current by 20%.

	UF4001	UF4002	UF4003	UF4004	UF4005	UF4006	UF4007	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Current .375" (9.5mm) Lead Length at T_A = 55°C	1.0							A
Peak Forward Surge Current, I_{FM} (Surge); 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30.0							A
Maximum Instantaneous Forward Voltage at 1.0 Adc	1.0				1.4			V
Maximum DC Reverse Current at Rated DC Blocking Voltage	10.0							μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 100°C	150.0							μA
Maximum Reverse Recovery Time (Note 1)	50.0							ns
Typical Junction Capacitance (Note 2)	35.0							pF
Operating and Storage Temperature Range T_J	-65 to +150							°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



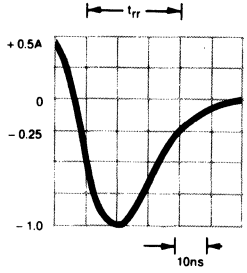


FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

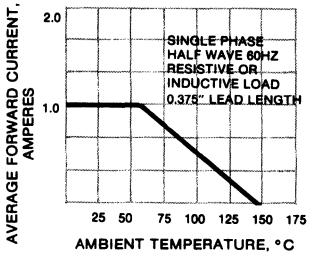


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

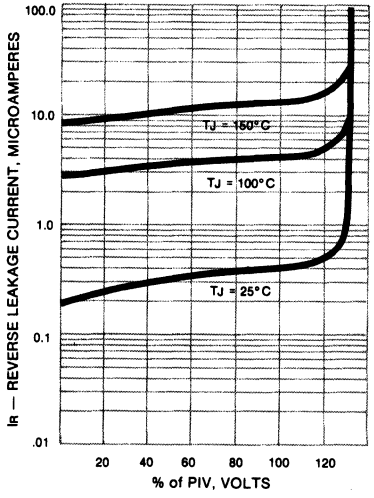


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

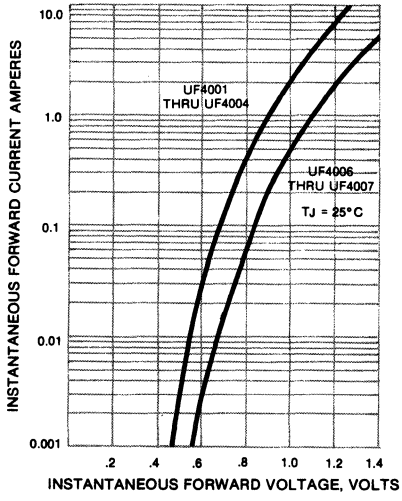


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

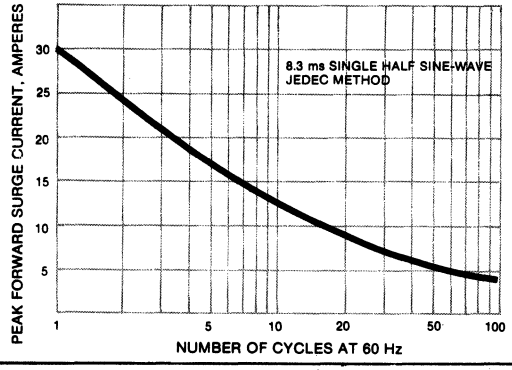
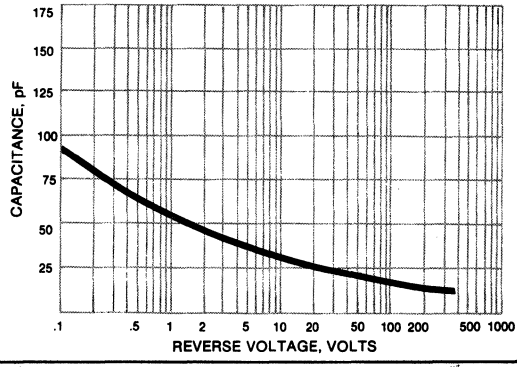


FIG. 6 — TYPICAL JUNCTION CAPACITANCE



UF5400 THRU UF5406

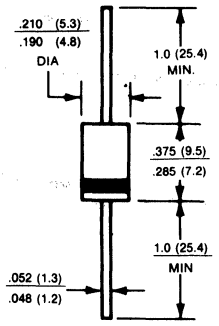
ULTRAFAST PLASTIC SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 600 PRV

CURRENT
3.0 Amperes

DO-201AD



Dimensions in inches and (millimeters)

FEATURES
- Low Cost
- Ultrafast Recovery Times
- Low Forward Voltage,
- Low Leakage
- High Surge Capability
- Plastic Package has U/L Flammability Classification 94V-0

MECHANICAL DATA
Case: JEDEC DO-201AD Molded Plastic
Terminals: Axial Leads Solderable to MIL-STD-202, Method 208
Polarity: Color Band denotes Cathode End
Mounting Position: Any
Weight: 0.04 Ounce, 1.1 Grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	UF5400	UF5401	UF5402	UF5403	UF5404	UF5405	UF5406	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	300	400	500	600	V
Maximum RMS Voltage	35	70	140	210	280	350	425	V
Maximum DC Blocking Voltage	50	100	200	300	400	500	600	V
Maximum Average Forward Current .375", (9.5mm) Lead Length at T_A = 55°C	3.0							A
Peak Forward Surge Current, I_{FM} (Surge); 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	150.0							A
Maximum Forward Voltage at 3.0 Adc	1.0						1.1	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	10.0							μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 100°C	200							μA
Maximum Reverse Recovery Time (Note 1)	50.0							ns
Typical Junction Capacitance (Note 2)	80.0							pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +150							°C

NOTES:
1. Reverse Recovery Test Conditions: I_F = .5A, I_R = .25A.
2. Measure at 1 MHz and applied reverse voltage of 4.0 volts.

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

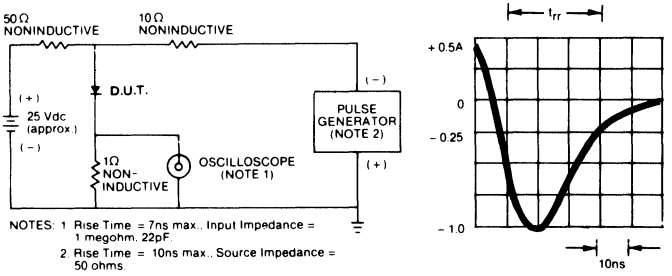


FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING

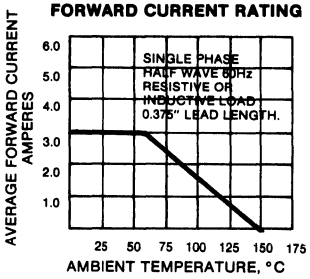


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

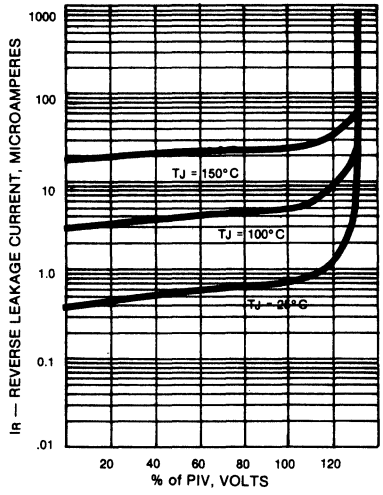


FIG. 5 — TYPICAL FORWARD CHARACTERISTICS

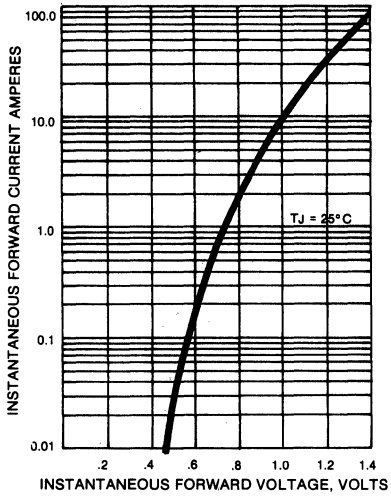


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

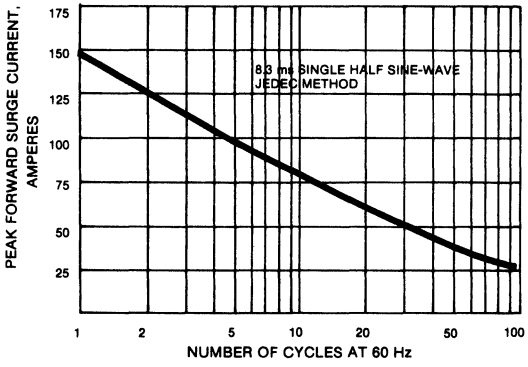
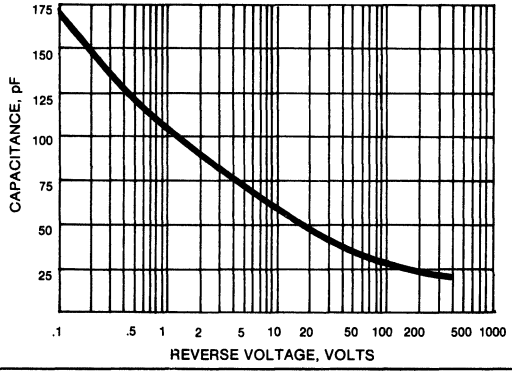


FIG. 6 — TYPICAL JUNCTION CAPACITANCE

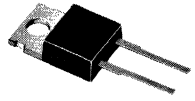


HIGH CURRENT FAST EFFICIENT RECTIFIERS 8 TO 30 AMPERES

FES8-T SERIES

FAST EFFICIENT GLASS PASSIVATED RECTIFIERS

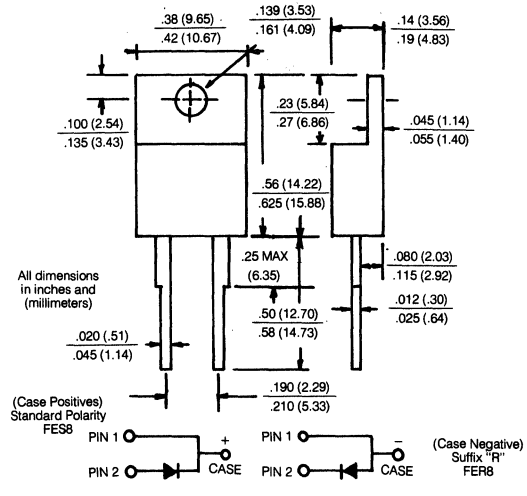
GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 600 Volts

CURRENT
8.0 Amperes

TO-220



FEATURES

- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500.
- Glass Passivated Junction
- Low power loss, high efficiency
- Low forward voltage, high current capability
- High surge capacity
- Super fast recovery times, high voltage
- High temperature soldering guaranteed: 300°C, .25", (6.35 mm) from case for 10 seconds.

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD 202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25# ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	FES8AT	FES8BT	FES8CT	FES8DT	FES8FT	FES8GT	FES8HT	FES8JT	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current at Tc = 100°C	8.0								A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	125								A
Maximum Instantaneous Forward Voltage at 8.0A	0.95				1.3				V
Maximum DC Reverse Current at DC Blocking Voltage Tc = 25°C Tc = 100°C	10 500								μA μA
Typical Junction Capacitance (Note 1)	65								pF
Maximum Reverse Recovery Time (Note 2)	35								ns
Typical Thermal Resistance ROJC (Note 3)	3.0								°C/W
Storage and Operating Temperature Range Tc	−65 to +150								°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, 1R = 1A, Irr = .25A.
3. Thermal Resistance Junction to CASE.

RATING CHARACTERISTIC CURVES
FES8AT THRU FES8JT

FIG. 1 — FORWARD CURRENT DERATING CURVE

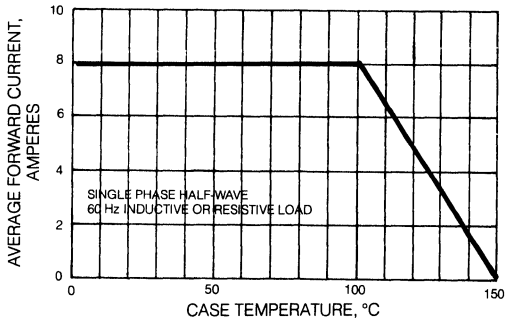


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

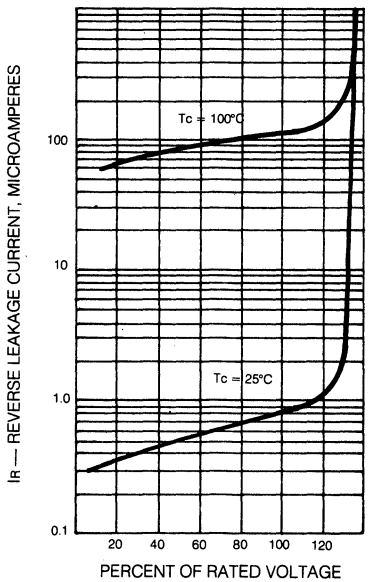


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

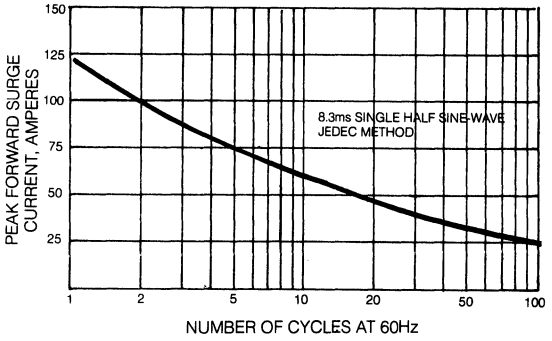


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

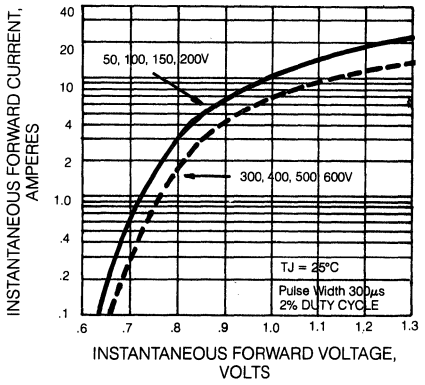
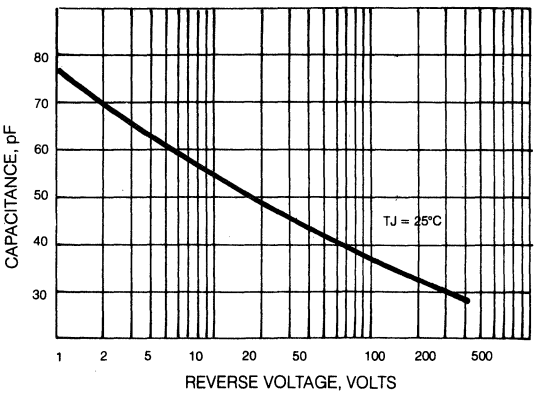


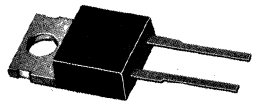
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



GI1401 THRU GI1404

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

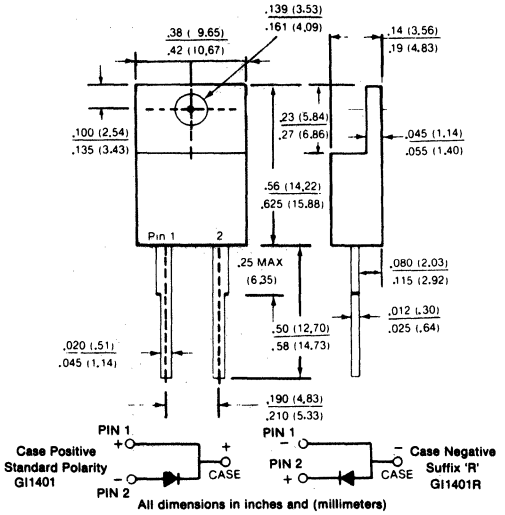
GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 200 Volts

CURRENT
8.0 Amperes

TO-220



All dimensions in inches and (millimeters)

FEATURES
- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-202
- Low power loss, high efficiency
- Low forward voltage, high current capability
- High surge capacity
- Super fast recovery times, high voltage

MECHANICAL DATA
Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

	GI1401	GI1402	GI1403	GI1404	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Rectified Current at T_C = 125°C	8.0				A
Peak Forward Surge Current, 8.3ms single half wine-wave superimposed on rated load (JEDEC method)	125				A
Maximum Instantaneous Forward Voltage I_F = 4A, T_J = 100°C I_F = 8A, T_J = 100°C I_F = 4A, T_J = 25°C I_F = 8A, T_J = 25°C	 .800 .895 .900 .975				V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J = 25°C T_J = 100°C	 5.0 150				μA
Typical Junction Capacitance (Note 1)	65				pF
Maximum Reverse Recovery Time (Note 2)	35				ns
Maximum Thermal Resistance RΘJC (Note 3)	2.5				°C/W
Storage and Operating Temperature Range Tc, T_{STG}	-65 to +150				°C

NOTES:
1. Measured at 1MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
3. Thermal Resistance Junction to Case.

RATING AND CHARACTERISTIC CURVES
GI1401 THRU GI1404

Fig. 1—FORWARD CURRENT DERATING CURVE

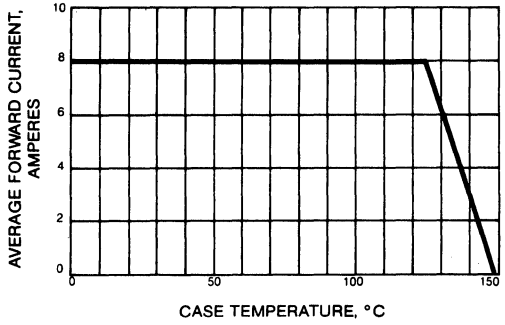


Fig. 3 — TYPICAL REVERSE CHARACTERISTICS

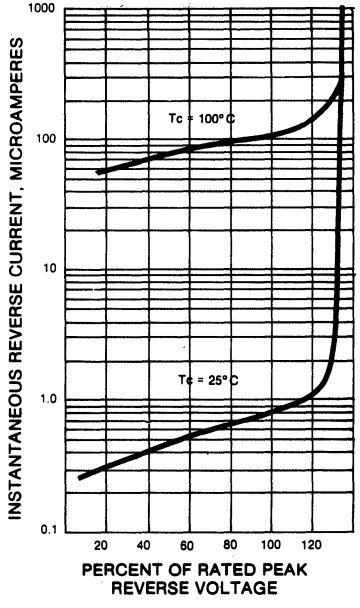


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

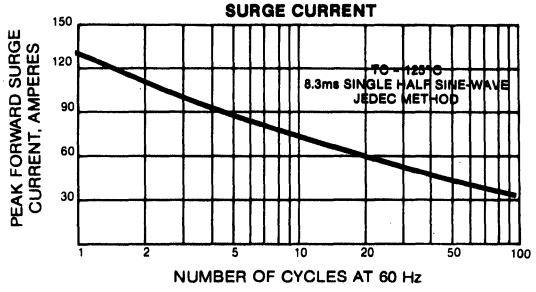


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

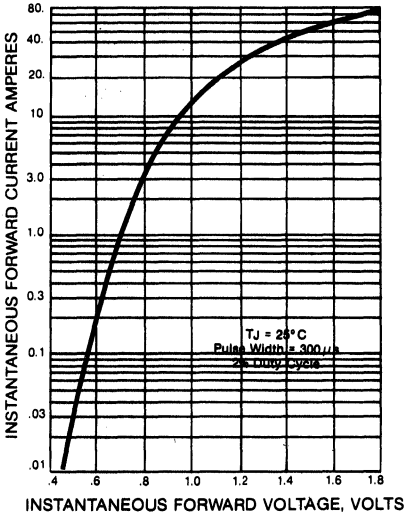
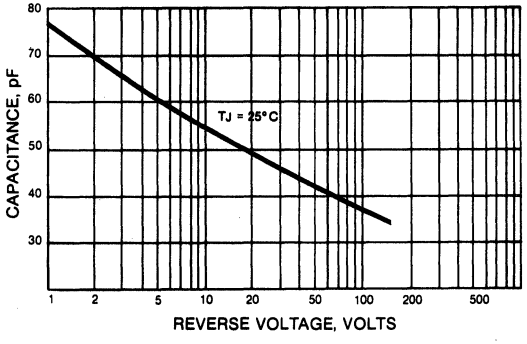


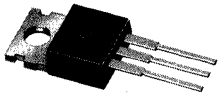
Fig. 5—TYPICAL JUNCTION CAPACITANCE



SGI5401 THRU SGI5404

GLASS PASSIVATED FAST EFFICIENT RECTIFIERS

GENERAL INSTRUMENT



VOLTAGE RANGE
50, 100, 150, 200 Volts

CURRENT
8.0 Amperes

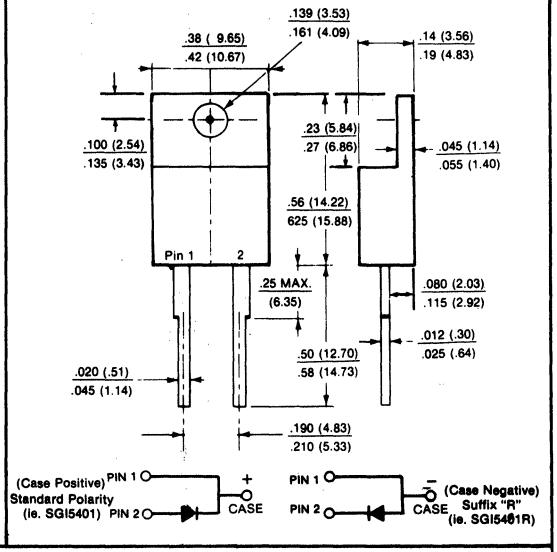
FEATURES

- Glass Passivated junction
- Plastic package has Underwriters Laboratory Flamability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Low power loss, high efficiency
- Low forward voltage, high current capability
- High surge capacity
- Very fast recovery time, high voltage

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD 202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

TO-220



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SGI5401	SGI5402	SGI5403	SGI5404	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Rectified Current T_C = 125°C T_A = 25°C			8.0 3.0		A A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)			125		A
Maximum Forward Voltage @ 8.0ADC T_J = 25°C T_J = 100°C			1.025 0.945		V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J = 25°C T_J = 100°C			5.0 150.0		μA
Maximum Reverse Recovery Time (Note 1)			100.0		ns
Maximum Thermal Resistance RθJC (Note 2)			2.5		°C/W
Storage and Operating Temperature Range, T_J			-65 to +150		°C

NOTES:
1. Reverse Recovery Test Conditions: I_F = .5A, I_R = 1A, I_{rr} = .25A
2. Thermal Resistance Junction to Case

RATING AND CHARACTERISTIC CURVES
SGI5401 thru SGI5404

Fig. 1—FORWARD CURRENT DERATING CURVE

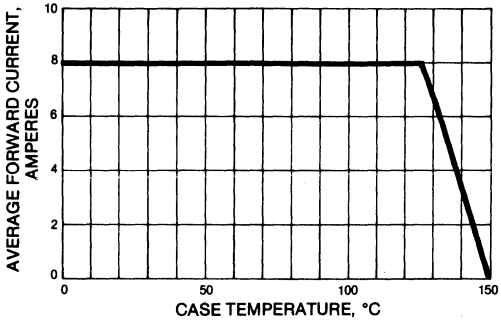


Fig. 2—TYPICAL REVERSE CHARACTERISTICS

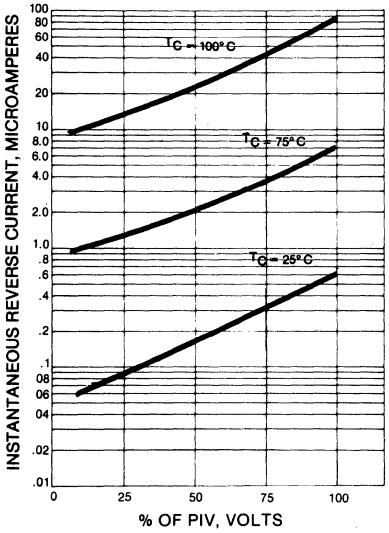


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

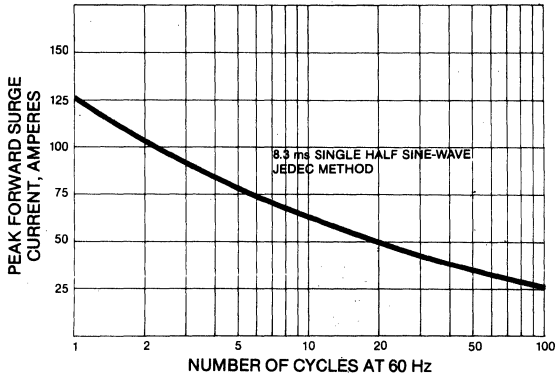


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

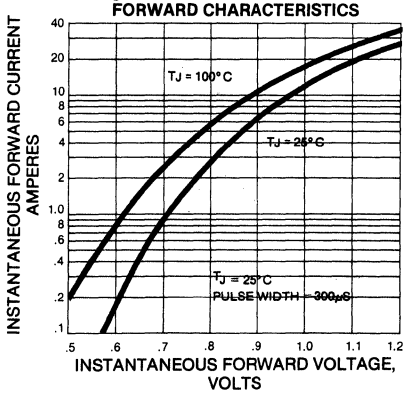
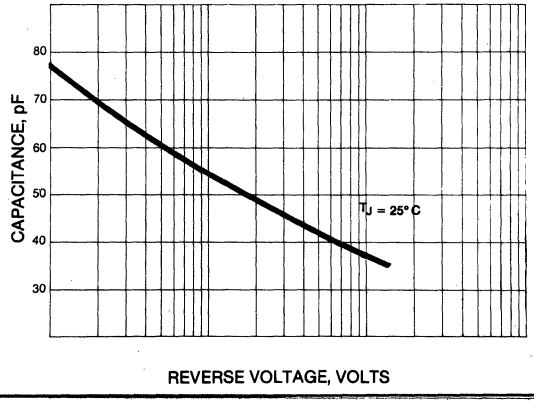


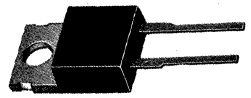
Fig. 5—TYPICAL JUNCTION CAPACITANCE



FES16AT THRU FES16JT

FAST EFFICIENT GLASS PASSIVATED RECTIFIERS

GENERAL INSTRUMENT

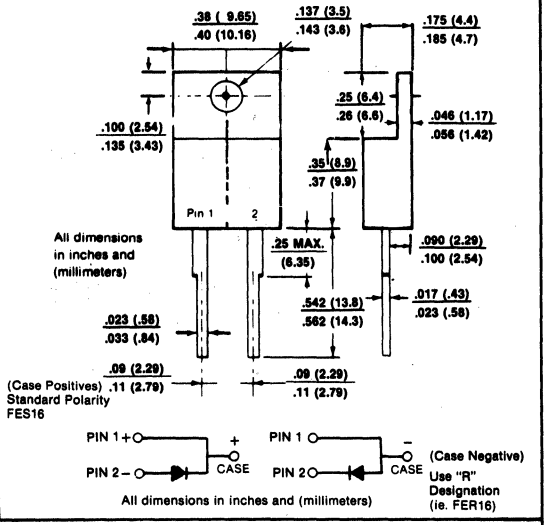


VOLTAGE RANGE
50 to 600 Volts
CURRENT
16 Amperes

FEATURES
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500.
- Glass Passivated Junctions
- Low power loss, high efficiency
- Low forward voltage, high current capability
- High surge capacity
- Super fast recovery time, high voltage

MECHANICAL DATA
Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

TO-220



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	FES 16AT	FES 16BT	FES 16CT	FES 16DT	FES 16FT	FES 16GT	FES 16HT	FES 16JT	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current at Tc = 100°C	16.0								A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	250								A
Maximum Instantaneous Forward Voltage at 16A	.975				1.3				V
Maximum DC Reverse Current at Rated DC Blocking Voltage per element Tc = 25°C Tc = 100°C	10 500								μA μA
Typical Junction Capacitance (Note 1)	150								pF
Maximum Reverse Recovery Time (Note 2)	35								ns
Thermal Resistance RΘJC (Note 3)	1.5								°C/W
Storage and Operating Temperature Range Tc, TSTG	-65 to +150								°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1.0A, Irr = .25A.
3. Thermal Resistance Junction to CASE.

RATING CHARACTERISTIC CURVES
FES16AT THRU FES16JT

Fig. 1—FORWARD CURRENT DERATING CURVE

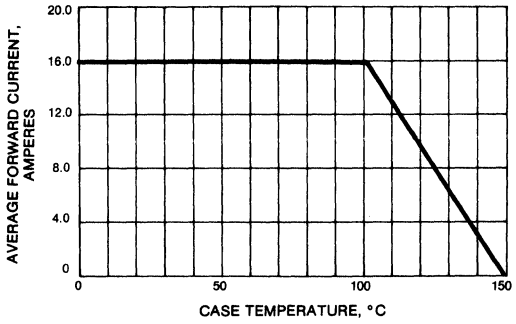


FIG. 2—TYPICAL REVERSE CHARACTERTISTICS

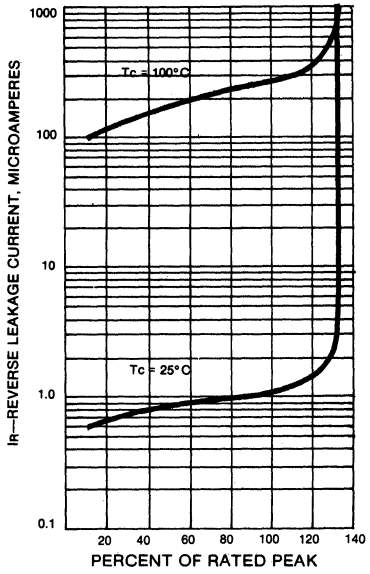


FIG.3—MAXIMUM NON-REPETITIVE SURGE CURRENT

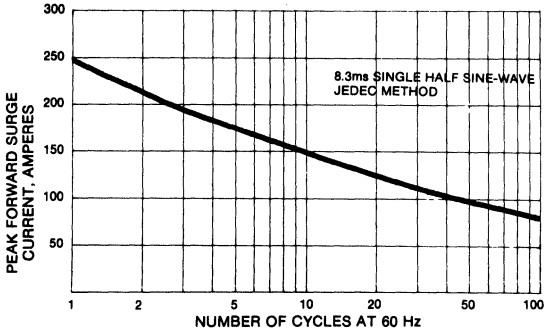


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

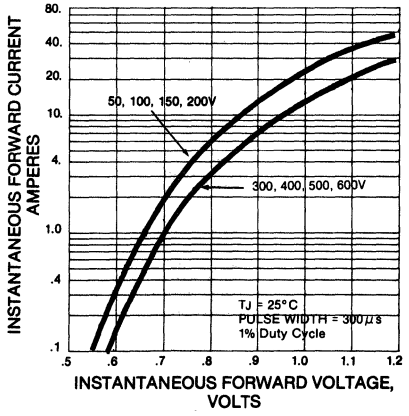
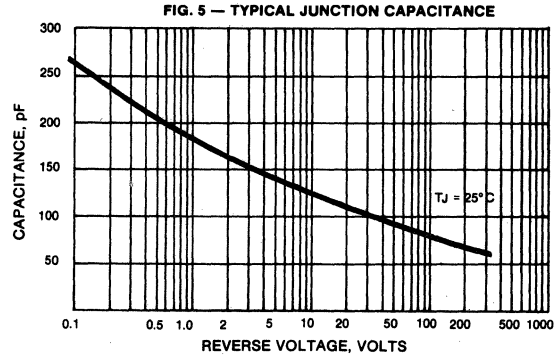


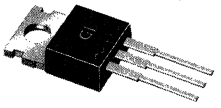
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SGI5401C THRU SGI5404C

GLASS PASSIVATED FAST EFFICIENT RECTIFIERS

GENERAL INSTRUMENT



VOLTAGE RANGE
50, 100, 150, 200 Volts

CURRENT
16 Amperes

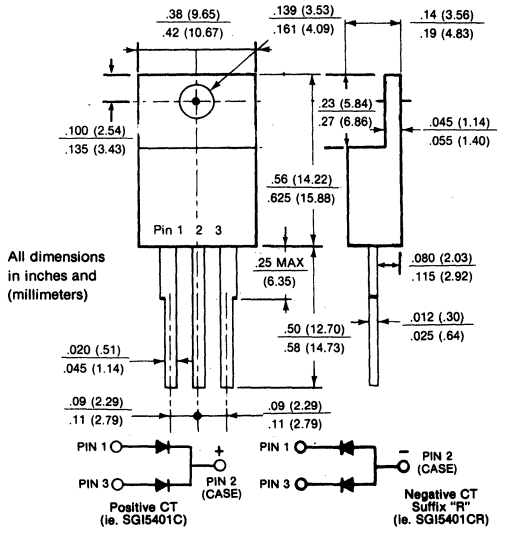
FEATURES

- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Exceeds environmental standards of MIL-STD-19500
- Low power loss, high efficiency
- Low forward voltage, high current capability
- High surge capacity
- Very fast recovery times, high voltage
- Dual rectifier construction, positive center-tap

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD 202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

TO-220 CT



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SGI5401C	SGI5402C	SGI5403C	SGI5404C	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Rectified Current Tc = 125°C TA = 25°C	16.0 3.0				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	200				A
Maximum Forward Voltage @ 8A per element TJ = 25°C TJ = 100°C	1.025 0.945				V
Maximum Average Reverse Current at Rated DC Blocking Voltage per element TJ = 25°C TJ = 100°C	5.0 150.0				μA
Maximum Reverse Recovery Time (Note 1)	100.0				ns
Maximum Thermal Resistance RθJC (Note 2)	1.75				°C/W
Storage and Operating Temperature Range, TJ	-65 to +150				°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A
2. Thermal Resistance Junction to Case

RATING CHARACTERISTIC CURVES
SGI5401C thru SGI5404C

Fig. 1—FORWARD CURRENT DERATING CURVE

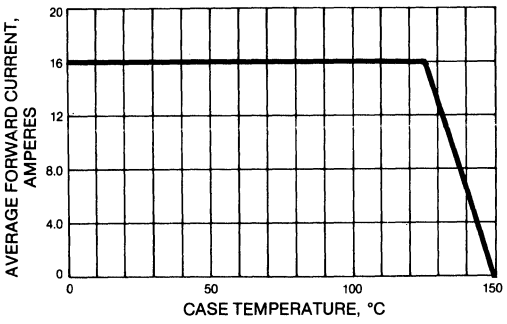


Fig. 2—TYPICAL REVERSE CHARACTERISTICS

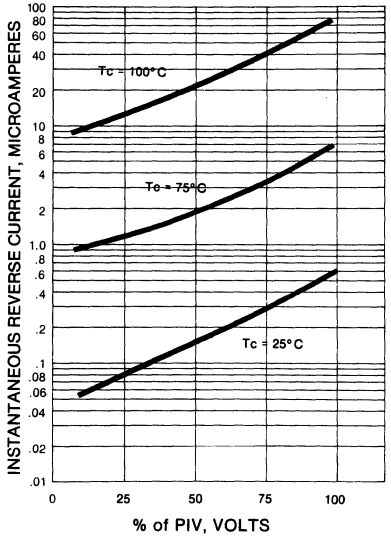


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

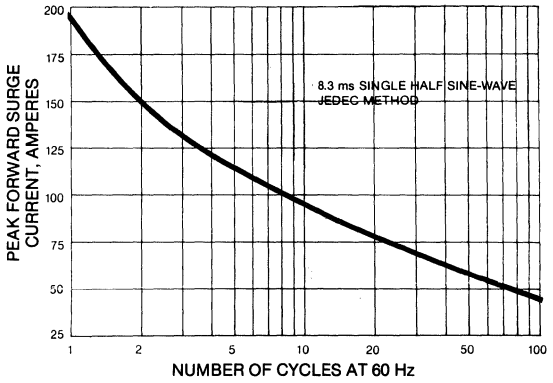


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

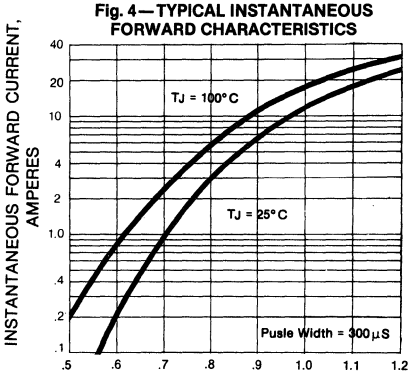
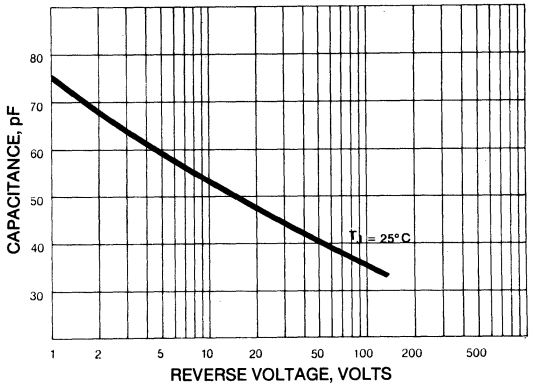


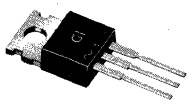
Fig. 5—TYPICAL JUNCTION CAPACITANCE



FEP16-T SERIES

FAST EFFICIENT GLASS PASSIVATED RECTIFIERS

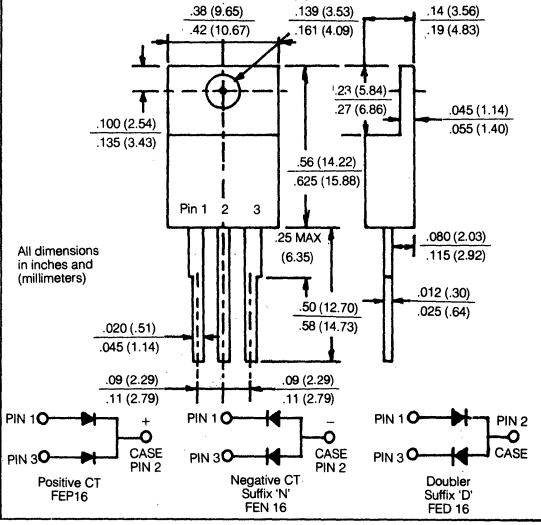
GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 600 Volts

CURRENT
16 Amperes

TO-220 CT



FEATURES

- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500.
- Glass Passivated Junctions
- Low power loss, high efficiency
- Low forward voltage, high current capability
- High surge capacity
- Super fast recovery times, high voltage
- Dual rectifier construction, positive center-tap
- High temperature soldering guaranteed: [300°C, .25", 6.35 mm from case for 10 seconds.]

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD 202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	FEP16AT	FEP16BT	FEP16CT	FEP16DT	FEP16FT	FEP16GT	FEP16HT	FEP16JT	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current at Tc = 100°C	16.0								A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	200								A
Maximum Forward Voltage at 8.0A per element	0.95				1.3				V
Maximum DC Reverse Current at Rated DC Blocking Voltage per element Tc = 25°C Tc = 100°C	10 500								μA μA
Typical Junction Capacitance (Note 1)	65								pF
Maximum Reverse Recovery Time (Note 2)	35								ns
Typical Thermal Resistance ROJC (Note 3)	3.0								°C/W
Storage and Operating Temperature Range TJ	−65 to +150								°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, 1R = 1A. Irr = .25A
3. Thermal Resistance Junction to CASE, Per Element.

RATING CHARACTERISTIC CURVES
FES8AT THRU FES8JT

FIG. 1 — FORWARD CURRENT DERATING CURVE

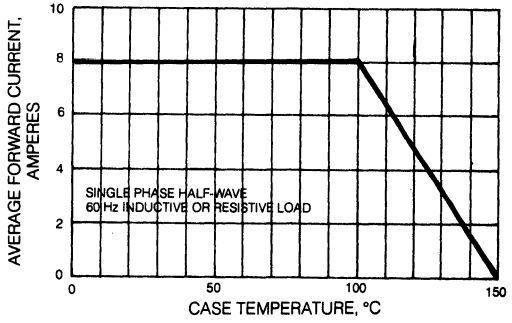


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

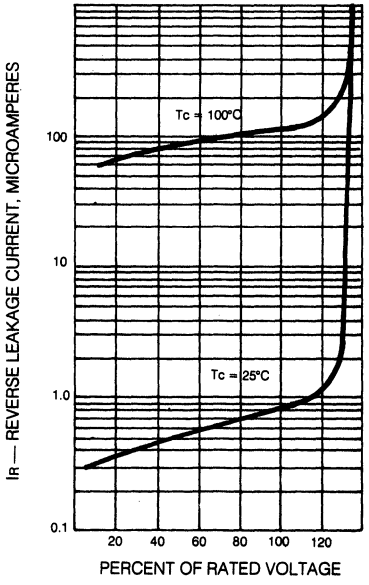


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

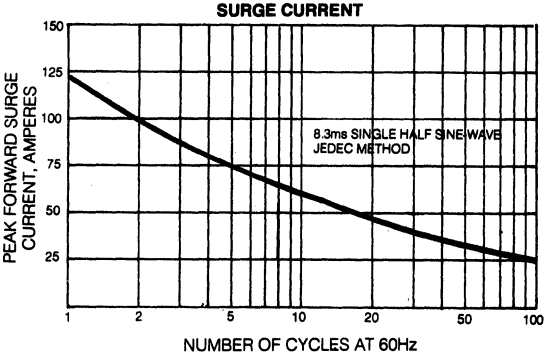


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

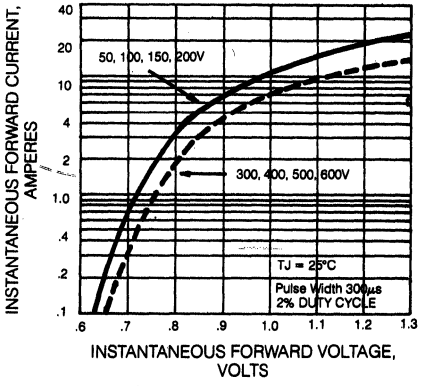
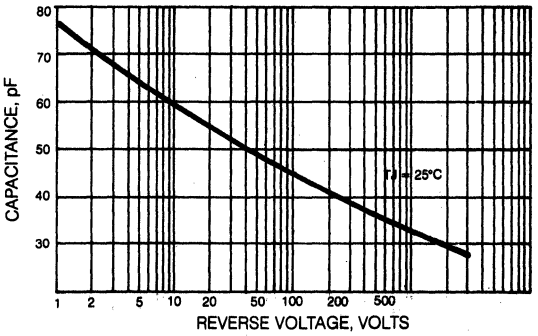


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



FEP30-P SERIES

FAST EFFICIENT GLASS PASSIVATED RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 600 Volts

CURRENT
30 Amperes

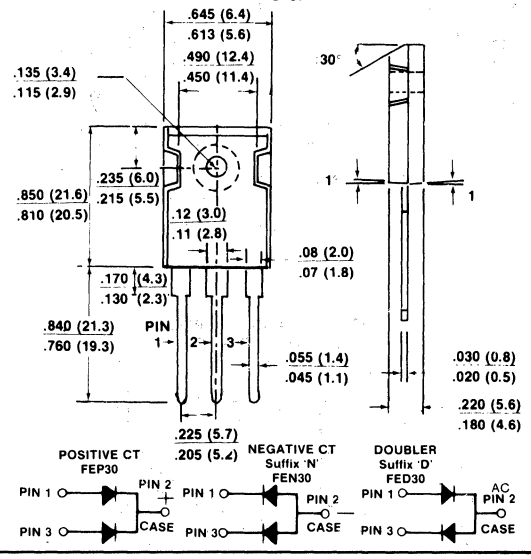
FEATURES

- Dual rectifier construction, positive center-tap
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junctions
- Exceeds environmental standards of MIL-STD-19500
- Superfast recovery times, high voltage
- Low forward voltage, high current capability
- Low thermal resistance
- Low power loss, high efficiency
- High temperature soldering guaranteed: 300°C, .17", 4.3mm from case for 10 seconds.

MECHANICAL DATA

Case: TO-3P
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .47 ounces, 13.2 grams

TO-3P



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	FEP30AP	FEP30BP	FEP30CP	FEP30DP	FEP30FP	FEP30GP	FEP30HP	FEP30JP	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	500	600	Vpk
Maximum RMS Voltage	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current at Tc = 100°C	30								A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300								A
Maximum Instantaneous Forward Voltage at 15A per element	0.95				1.3				V
Maximum DC Reverse Current at Rated DC Blocking Voltage per element Tc = 25°C Tc = 100°C	10 500								μA μA
Typical Junction Capacitance (Note 1)	150								pF
Maximum Reverse Recovery Time (Note 2)	35								ns
Maximum Thermal Resistance RΘJC (Note 3)	1.0								°C/W
Storage and Operating Temperature Range Tc	-65 to +150								°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
3. Thermal Resistance Junction to CASE, Per Element.

RATING CHARACTERISTIC CURVES
FEP30AP THRU FEP30JP

FIG. 1 — FORWARD CURRENT DERATING CURVE

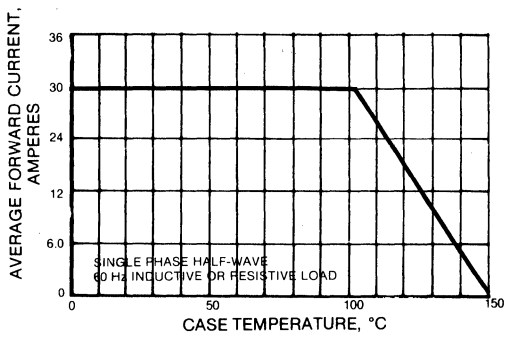


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

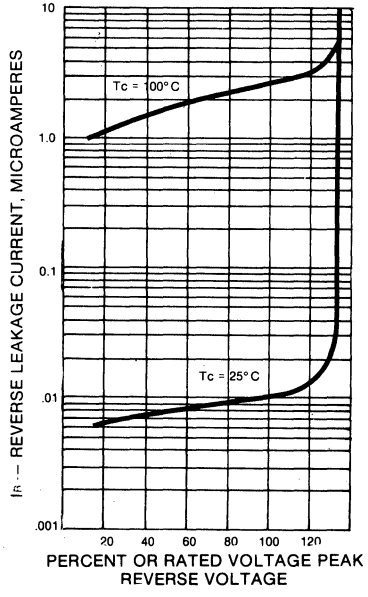


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

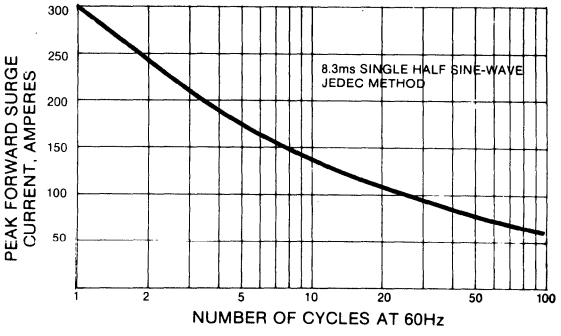


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

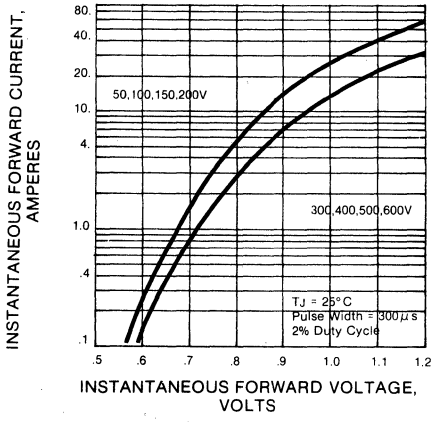
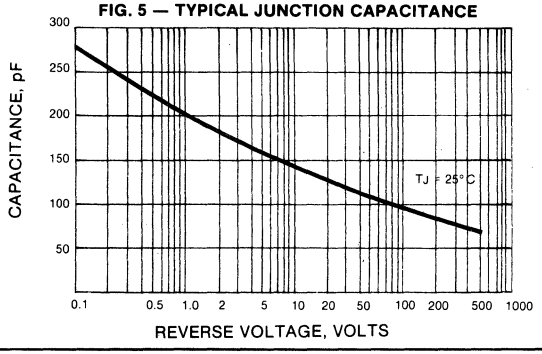


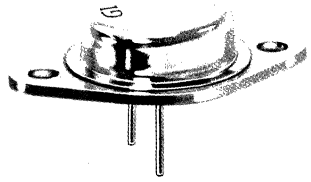
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



FEP30-M SERIES

FAST EFFICIENT GLASS PASSIVATED RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 600 Volts

CURRENT
30 Amperes

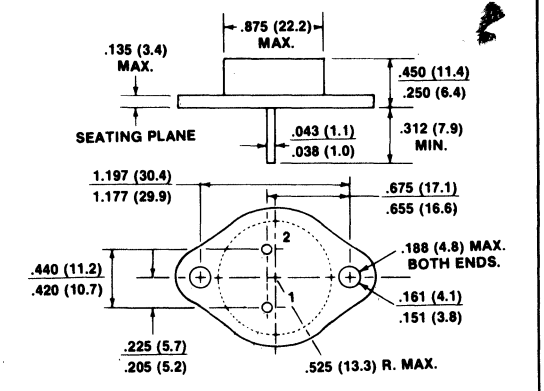
FEATURES

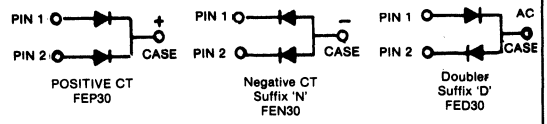
- Dual rectifier construction, positive center-tap
- Convenient, mechanically regged; hermetically sealed package
- Glass passivated junctions
- Exceeds environmental standards of MIL-STD-19500
- Super fast recovery times, high voltage
- Low forward voltage, high current capability
- Low thermal resistance
- Low power loss, high efficiency
- High temperature soldering guaranteed for 300° C for 10 seconds

MECHANICAL DATA

Case: TO-3
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting Position: Any
Weight: .47 ounces, 13.2 grams

TO-3





MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	FEP 30AM	FEP 30BM	FEP 30CM	FEP 30DM	FEP 30FM	FEP 30GM	FEP 30HM	FEP 30JM	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	500	600	Vpk
Maximum RMS Voltage	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current at Tc = 100° C	30								A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300								A
Maximum Instantaneous Forward Voltage at 15A per element	0.95				1.3				V
Maximum DC Reverse Current at Rated DC Blocking Voltage per element Tc = 25° C Tc = 100° C	10 500								μA μA
Typical Junction Capacitance (Note 1)	150								pF
Maximum Reverse Recovery Time (Note 2)	35								ns
Typical Thermal Resistance RθJC (Note 3)	1.4								°C/W
Storage and Operating Temperature Range Tc	-65 to +150								°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, irr = .25A.
3. Thermal Resistance Junction to CASE, Per Element.

RATING CHARACTERISTIC CURVES
FEP30AM THRU FEP30JM

FIG. 1 — FORWARD CURRENT DERATING CURVE

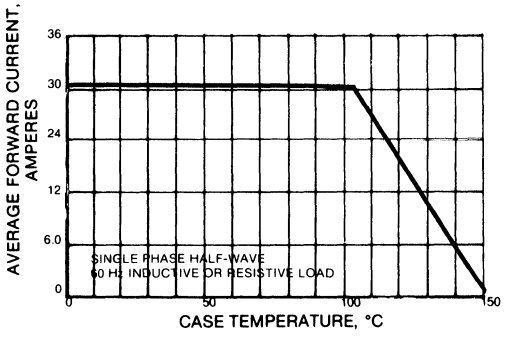


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

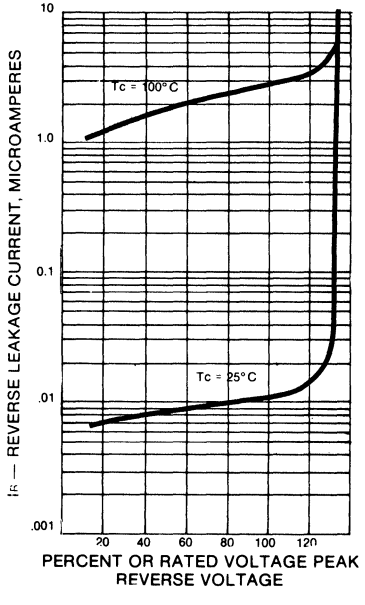


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

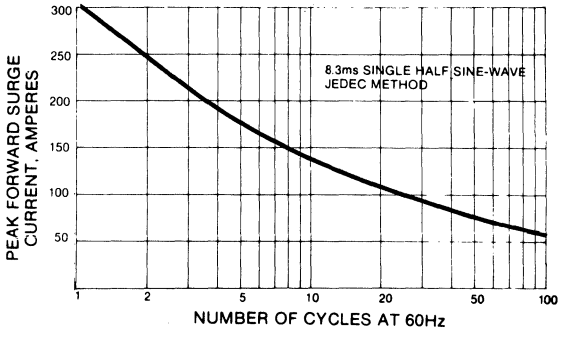


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

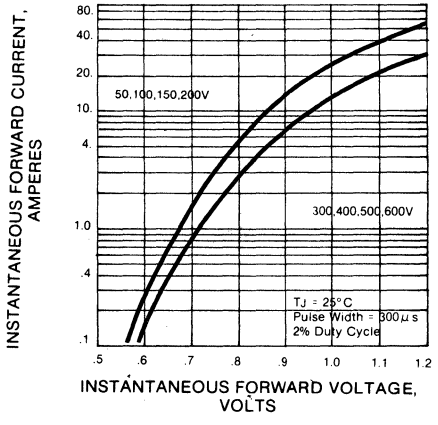
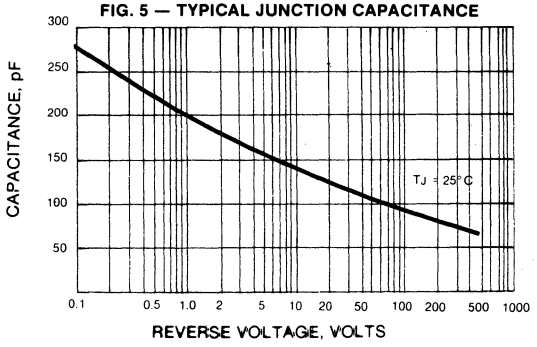


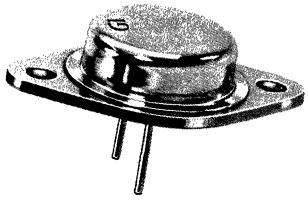
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



GI2601 THRU GI2603

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 150 Volts

CURRENT
30 Amperes

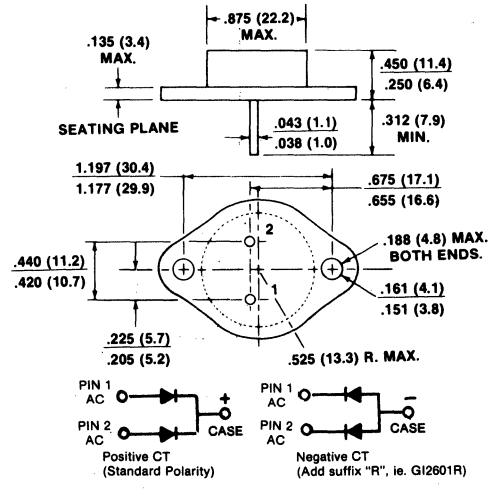
FEATURES

- Glass passivated junction
- Dual rectifier construction
- Convenient, mechanically rugged, hermetically sealed package
- Exceeds environmental standards of MIL-STD-19500
- Super fast recovery times, high voltage
- Low forward voltage, high current capability
- Low thermal resistance
- Low power loss, high efficiency

MECHANCIAL DATA

Case: TO-3
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .47 ounces, 13.2 grams

TO-3



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI2601	GI2602	GI2603	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	Vpk
Maximum RMS Voltage	35	70	105	V
Maximum DC Blocking Voltage	50	100	150	V
Maximum Average Forward Rectified Current at T_C = 100°C		30		A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)		400		A
Maximum Instantaneous Forward Voltage per Leg I_F = 15A, T_C = 125°C I_F = 15A, T_C = 25°C		.825 .930		V V
Maximum DC Reverse Current at Rated DC Blocking Voltage per element T_J = 25°C T_J = 125°C		20 4.0		μA mA
Typical Junction Capacitance (Note 1)		150		pF
Maximum Reverse Recovery Time (Note 2)		35		ns
Maximum Thermal Resistance $R_{\theta JC}$ (Note 3)		1.0		°C/W
Storage and Operating Temperature Range T_C, T_{STG}		-65 to +175		°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
3. Thermal Resistance Junction to Case.

RATING CHARACTERISTIC CURVES
GI2601 THRU GI2603

Fig. 1—FORWARD CURRENT DERATING CURVE

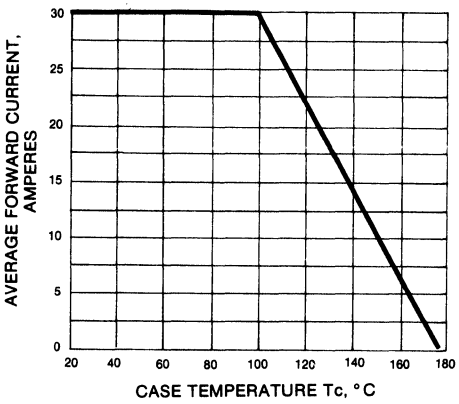


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

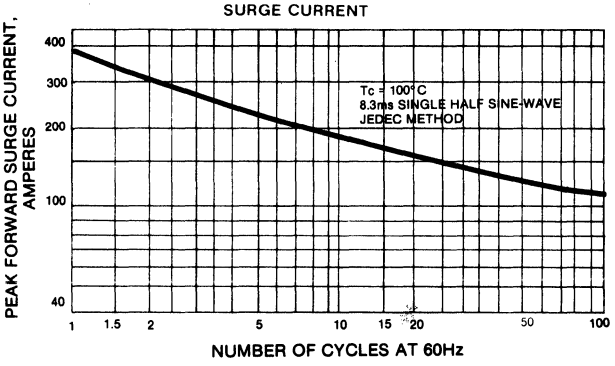


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

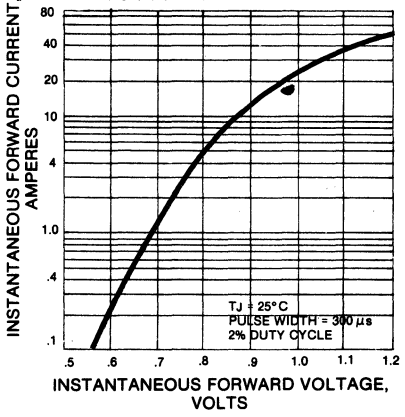


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

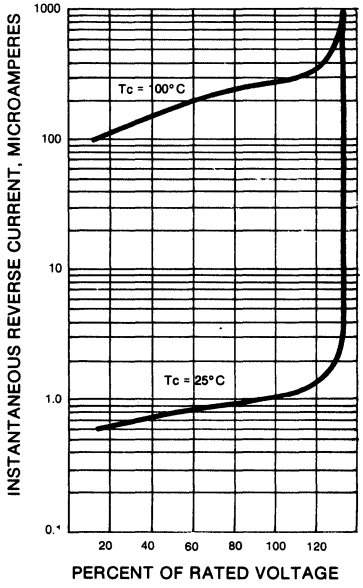
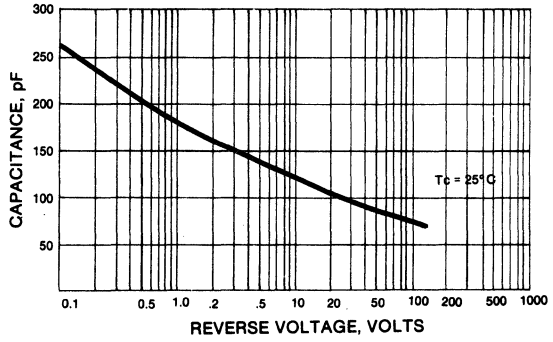


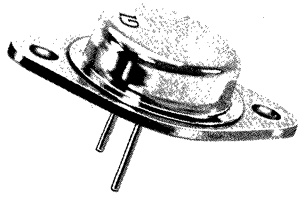
Fig. 5—TYPICAL JUNCTION CAPACITANCE



SGI5601C THRU SGI5604C

GLASS PASSIVATED FAST EFFICIENT RECTIFIERS

GENERAL INSTRUMENT



VOLTAGE RANGE

50, 100, 150, 200 Volts

CURRENT

25 Amperes

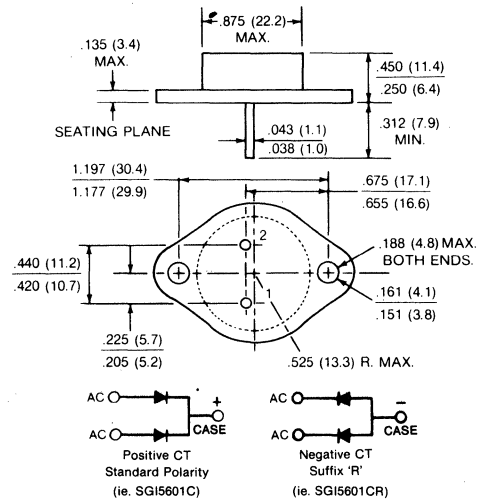
FEATURES

- Glass passivated junction
- Convenient, mechanically rugged, hermetically sealed package
- Exceeds environmental standards of MIL-STD-19500
- Very fast recovery times, high voltage
- Low forward voltage, high current capability
- Low thermal resistance
- Low power loss, high efficiency

MECHANICAL DATA

Case: TO-3
Terminals: Lead solderable per MIL-STD 202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .47 ounces, 13.2 grams

TO-3



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SGI5601C	SGI5602C	SGI5603C	SGI5604C	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Rectified Current at Tc = 100°C	25				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	400				A
Maximum Forward Voltage at 12.5ADC Tc = 25°C per element Tc = 125°C	0.990 0.830				V
Maximum Average Reverse Current at Rated DC Blocking Voltage per Tc = 25°C element Tc = 125°C	20.0 4.0				μA mA
Maximum Reverse Recovery Time (Note 1)	100				ns
Maximum Thermal Resistance RθJC (Note 2)	1.0				°C/W
Storage and Operating Temperature Range, TJ	-65 to +175				°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A
2. Thermal Resistance Junction to Case

RATING CHARACTERISTIC CURVES
SGI5601C thru SGI5604C

Fig. 1—FORWARD CURRENT DERATING CURVE

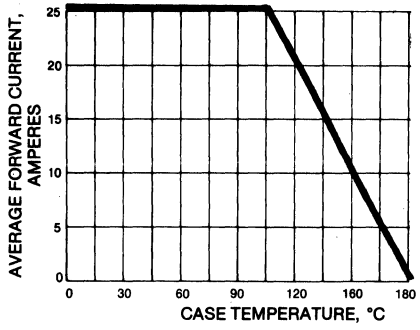


Fig. 2—TYPICAL REVERSE CHARACTERISTICS

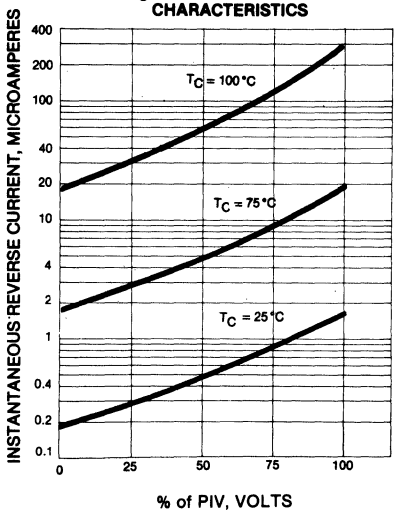


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

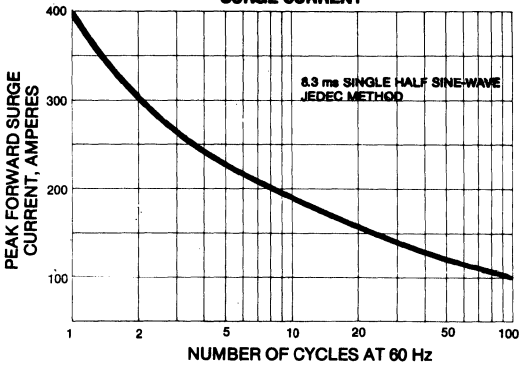


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

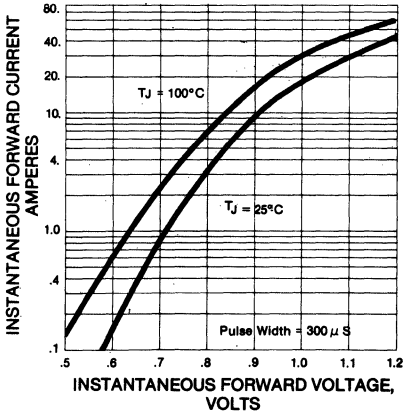
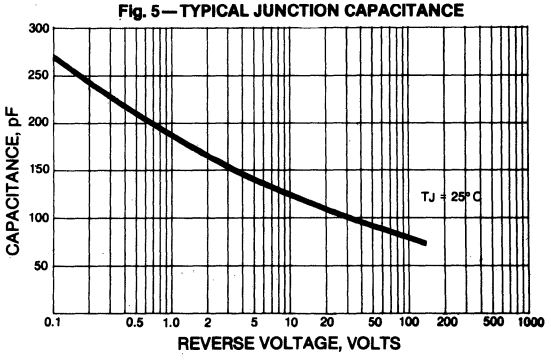


Fig. 5—TYPICAL JUNCTION CAPACITANCE



GI2401 THRU GI2404

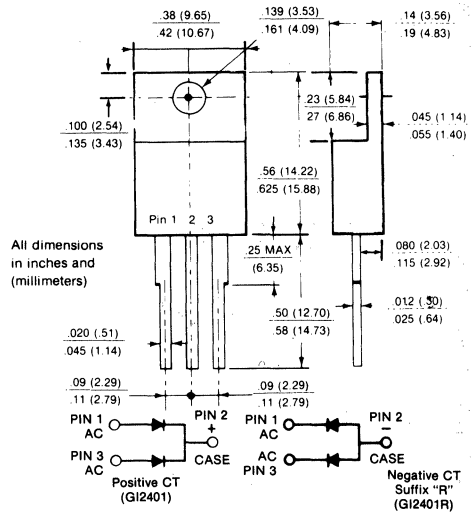
GLASS PASSIVATED FAST EFFICIENT RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 200 Volts

CURRENT
16 Amperes

TO-220 CT



FEATURES

- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Low power loss, high efficiency
- Low forward voltage, high current capability
- High surge capacity
- Super fast recovery times, high voltage
- Dual rectifier construction

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202 Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings and 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI2401	GI2402	GI2403	GI2404	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum Blocking Voltage	50	100	150	200	V
Maximum Average Forward Rectified Current at T_C = 125°C	16.0				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125				A
Maximum Instantaneous Forward Voltage I_F = 4A, T_J = 100°C I_F = 8A, T_J = 100°C I_F = 4A, T_J = 25°C I_F = 8A, T_J = 25°C	.800 .895 .900 .975				V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J = 25°C T_J = 100°C	5.0 150			5.0 500	μA
Typical Junction Capacitance (Note 1)	65				pF
Maximum Reverse Recovery Time (Note 2)	35				ns
Maximum Thermal Resistance $R\Theta JC$ (Note 3)	1.75				°C/W
Storage and Operating Temperature Range T_C, T_{STG}	-65 to +150				°C

NOTES:
1. Measured at 1MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
3. Thermal Resistance from Junction to Case.

RATING CHARACTERISTIC CURVES
GI2401 THRU GI2404

Fig. 1—FORWARD CURRENT DERATING CURVE

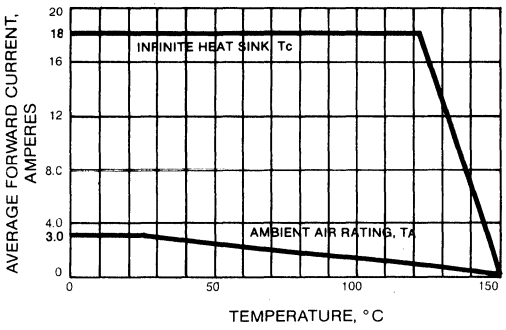


Fig. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

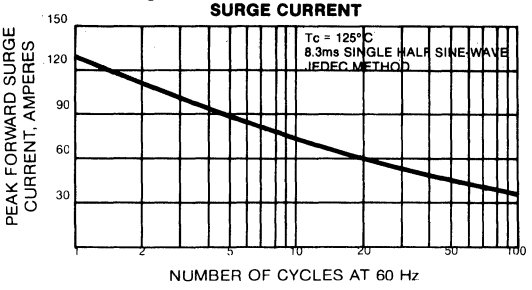


Fig. 3 — TYPICAL REVERSE CHARACTERISTICS

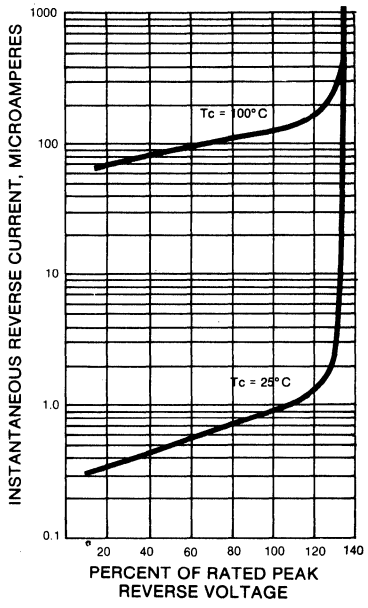


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

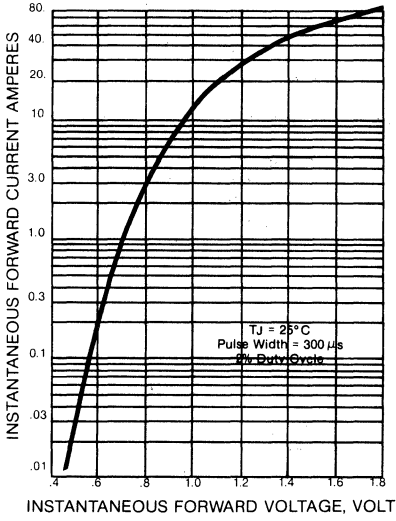
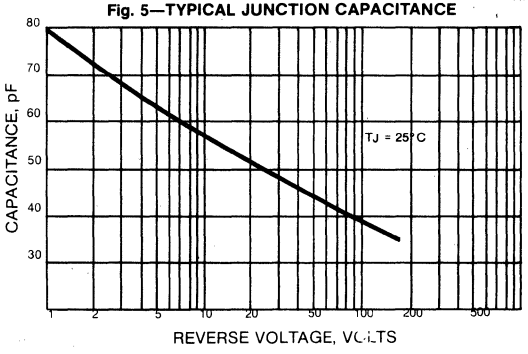


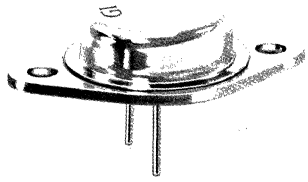
Fig. 5—TYPICAL JUNCTION CAPACITANCE



GI2604 THRU GI2606

GLASS PASSIVATED FAST EFFICIENT RECTIFIER

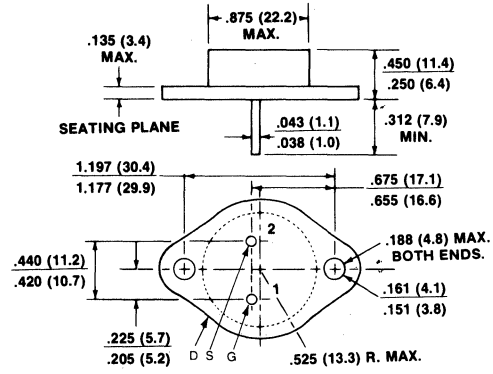
GENERAL INSTRUMENT

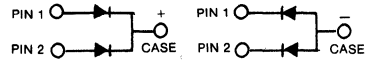


VOLTAGE RANGE
200 to 400 Volts

CURRENT
30 Amperes

TO-3





Positive CT
(Standard Polarity)

Negative CT
(Add Suffix "R",
ie. GI2604R)

FEATURES

- Glass passivated junction
- Dual rectifier construction
- Convenient, mechanically rugged, hermetically sealed package
- Exceeds environmental standards of MIL-STD-19500
- Very fast recovery times, high voltage
- Low forward voltage, high current capability
- Low thermal resistance
- Low power loss, high efficiency

MECHANICAL DATA

Case: TO-3
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting postion: Any
Weight: .47 ounces, 13.2 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load
For capacitive load, derate current by 20%.

	GI2604	GI2605	GI2606	UNITS
Maximum Recurrent Peak Reverse Voltage	200	300	400	Vpk
Maximum RMS Voltage	140	210	280	V
Maximum DC Blocking Voltage	200	300	400	V
Maximum Average Forward Rectified Current at T_C = 100°C	30			A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300			A
Maximum Instantaneous Forward Voltage per Leg I_F = 15A, T_C = 125°C I_F = 15A, T_C = 25°C	 1.15 1.25			 V V
Maximum DC Reverse Current at Rated DC Blocking Voltage per element T_J = 25°C T_J = 125°C	 50 10			 μA mA
Typical Junction Capacitance (Note 1)	150			pF
Maximum Reverse Recovery Time (Note 2)	50			ns
Maximum Thermal Resistance $R_{\theta JC}$ (Note 3)	1.0			°C/W
Storage and Operating Temperature Range T_{STG}, T_C	-65 to +150			°C

NOTES:
1. Measured at 1MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
3. Thermal Resistance from Junction to Case.

RATING CHARACTERISTIC CURVES
GI2604 THRU GI2606

FIG. 1 — FORWARD CURRENT DERATING CURVE

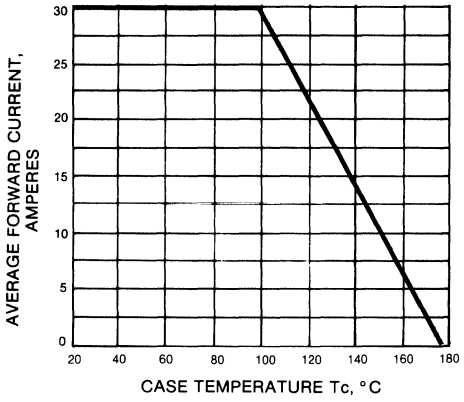


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

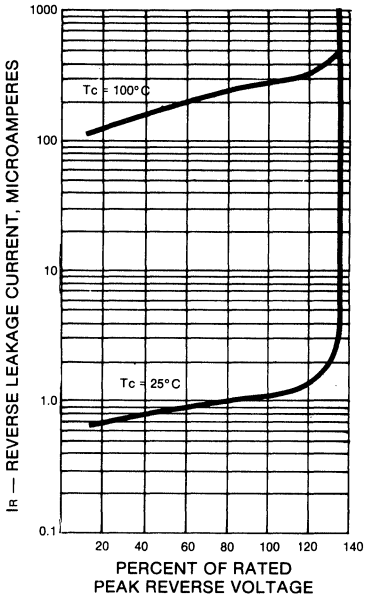


FIG. 3 — MAXIMUM NON-REPETITIVE PEAK SURGE CURRENT

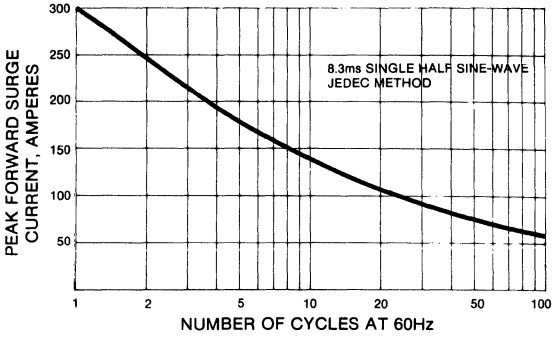


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

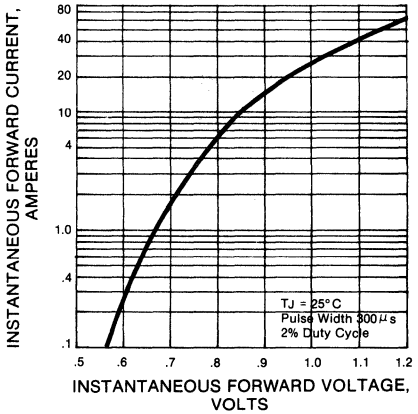
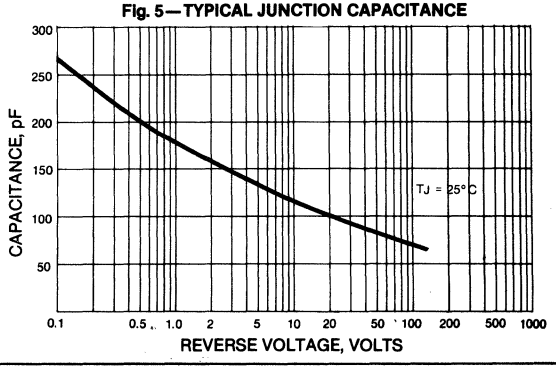


Fig. 5—TYPICAL JUNCTION CAPACITANCE

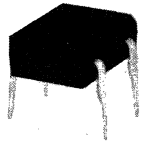


FAST EFFICIENT RECTIFIER BRIDGES 1 AMPERE

EDF-M SERIES

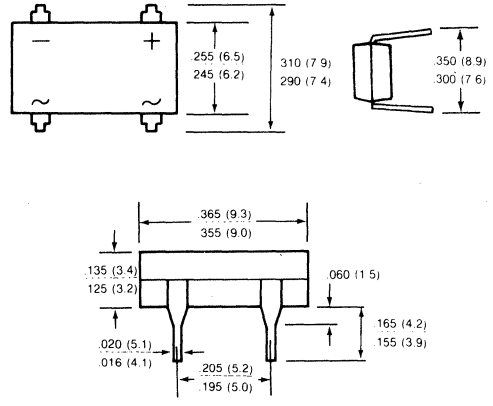
MINIATURE GLASS PASSIVATED SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 200 Volts

CURRENT
1.0 Ampere



Dimensions in inches and (millimeters)

FEATURES

- Plastic material used carries Underwriters Laboratory recognition
- Glass passivated junctions
- Surge overload rating—50 amperes peak
- Ideal for printed circuit board
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 300°C/10 seconds at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Reliable low cost construction utilizing molded plastic technique results in inexpensive product
Terminals: Lead solderable per MIL-STD-202 Method 208
Polarity: Polarity symbols molded on body
Mounting Position: Any
Weight: 0.04 ounce, 1.0 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	EDF1AM	EDF1BM	EDF1CM	EDF1DM	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Bridge Input Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Rectified Output Current T_A = 40°C	1.0				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load	50.0				A
I^2t Rating for fusing (t < 8.35ms)	10.0				A^2t
Maximum Instantaneous Forward Voltage Drop per Bridge Element at 1.0A	1.05				V
Maximum Reverse Current at rated DC Blocking Voltage per Element T_A = 25°C T_A = 125°C	5.0 1.0				μA mA
Maximum Reverse Recovery Time (Note 1)	50				ns
Operating and Storage Temperature T_J, T_{STG}	-55 to +150				°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
EDF-M SERIES

FIG. 1 — MAXIMUM NON-REPETITIVE SURGE CURRENT

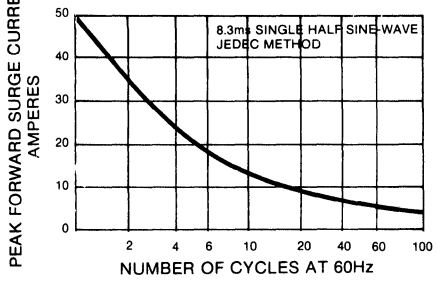


FIG. 2 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

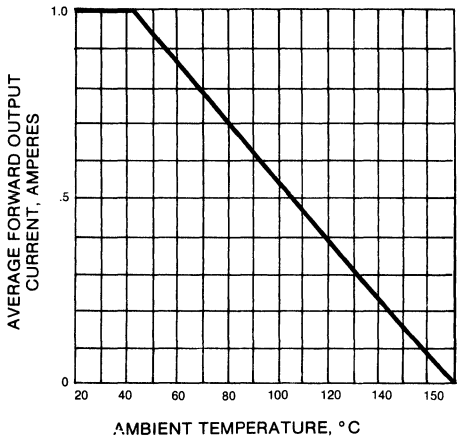


FIG. 3 - TYPICAL FORWARD CHARACTERISTICS PER BRIDGE ELEMENT

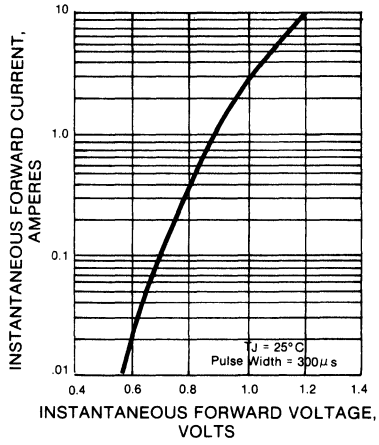


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS PER BRIDGE ELEMENT

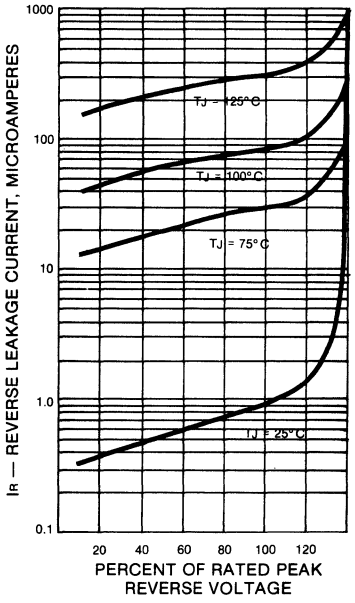
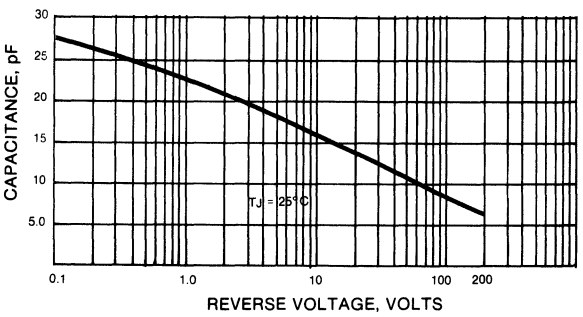


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



GLASS PASSIVATED PLASTIC RECTIFIERS 0.25 TO 3.0 AMPERES

GENERAL INSTRUMENT

Superectifier

0.1 to 3.0 Amperes

50 V to 4000 V

Introduction

No other 1 to 3 Amp rectifier — plastic, glass, or metal — can match (or even approach) SUPERECTIFIER's combination of features...the result of General Instrument's unique glass-plastic construction:

- Brazed at greater than 600°C at both leads and cell — eliminates all soft solders
- Exclusive UL recognized *flame-retardant* epoxy molding compound rated 94V-0, the highest available
- Patented glass passivation
- Reliability proved equal to military requirements
- Hermetically sealed construction
- Cost effective construction

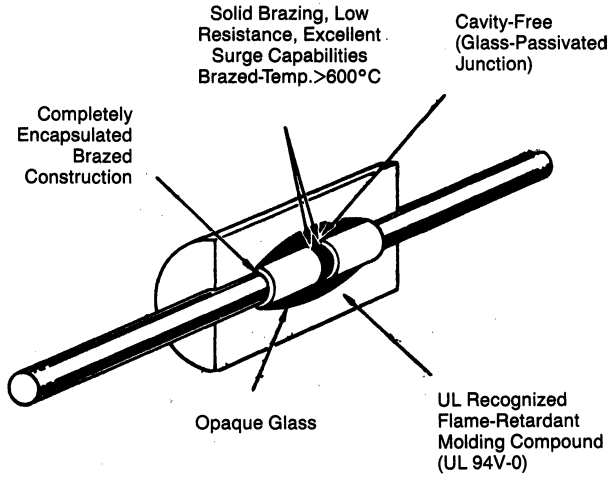
General Instrument's SUPERECTIFIER is exactly that...a super rectifier. There is nothing else in the world like it.

In cell construction, most other rectifiers rated up to 3 Amps are soft soldered or are only pressure contacted. SUPERECTIFIER is made into an entirely solid unit with its leads and cell brazed at temperatures greater than 600°C. All other rectifiers fail at half that temperature.

In cell protection, conventional plastic rectifiers use either varnish, silicon rubber or a thin film of silicon oxide to protect the junction. SUPERECTIFIER uses a patented glass passivation to seal its junction hermetically.

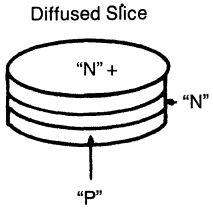
In device encapsulation, again SUPERECTIFIER is the only one that won't go up in flames. It is one of the few rectifiers using an exclusive flame-RETARDANT molding compound, rated UL 94V-0, the highest rating available. Other plastic rectifiers use flame-ENHANCING compounds. Here again, SUPERECTIFIER's superiority is manifest. With this construction it exceeds environmental standards of MIL-STD-19500.

In summary, SUPERECTIFIER is the world's only rectifier with totally brazed construction, with a patented glass passivated junction, and with flame-retardant molding encapsulation.

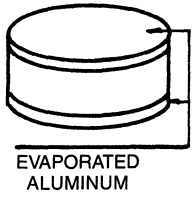


GLASS RECTIFIER PROCESS

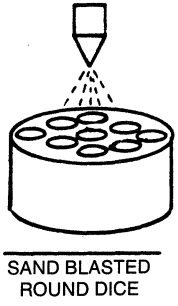
1—Diffuse a PN junction into a slice of silicon.



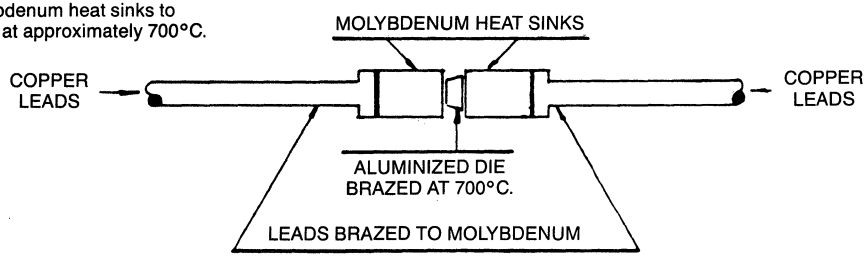
2—Evaporate aluminum on both sides of the slice to make metallurgical contact.



3—Sandblast the slice to produce a round beveled die.



4—Braze the die between two molybdenum heat sinks to which leads have been attached at approximately 700°C.

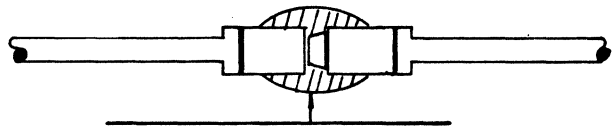


GLASS RECTIFIER PROCESS

5—Clean the assembly by chemically etching, washing and drying.

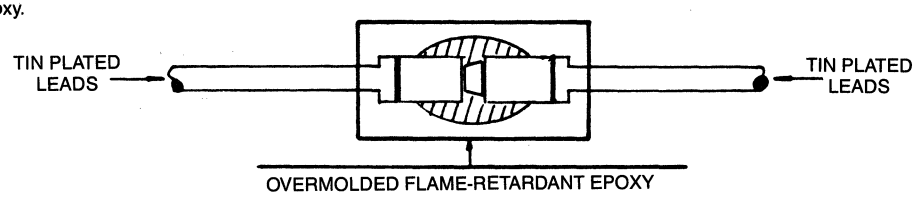
6—Apply glass in the form of a frit to the die and molybdenum assembly.

7—Melt the glass by heating in an oven to approximately 600°C.



GLASS BODY AND PASSIVATION FIRED AT 600°C.

8—Overmold glass passivated construction with UL recognized flame-retardant 94V-0 classification epoxy.



9—Perform finishing operations such as lead tinning, electrical testing and marking.

Package Design

The small size of the superectifier package with its capability up to 3 Amperes permits greater packing densities in electronic assemblies and equipment, while increasing reliability. Furthermore, only high temperature brazing operations are used to withstand the 600°C required to melt and fuse the glass. This technique eliminates solder construction and tremendously enhances mechanical strength and temperature cycling capability, increasing operating and storage temperature range while reducing thermal resistance.

Reliability

Specified reliability data on Superectifier devices are available from the General Instrument Semiconductor Components Division Reliability Department. The basic design of the superectifier devices and the strict positive controls over materials and manufacturing processes provide assurance of failure-free performance under the most severe conditions. Processing facilities have been geared to follow the procedural requirements of Military Standard 750 and are capable of withstanding environmental extremes in excess of MIL-S-19500. Assurance of production uniformity and reliability is provided by a test technique called "Operational Load Line Testing," which has proven product reliability with over 1 Billion Superectifiers now in use.

Glass Passivated Junction Plastic Rectifiers 0.25 to 1.50 AMPERES

Types: 1N3611GP thru 1N3614GP
1N4001GP thru 1N4007GP
1N4245GP thru 1N4249GP
1N5059GP thru 1N5062GP
1N5391GP thru 1N5399GP
GP02-20 thru GP02-40
GP10A thru GP10M
GP15A thru GP15M

Features:
- High Temperature Metallurgically Bonded
- Plastic Package has Underwriters Laboratory Classification 94V-0
- Glass Passivated Junction overmolded in epoxy packages for easy handling
- I_O rated current operation at 55°C Ambient Temperature with no Thermal Runaway.
- Exceeds Environmental Standards of MIL-STD-19500
- High Temperature Soldering Guaranteed 350°C/10 Second/.375" 9.5mm Lead Length at 5 lbs. 2.25 kg Tension
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208

Glass Passivated Junction Plastic Rectifiers 2.0 to 3.0 AMPERES

Types: 1N5624GP thru 1N5627GP
GP20A thru GP20M
GP25A thru GP25M
GP30A thru GP30M

Features:
- High Temperature Metallurgically Bonded
- Plastic Package has Underwriters Laboratory Classification 94V-0
- Glass Passivated Junction overmolded in epoxy packages for easy handling
- I_O rated current operation at 55°C Ambient Temperature with no Thermal Runaway
- Typical I_R less than 0.1 μA
- Exceeds Environmental Standards of MIL-STD-19500
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208
- High Temperature Soldering Guaranteed 350°C/10 Second/.375" 9.5mm Lead Length at 5 lbs. 2.25 kg Tension

Glass Passivated Junction Plastic Fast Recovery Rectifiers 0.15 to 3.0 AMPERES

Types: 1N4942GP thru 1N4948GP
RGP01-10 thru RGP01-20
RGP15-10 thru RGP15-20
RGP10A thru RGP10M
RGP15A thru RGP15M
RGP25A thru RGP25M
RGP30A thru RGP30M

Features:
- High Temperature Metallurgically Bonded
- Fast switching for High Rectication Efficiency to 100kHz
- Plastic Package has Underwriters Laboratory Classification 94V-0
- Exceeds Environmental Standards of MIL-STD-19500
- Includes all Advantages of the SUPERECTIFIER Design
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208
- High Temperature Soldering Guaranteed: 350°C/10 Second/.375" 9.5mm Lead Length at 5 lbs. 2.25 kg Tension

GENERAL INSTRUMENT

QUICK GUIDE TO SUPERECTIFIERS

TYPE	RGP01* -10 thru -20	GP02 -20 thru -40	RGP15* -10 thru -20		GP10A thru GP10M	1N3611GP thru 1N3614GP	1N4001GP thru 1N4007GP	1N4245GP thru 1N4249GP	1N4933GP* thru 1N4937GP*	1N4942GP* thru 1N4948GP*	RGP10A* thru RGP10M*	1N5614GP thru 1N5622GP	1N5615GP* thru 1N5623GP
CASE	DO41	DO41	DO15		DO41	DO41	DO41	DO41	DO41	DO41	DO41	DO15	DO15
I_o (A)	0.1	0.25	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
@T_A (°C)	55	55	55		55	100	75	55	75	55	55	55	55
V_R = 1000 (V)	RGP01 -10		RGP15 -10	V_R = 50 (V)	GP10A		1N4001GP		1N4933GP		RGP10A		
V_R = 1200 (V)	RGP01 -12		RGP15 -12	V_R = 100 (V)	GP10B		1N4002GP		1N4934GP		RGP10B		
V_R = 1400 (V)	RGP01 -14		RGP15 -14	V_R = 200 (V)	GP10D	1N3611GP	1N4003GP	1N4245GP	1N4935GP	1N4942GP	RGP10D	1N5614GP	1N5615GP
V_R = 1600 (V)	RGP01 -16		RGP15 -16	V_R = 300 (V)						1N4943GP			
V_R = 1800 (V)	RGP01 -18		RGP15 -18	V_R = 400 (V)	GP10G	1N3612GP	1N4004GP	1N4246GP	1N4936GP	1N4944GP	RGP10G	1N5616GP	1N5617GP
V_R = 2000 (V)	RGP01 -20	GP02 -20	RGP15 -20	V_R = 500 (V)						1N4945GP			
V_R = 2500 (V)		GP02 -25		V_R = 600 (V)	GP10J	1N3613GP	1N4005GP	1N4247GP	1N4937GP	1N4946GP	RGP10J	1N5618GP	1N5619GP
V_R = 3000 (V)		GP02 -30		V_R = 800 (V)	GP10K	1N3614GP	1N4006GP	1N4248GP		1N4947GP	RGP10K	1N5620GP	1N5621GP
V_R = 3500 (V)		GP02 -35		V_R = 1000 (V)	GP10M	1N3957GP	1N4007GP	1N4249GP		1N4948GP	RGP10M	1N5622GP	1N5623GP
V_R = 4000 (V)		GP02 -40											
SURGE (A)	20	15	15		30	30	30	25	30	30	30	50	50
V_F (V)	1.5	3.0	1.8		1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.2	1.2
Page	186	152	198		160	154	156	158	188	190	192	166	194

*Fast Recovery

GENERAL INSTRUMENT

QUICK GUIDE TO SUPERECTIFIERS

TYPE	1N4383GP thru 1N4586GP	1N5059GP thru 1N5062GP	AGP15-200 thru AGP15-800	GP15A thru GP15M	1N5391GP thru 1N5399GP	RGP15A* thru RGP15M*	GP20A thru GP20M	RGP20A* thru RGP20M*	1N5185GP thru 1N5190GP	RGP25A* thru RGP25M*	1N5624GP thru 1N5627GP	GP30A thru GP30M	RGP30A* thru RGP30M*
CASE	DO15	DO15	DO15	DO15	DO15	DO15	GP20	GP20	DO201AD	DO201AD	DO201AD	DO201AD	DO201AD
I_o (A)	1.0	1.0	1.5	1.5	1.5	1.5	2.0	2.0	3.0	2.5	3.0	3.0	3.0
@T_A (°C)	5	55	55	55	70	55	55	55	25	55	70	55	55
V_R = 50 (V)				GP15A	1N5391GP	RGP15A	GP20A	RGP20A	1N5185GP	RGP25A		GP30A	RGP30A
V_R = 100 (V)				GP15B	1N5392GP	RGP15B	GP20B	RGP20B	1N5186GP	RGP25B		GP30B	RGP30B
V_R = 200 (V)	1N4383GP	1N5059GP	AGP15-200	GP15D	1N5393GP	RGP15D	GP20D	RGP20D	1N5187GP	RGP25D	1N5624GP	GP30D	RGP30D
V_R = 300 (V)					1N5394GP								
V_R = 400 (V)	1N4384GP	1N5060GP	AGP15-400	GP15G	1N5395GP	RGP15G	GP20G	RGP20G	1N5190GP	RGP25G	1N5625GP	GP30G	RGP30G
V_R = 500 (V)					1N5396GP				1N5188GP				
V_R = 600 (V)	1N4385GP	1N5061GP	AGP15-600	GP15J	1N5397GP	RGP15J	GP20J	RGP20J	1N5189GP	RGP25J	1N5626GP	GP30J	RGP30J
V_R = 800 (V)	1N4585GP	1N5062GP	AGP15-800	GP15K	1N5398GP	RGP15K	GP20K	RGP20K		RGP25K	1N5627GP	GP30K	RGP30K
V_R = 1000 (V)	1N4586GP			GP15M	1N5399GP	RGP15M	GP20M	RGP20M		RGP25M		GP30M	RGP30M
V_R > 1000 (V)													
SURGE (A)	50	50	50	50	50	50	65	65	80	100	125	125	125
V_F (V)	1.2	1.2	1.2	1.1	1.4	1.3	1.1	1.3	1.1	1.3	1.0	1.1	1.3
Page	162	164	172	170	168	200	174	202	206	204	176	178	208

*Fast Recovery

GP02 SERIES

MINIATURE GLASS PASSIVATED JUNCTION RECTIFIER

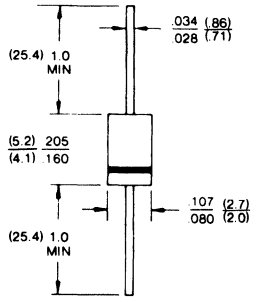
SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
2000 to 4000 Volts

CURRENT
250mA

DO-41



FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in DO41 package
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounces, 0.3 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GP02-20	GP02-25	GP02-30	GP02-35	GP02-40	UNITS
Maximum Recurrent Peak Reverse Voltage	2000	2500	3000	3500	4000	V
Maximum RMS Voltage	1400	1750	2100	2450	2800	V
Maximum DC Blocking Voltage	2000	2500	3000	3500	4000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	0.25					A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	15					A
Maximum Instantaneous Forward Voltage at 1.0A	3.0					V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 100°C	5.0 100					μA μA
Typical Junction Capacitance (Note 1)	3.0					pF
Typical Reverse Recovery Time (Note 2)	2.0					μs
Storage and Operating Temperature Range T_J, T_{STG}	-65 to +175					°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 Volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1.0A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
GP02 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

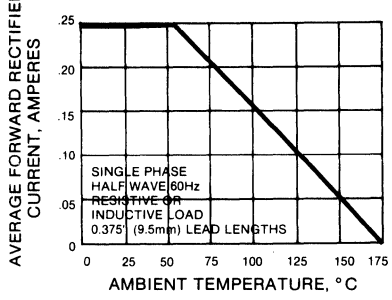


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

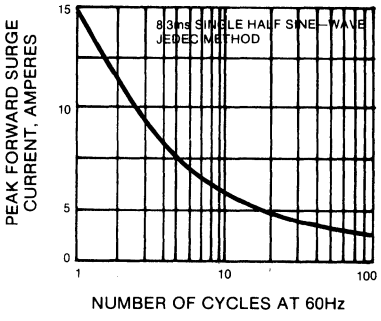


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

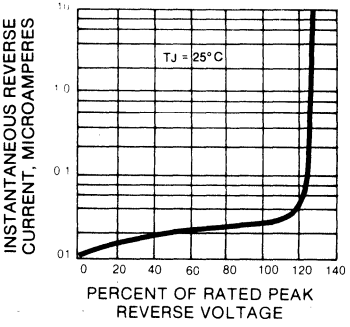


FIG. 4 — TYPICAL INSTANTANTEOUS FORWARD CHARACTERISTICS

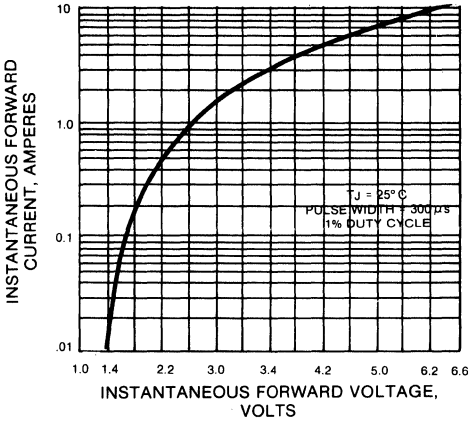


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

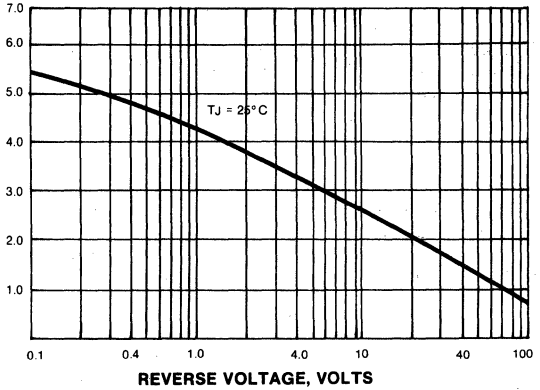
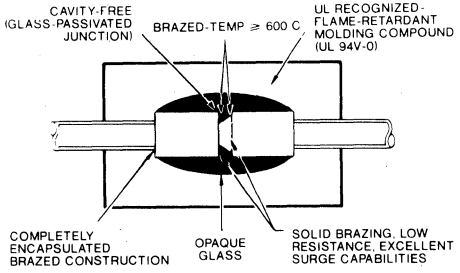


FIG. 6 — SUPERECTIFIER



1N3611GP THRU 1N3614GP & 1N3957GP

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 Volts
CURRENT
1.0 Ampere

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Glass passivated junction in a DO-41 package.
- 1 ampere operation at T_A = 75°C with no thermal runaway.
- Typical I_R less than 0.1 μA
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

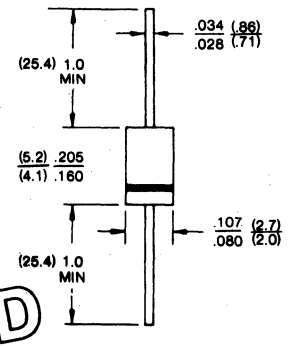
MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Colorband denotes cathode
Mounting Position: Any
Weight: 0.012 ounce, 0.3 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-41



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N3611GP	1N3612GP	1N3613GP	1N3614GP	1N3957GP	Units
Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
Maximum RMS Voltage	140	280	420	560	700	V
* Maximum DC Blocking Voltage	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", 9.5mm Lead Length at T_A = 75°C	1.0					A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30					A
Maximum Instantaneous Forward Voltage at 1.0A	1.0					V
Maximum DC Reverse Current at Rated DC Blocking Voltage	1.0					μA
* Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 150°C	300.0					μA
Typical Reverse Recovery Time (Note 1)	2.0					μs
Typical Junction Capacitance (Note 2)	10					pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175					°C

NOTES:
1-Reverse Recovery Conditions: IF = 0.5A, IR = 1.0A, Irr = 0.25A.
2-Measured at 1.0MHz and applied reverse voltage of 4.0VDC.
* JEDEC Registered Value

RATING AND CHARACTERISTIC CURVES
1N3611GP THRU 1N3614GP & 1N3957GP

FIG. 1 — FORWARD CURRENT DERATING CURVE

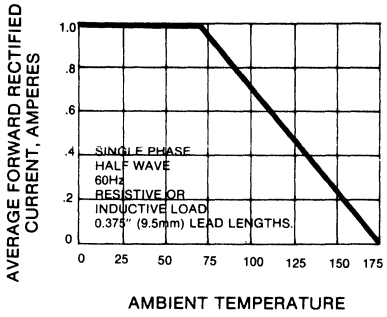


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

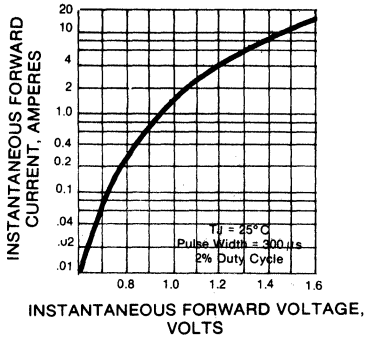


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

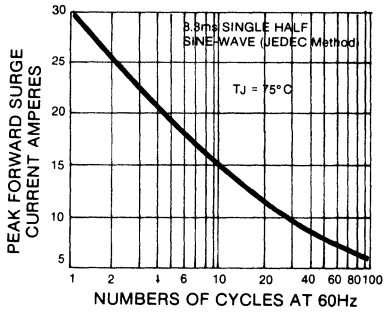


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

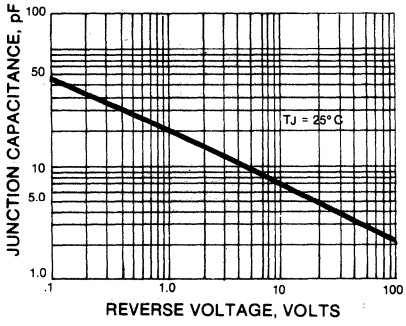


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS

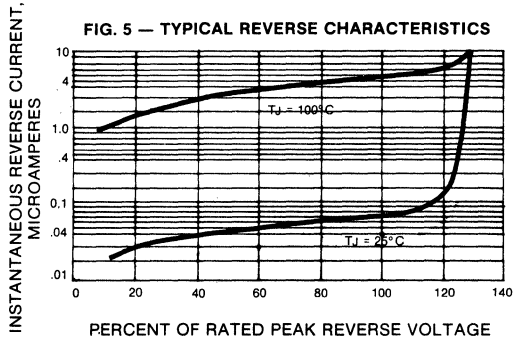
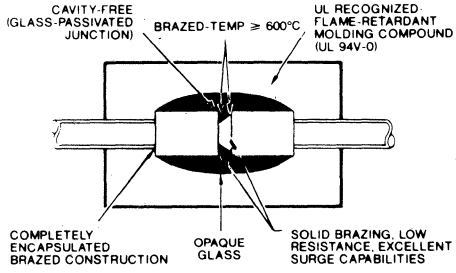


FIG. 6 — GI SUPERECTIFIER



1N4001GP THRU 1N4007GP

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 PRV

CURRENT
1.0 Ampere

FEATURES

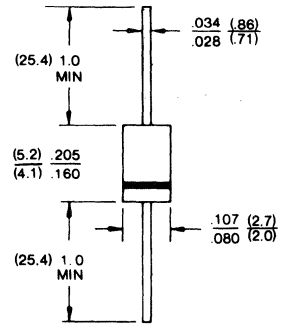
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0 utilizing General Instrument Proprietary 4B Flame Retardant Epoxy Molding Compound.
- Glass passivated junction version of 1N4001 thru 1N4007 in DO-41 package.
- 1 ampere operation at T_A = 75°C with no thermal runaway.
- Typical I_R less than 1 μA.
- Exceeds environmental standards of MIL-STD-19500

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: 0.015 ounces, .4 gram
Lead temperature for soldering: 350°C, .375 from case for 10 seconds at 5 lbs tension

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-41



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single-phase, half-wave, 60 Hz, resistive or inductive load.

	1N 4001GP	1N 4002GP	1N 4003GP	1N 4004GP	1N 4005GP	1N 4006GP	1N 4007GP	Units
*Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
*Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Forward Voltage at 1.0A	1.1					1.2		V
*Maximum Average Forward Rectified Current .375 Lead Length at T_A = 75°C	1.0							A
*Peak Forward Surge Current, I_{FM} (surge): 8.3 ms single half-sine-wave superimposed on rated load (JEDEC method)	30							A
*Maximum Full Load Reverse Current, Full Cycle Average at T_A = 75°C.	30							μA
*Maximum DC Reverse Current at T_A = 25°C Rated DC Blocking Voltage T_A = 125°C	5.0 50.0							μA μA
Typical Reverse Recovery Time (Note 1)	20							μs
Typical Junction Capacitance (Note 2)	15							pF
Typical Thermal Resistance θJA (Note 3)	50							°C/W
Operating and Storage Temperature Range	−65 to +175							°C

NOTES
1-Measured on Tektronix Type "S" recovery plug-in, Tektronix 545 Scope or equivalent I_{FM} = 20mA, I_{RM} = 1mA.
2-Measured at 1.0 MHz and applied reverse voltage of 4.0V_{DC}.
3-Thermal Resistance Junction to Ambient.
*JEDEC Registered Value.

RATING AND CHARACTERISTIC CURVES
SERIES 1N4000GP THRU 1N4007GP GLASS PASSIVATED RECTIFIER

Fig. 1—TYPICAL FORWARD CHARACTERISTICS

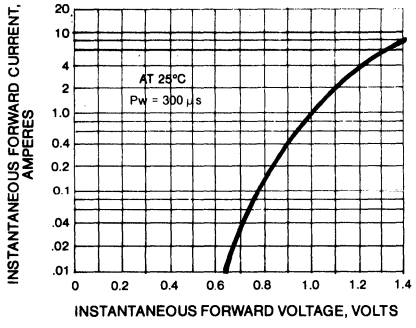


Fig. 2—JUNCTION CAPACITANCE

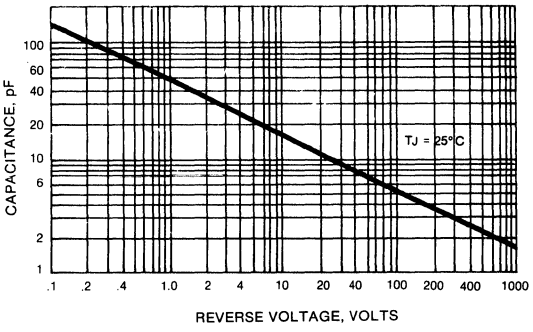


Fig. 3—PEAK FORWARD SURGE CURRENT

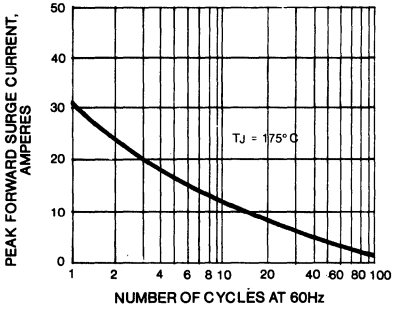


Fig. 4—PEAK FORWARD SURGE CURRENT

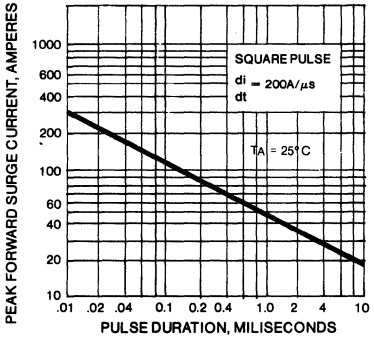
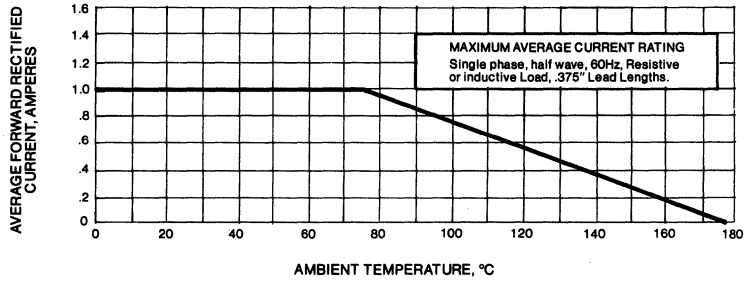


Fig. 5—FORWARD DERATING CURVE



1N4245GP thru 1N4249GP

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 PRV

CURRENT
1.0 Ampere

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0 utilizing General Instrument proprietary 4B Flame Retardant Epoxy Molding Compound.
- Glass passivated junction version of 1N4245 thru 1N4249 in DO41 package.
- 1 ampere operation at T_A = 55°C with no thermal runaway.
- Typical I_R less than 1 μA.
- Exceeds environmental standards of MIL-STD-19500/

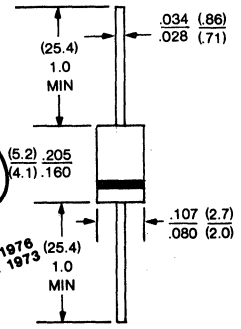
PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; Patent No. 3,930,306 of 1976 brazed-lead assembly by Patent No. 3,752,701 of 1973 and glass composition by Patent No.

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: 0.012 ounce, .3 gram

DO-41



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single-phase, half sine-wave, 60 Hz, resistive or inductive load.
*JEDEC registered values

	1N4245GP	1N4246GP	1N4247GP	1N4248GP	1N4249GP	UNITS
*Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
*Maximum RMS Voltage	140	280	420	560	700	V
*Maximum DC Blocking Voltage	200	400	600	800	1000	V
*Maximum Average Forward Rectified Current at 55°C T_A (Note 1)	1.0					A
*Peak Forward Surge Current, I_{FM} (surge): 8.3 ms single half sine-wave (Note 1) superimposed on rated load (JEDEC method)	25					A
*Maximum Forward Voltage, V_F at 1.0 A DC (Note 1)	1.2					V
Maximum Full Load Reverse Current, Full Cycle Average at 55°C T_A (Note 1)	50					μA
*Maximum Reverse Current at Rated DC Blocking Voltage at T_A 25°C	1.0					μA
at T_A 125°C	25					μA
*Operating Temperature Range	−65 to +160					°C
*Storage Temperature Range	−65 to +200					°C

NOTES:
1-Maximum lead lengths .375"

RATING AND CHARACTERISTIC CURVES
1N4245GP thru 1N4249GP

Fig. 1 – TYPICAL FORWARD CHARACTERISTICS

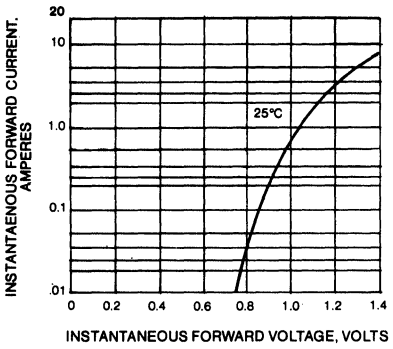


Fig. 2 – FORWARD DERATING CURVE

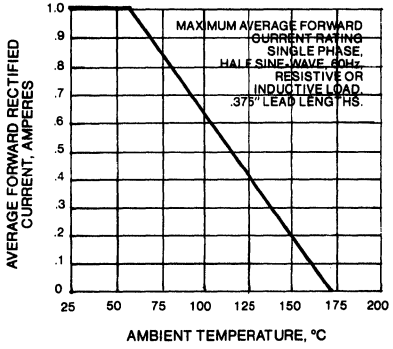


Fig. 3 – MAXIMUM OVERLOAD SURGE – CURRENT

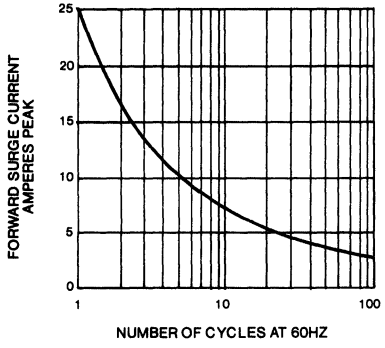


Fig. 4 – JUNCTION CAPACITANCE

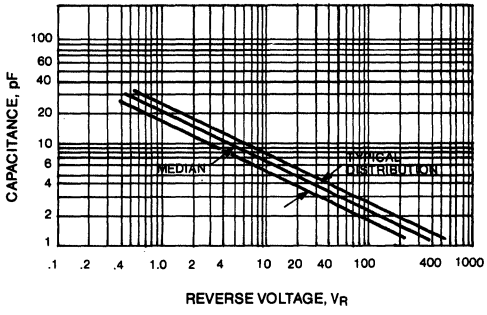
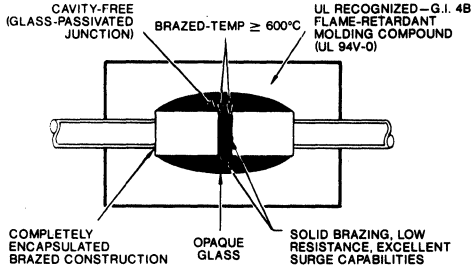


Fig. 5 – SUPERECTIFIER



GP10 SERIES

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1600 Volts
CURRENT
1.0 Ampere

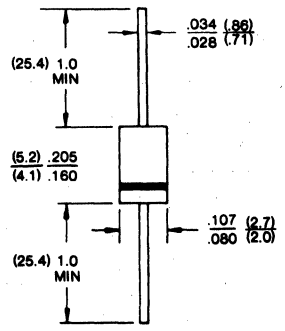
FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction in a DO-41 package.
- 1 Ampere operation at T_A = 55°C with no thermal runaway.
- Typical I_R less than 1 μA.
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed: 350°C/10 seconds/.375", (9.5mm) lead lengths/5 lbs., (2.3kg) tension.

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: 0.012 ounces 0.3 gram

DO-41



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

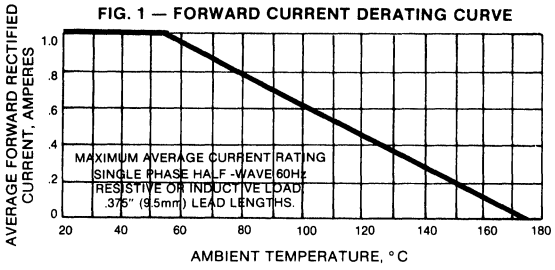
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	A	B	D	G	J	K	M	N	Q	T	V	W	Y	UNITS
Maximum Peak Reverse Voltage	50 to 1600 Volts, See Fig. 5													V
Maximum Average Forward Current .375", 9.5mm Lead Lengths at T_A = 55°C	1.0													A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30							25						A
Maximum Instantaneous Voltage at 1.0A	1.1					1.2				1.3				V
Maximum Full Load Reverse Current, Full Cycle Average .375", (9.5mm) Lead Lengths at T_A = 75°C	30													μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 125°C	5.0 50.0													μA
Typical Reverse Recovery Time (Note 1)	2.0													μs
Typical Junction Capacitance (Note 2)	8.0					7.0				5.0				pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175													°C

NOTES:
1. Measured on I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A.
2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 Volts.

RATING AND CHARACTERISTIC CURVES
GP10 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE



FGI. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

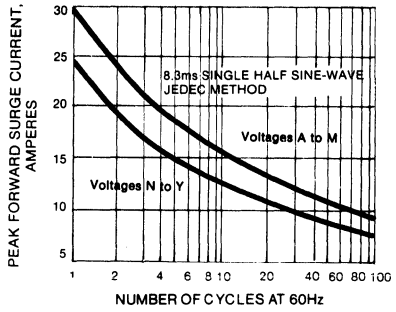


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

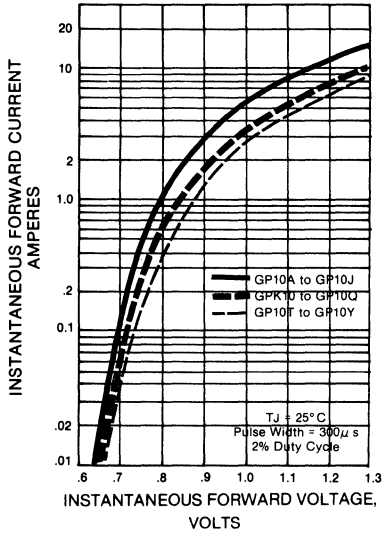


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

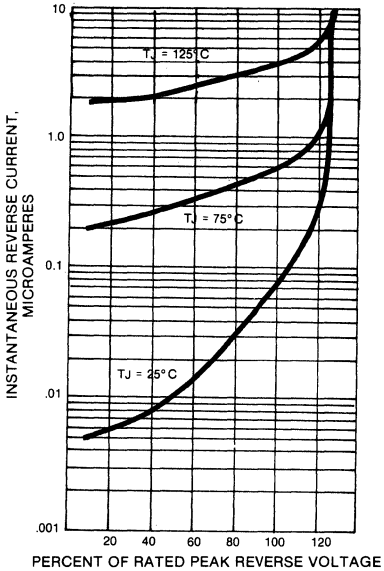
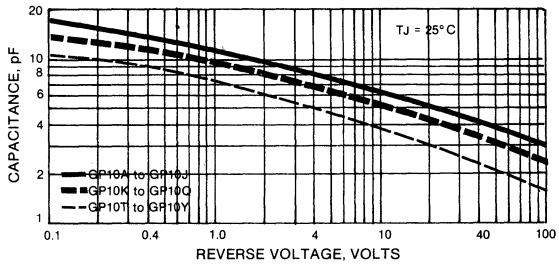


Fig. 5 —MAXIMUM RECURRENT PEAK REVERSE VOLTAGE

GP10A - 50V
GP10B - 100V
GP10D - 200V
GP10G - 400V
GP10J - 600V
GP10K - 800V
GP10M - 1000V
GP10N - 1100V
GP10Q - 1200V
GP10T - 1300V
GP10V - 1400V
GP10W - 1500V
GP10Y - 1600V

FIG. 6 — TYPICAL JUNCTION CAPACITANCE



1N4383GP thru 1N4385GP
1N4585GP and 1N4586GP

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 Volts

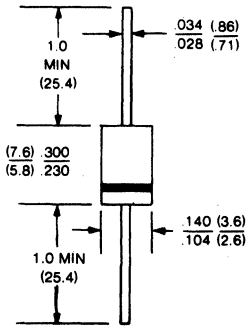
CURRENT
1.0 Ampere

FEATURES
- High temperature metallurgically bonded — no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 1 amperes operation at T_A = 100°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- Glass passivated junction in DO-15 package
- High temperature soldering guaranteed: 350°C, .375", (9.5mm) lead lengths/10 seconds at 5 lbs., (2.3kg) tension

MECHANICAL DATA
Case: JEDEC DO15 molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: 0.015 ounce, .4 gram

PATENTED
Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; Patent No. 3,930,306 of 1976 brazed-lead assembly to Patent No. 3,752,701 of 1973 and glass composition by

DO-15



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N4383GP	1N4384GP	1N4385GP	1N4585GP	1N4586GP	UNITS
* Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
Maximum RMS Voltage	140	280	420	560	700	V
* Maximum DC Blocking Voltage	200	400	600	800	1000	V
* Maximum Average Forward Rectified Current .375", 9.5mm Lead Length at T_A = 100°C	1.0					A
* Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	50					A
Maximum Instantaneous Forward Voltage at 1.0A	1.0					V
* Maximum Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 150°C	5.0 250					μA
Typical Junction Capacitance (Note 1)	25					pF
Typical Reverse Recovery Time (Note 2)	2					μs
* Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175					°C

NOTES:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC.
2. Measured with IF = .5A, IR = 1A, Irr = .25A.
* JEDEC Registered Value.

RATING AND CHARACTERISTIC CURVES
1N4383GP THRU 1N4385GP
1N4585GP and 1N4586GP

FIG. 1 — TYPICAL FORWARD CHARACTERISTICS

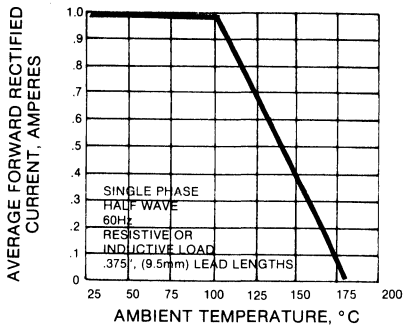


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

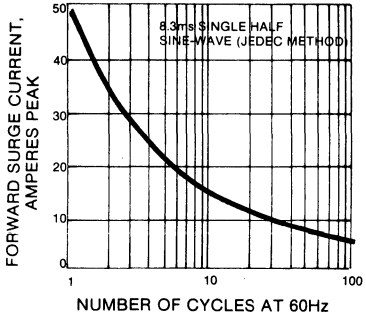


FIG. 3 — FORWARD DERATING CURVE

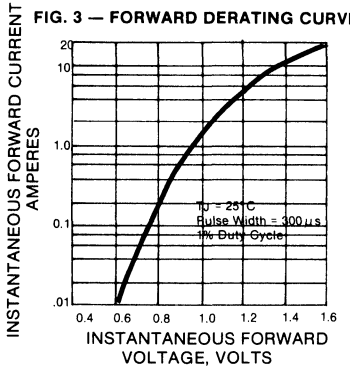


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

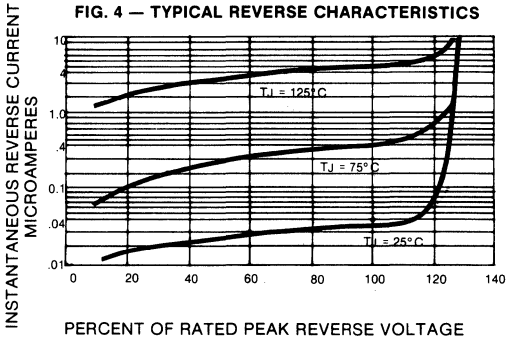


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

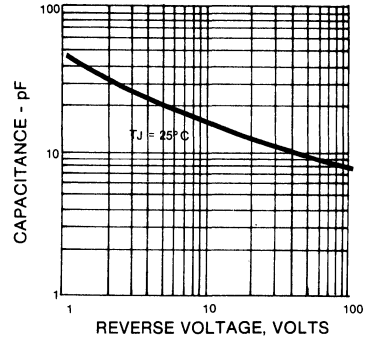
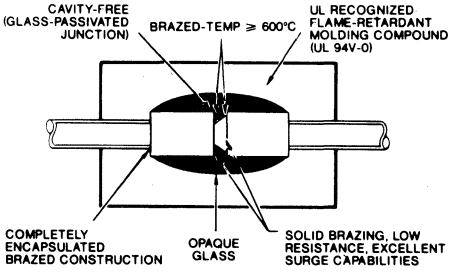


FIG. 6 — SUPERECTIFIER



1N5059GP thru 1N5062GP

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0 utilizing General Instrument proprietary 4B Flame Retardant Epoxy Molding Compound.
- Glass passivated junction version of 1N5059 thru 1N5062 in DO-15 package.
- 1 ampere operation at T_A = 75°C with no thermal runaway
- Typical I_R less than 1 μA.
- Exceeds environmental standards of MIL-STD-19500/228.

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: 0.015 ounce, .4 gram
Lead temperature for soldering: 350°C, .375" from case for 10 seconds at 5 lbs tension

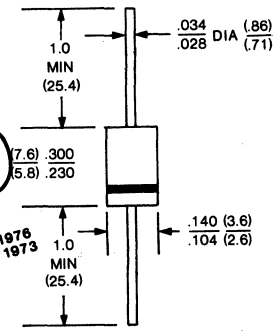
PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

VOLTAGE RANGE
200 to 800 Volts PRV

CURRENT
1.0 Ampere

DO-15



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single-phase, half-wave, 60 Hz, resistive or inductive load.
*-JEDEC registered values

	1N5059GP	1N5060GP	1N5061GP	1N5062GP	UNITS
Maximum Recurrent Peak Reverse Voltage	200	400	600	800	V
Maximum RMS Voltage	140	280	420	560	V
*Maximum DC Blocking Voltage at 150°C	200	400	600	800	V
*Maximum Average Forward Rectified Current at 75°C T_A (Note 1)	1.0				A
*Peak Forward Surge Current, I_{FM} (surge): 8.3 ms Single Half Sine-wave (note 1) Superimposed on Rated Load (JEDEC Method)	50				A
*Maximum Forward Voltage V_F at 1.0A DC, 75°C T_A	1.2				V
*Maximum Full Load Reverse Current, Full Cycle Average at (Note 1) at T_A 25°C	5.0	5.0	5.0	5.0	μA
at T_A 75°C	150	150	100	100	
*Maximum Reverse Current at Rated DC Blocking Voltage at T_A 25°C	5.0	5.0	5.0	5.0	μA
at T_A 175°C	300	300	200	200	
*Operating and Storage Temperature	−65 to +175				°C

NOTES:
1-Maximum lead lengths .375"

RATING AND CHARACTERISTIC CURVES
1N5059GP thru 1N5062GP

Fig. 1—TYPICAL FORWARD CHARACTERISTICS

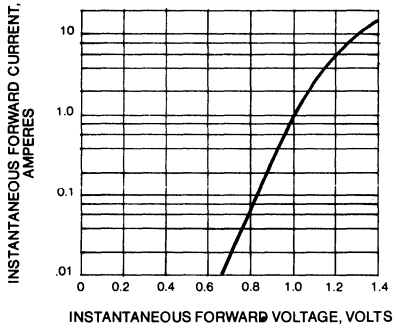


Fig. 2—FORWARD DERATING CURVE

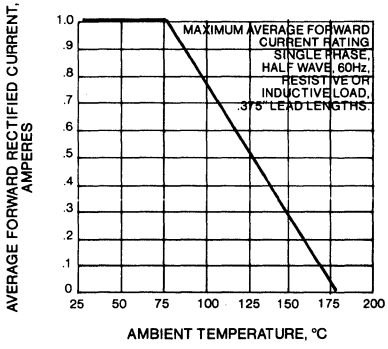


Fig. 3—MAXIMUM OVERLOAD SURGE CURRENT

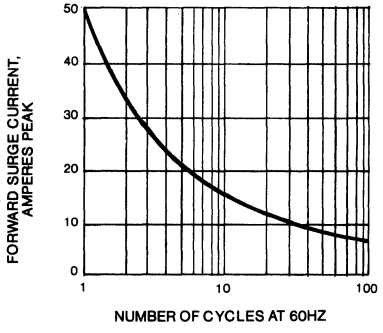


Fig. 4—JUNCTION CAPACITANCE

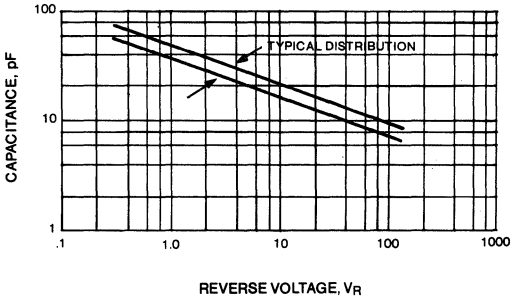
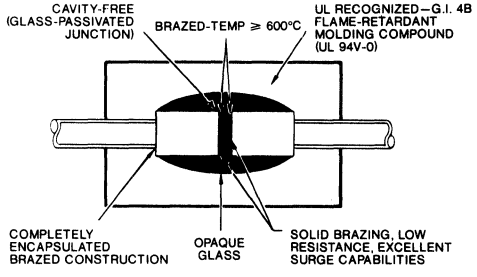


Fig. 5—SUPERECTIFIER



1N5614GP THRU 1N5622GP

MINIATURE GLASS PASSIVATED JUNCTION MEDIUM-SWITCHING RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

- High temperature metallurgically bonded — no compression contacts as found in diode-constructed rectifiers.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- 1.0 Ampere operation at T_A = 55° C with no thermal runaway
- Typical I_R less than 0.1 μ A
- Exceeds environmental standards of MIL-STD-19500
- Medium switching for high efficiency
- High temperature soldering guaranteed 350° C/ 10 seconds/.375" (9.5mm) lead length at 5 lbs., (2.3kg) tension

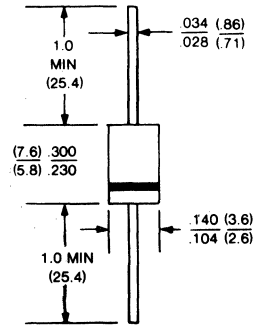
MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.015 ounce, 0.4 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; Patent No. 3,930,306 of 1976 brazed-lead assembly by Patent No. 3,752,701 of 1973 and glass composition by Patent No.

DO-15



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capactivie load, derate current by 20%.

	1N5614GP	1N5616GP	1N5618GP	1N5620GP	1N5622GP	UNITS
*Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
Maximum RMS Voltage	140	280	420	560	700	V
*Maximum DC Blocking Voltage	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	1.0					A
*Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50.0					A
Maximum Instantaneous Forward Voltage at 1.0A	1.2					V
*Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 100°C	0.5 25.0					μA μA
*Maximum Reverse Recovery Time (Note 1)	2.0					μs
Typical Junction Capacitance (Note 2)	45	35	25	20	15	pF
*Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175					°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

*JEDEC Registered Value.

RATING AND CHARACTERISTIC CURVES
1N5614GP THRU 1N5622GP SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

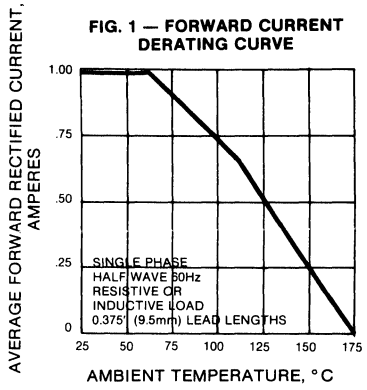


FIG. 2 — MAXIMUN NON-REPETITIVE PEAK FORWARD SURGE CURRENT

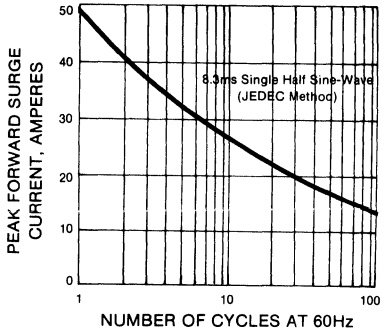


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

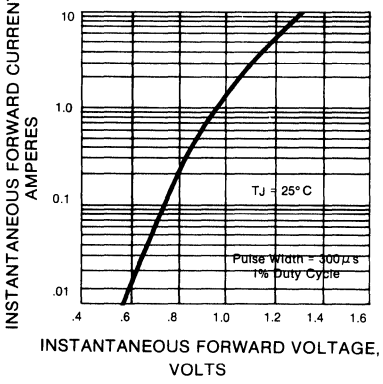


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

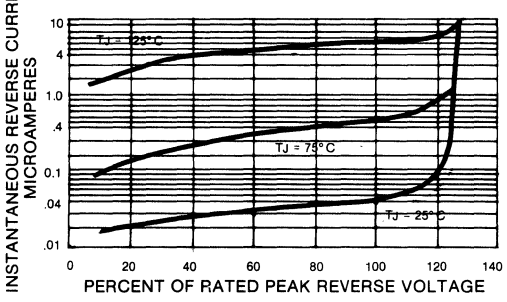


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

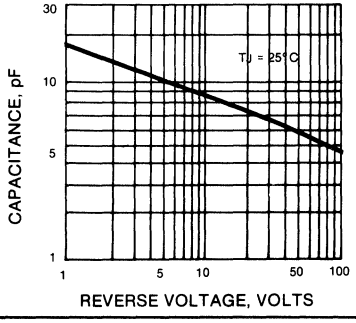
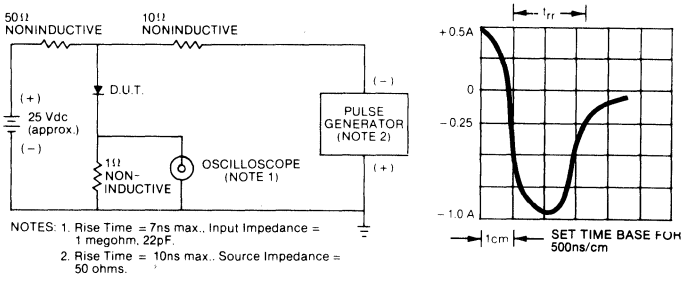


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



1N5391GP THRU 1N5399GP

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts
CURRENT
1.5 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 1.5 Ampere operation at T_A = 70°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 350°C/ 10 seconds/.375", (9.5mm) lead lengths at 5 lbs., (2.3 kg) tension

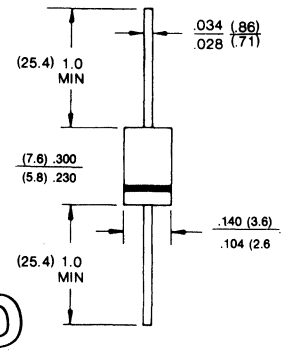
MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: 0.015 ounces, .4 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-15



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5391GP	1N5392GP	1N5393GP	1N5394GP	1N5395GP	1N5396GP	1N5397GP	1N5398GP	1N5399GP	UNITS
* Maximum Recurrent Peak Reverse Voltage	50	100	200	300	400	500	600	800	1000	V
Maximum RMS Voltage	35	70	140	210	280	350	420	560	700	V
* Maximum DC Blocking Voltage	50	100	200	300	400	500	600	800	1000	V
* Maximum Average Forward Rectified Current .375", 9.5mm Lead Length at T_A = 70°C	1.5									A
* Peak Forward Surge Current 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	50									A
* Maximum Forward Voltage at 1.5A, T_A = 70°C	1.4									V
* Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 100°C	5.0 300									μA
* Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length at T_A = 70°C	300									μA
Typical Junction Capacitance (Note 1)	25									pF
Typical Reverse Recovery Time (Note 2)	2									μs
* Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175									°C

NOTES
1-Measured at 1.0MHz and applied reverse voltage of 4.0VDC.
2-Measured with IF = .5A, IR = 1A, Irr = .25A.
* JEDEC Registered Value.

RATING AND CHARACTERISTIC CURVES
SERIES 1N5391GP THRU 1N5399GP

FIG. 1 — FORWARD CURRENT DERATING CURVE

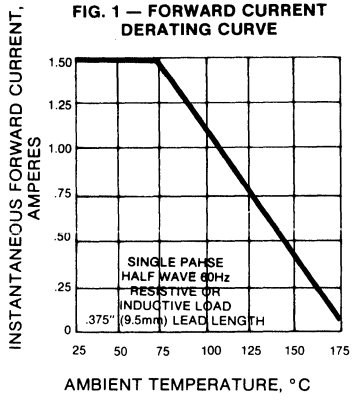


FIG. 2 — TYPICAL FORWARD CHARACTERISTICS

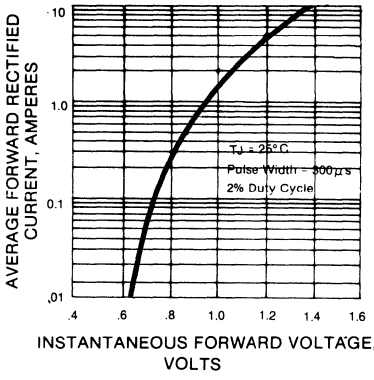


FIG. 3 — PEAK FORWARD SURGE CURRENT

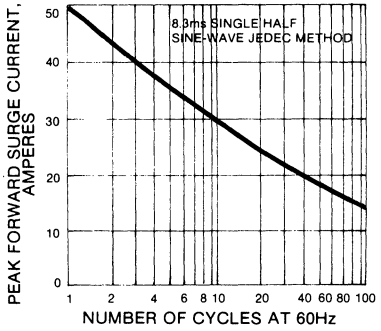


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

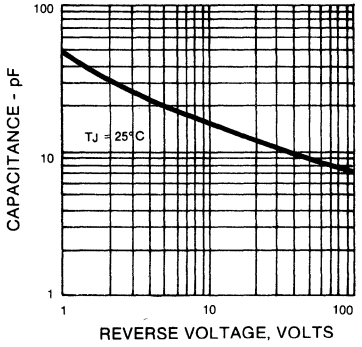


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS

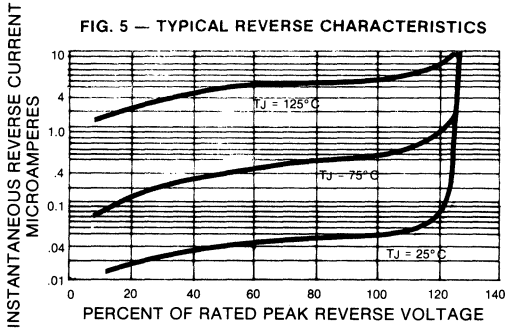
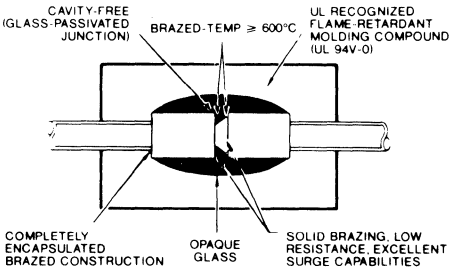


FIG. 6 - SUPERECTIFIER



GP15 SERIES

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

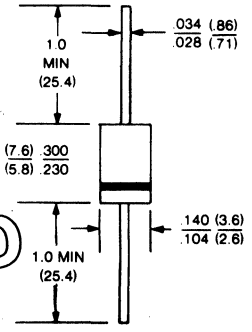
VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.5 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction in DO-15 package
- 1.5 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375", (9.5mm) lead length at 5 lbs., (2.3kg) tension

DO-15



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: 0.015 ounce, 0.4 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GP15A	GP15B	GP15D	GP15G	GP15J	GP15K	GP15M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", 9.5mm Lead Length at T_A = 55°C	1.5							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50							A
Maximum Instantaneous Forward Voltage at 1.5A	1.1							V
Maximum Reverse Current at Rated DC Blocking Voltage T_A = 25°C	5.0							μA
Maximum Full Load Reverse Current, Full Cycle Average, .375", 9.5mm Lead Length at T_A = 55°C	100							μA
Typical Junction Capacitance (Note 1)	25							pF
Typical Reverse Recovery Time (Note 2)	2.0							s
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC.
2. Measured with IF = .5A, IR = 1A, Irr = .25A.

RATING AND CHARACTERISTICS CURVES
GP15 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

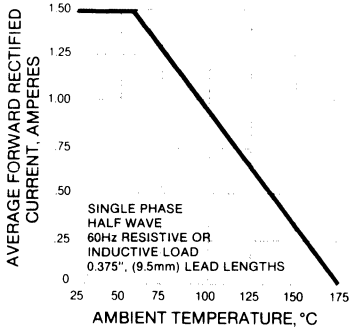


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

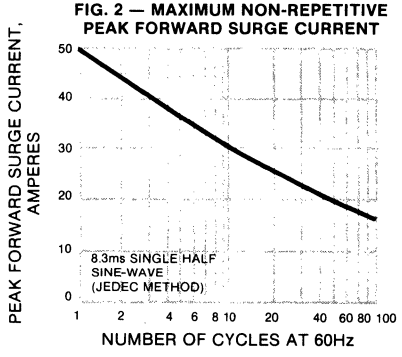


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

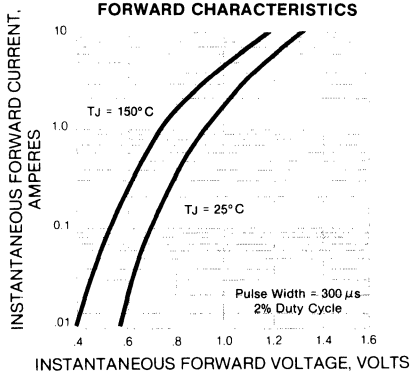


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

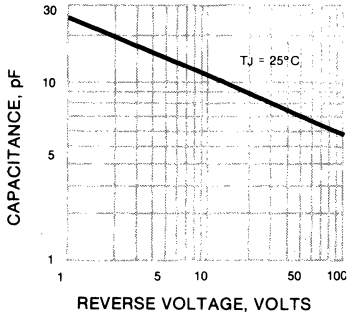


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS

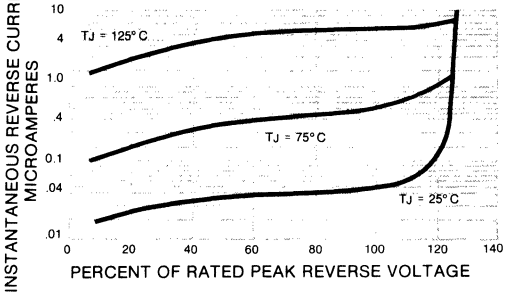
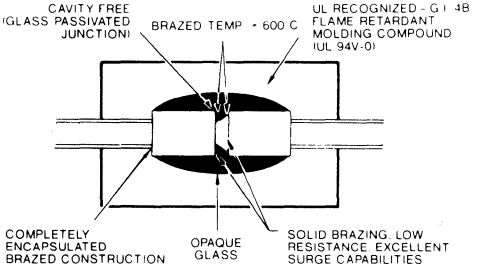


FIG. 6—SUPERECTIFIER



AGP15 SERIES

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC CONTROLLED AVALANCHE RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 800 Volts

CURRENT
1.5 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Controlled Avalanche characteristic combined with the ability to dissipate reverse power
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Glass passivated junction DO-15 package.
- 1.5 ampere operation at T_A = 55° C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High Temperature soldering Guaranteed 350° C/10 seconds/.375" (9.5mm) lead length at 5 lbs., (2.3kg) tension

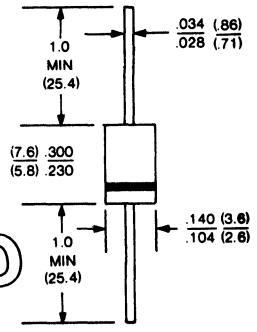
MECHANCIAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.0154 ounce, 0.4 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-15



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	AGP15 -200	AGP15 -400	AGP15 -600	AGP15 -800	UNITS
Maximum Recurrent Peak Reverse Voltage	200	400	600	800	V
Maximum RMS Voltage	140	280	420	560	V
Maximum DC Blocking Voltage	200	400	600	800	V
Minimum Avalanche Breakdown Voltage at 100 μA	240	450	675	880	V
Maximum Avalanche Breakdown Voltage at 100 μA	500	750	1000	1200	V
Maximum Peak Power Dissipation in the Avalanche Region 20 μs Pulse		500			W
Maximum Average Forward Rectified Current .375", (9.5mm) lead lengths at T_A = 55°C		1.5			A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)		50			A
Maximum Instantaneous Forward Voltage at 1.5A		1.1			V
Maximum Reverse Current at Rated DC Blocking Voltage		5.0			μA
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length at T_A = 55°C		100			μA
Typical Junction Capacitance (Note 1)		25			pF
Typical Reverse Recovery Time (Note 2)		2			μs
Storage and Operating Temperature Range, T_{STG}, T_J		-65 to +175			°C

NOTES:
1. Measured at 1MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: I_F + .5A, I_R = 1.0A, I_{rr} = .25A.

RATING AND CHARACTERISTIC CURVES
AGP15 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

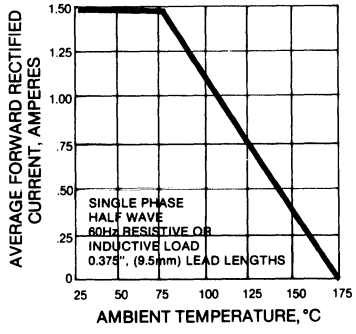


FIG. 2 — TYPICAL INSTANTEOUS FORWARD CHARACTERISTICS

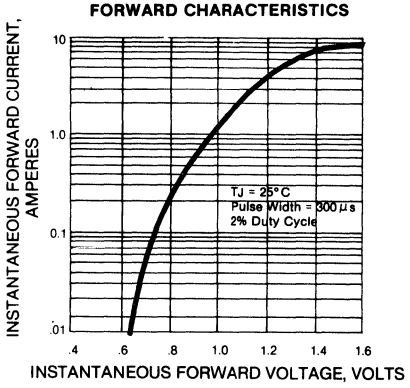


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

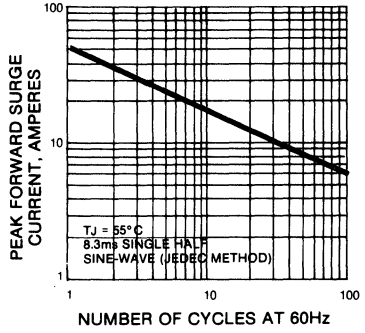


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

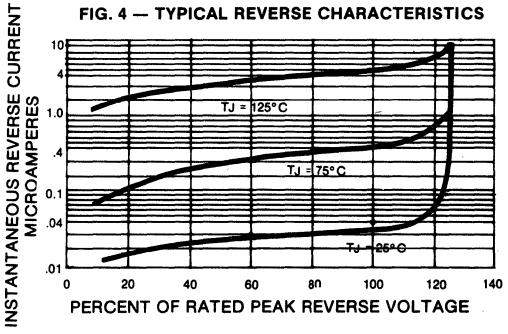


FIG. 5 — MAXIMUM NON-REPETITIVE REVERSE AVALANCHE POWER

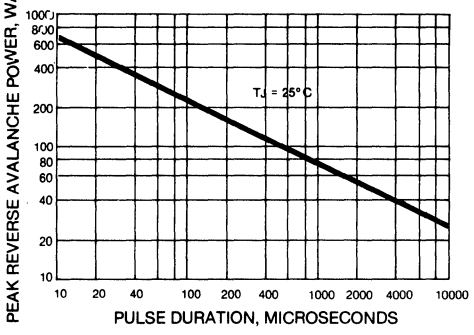
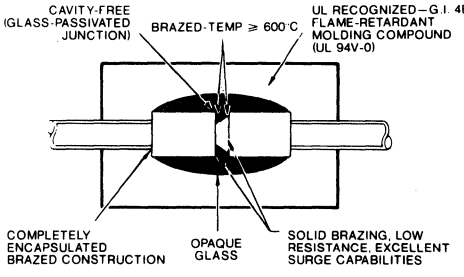


FIG. 6 — SUPERECTIFIER



GP20 SERIES

HIGH VOLTAGE GLASS PASSIVATED JUNCTION PLASTIC FAST SWITCHING RECTIFIER

SUPERECTIFIER

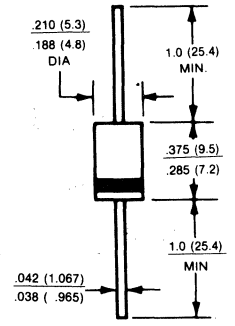
GENERAL INSTRUMENT

VOLTAGE
50 to 1000 Volts

CURRENT
2.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 2.0 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High Temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: 0.03 ounce, 0.8 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GP20A	GP20B	GP20D	GP20G	GP20J	GP20K	GP20M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	2.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	65							A
Maximum Instantaneous Forward Voltage at 2A	1.2		1.1					V
Maximum Reverse Current at Rated DC Blocking Voltage T_A = 25°C	5.0							μA
Maximum Full Load Reverse Current, Full Cycle Average, .375" (9.5mm) Lead Length T_A = 55°C	100							μA
Typical Junction Capacitanc (Note 2)	40							pF
Typical Reverse Recovery Time (Note 1)	2.5							μs
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured with IF = 5A, IR = 1A, Irr = .25A.
2. Measured at 1.0 MHz and applied rverse voltage of 4.0VDC.

RATING AND CHARACTERISTIC CURVES
GP20 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

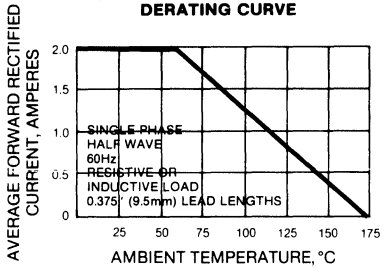


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

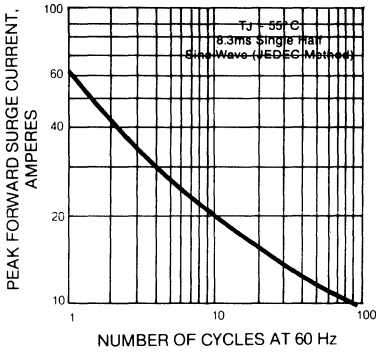


FIG. 3 — TYPICAL JUNCTION CAPACITANCE

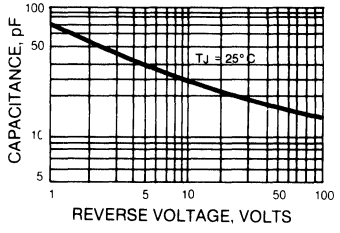


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

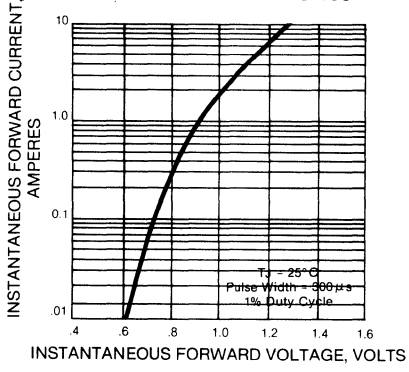


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS

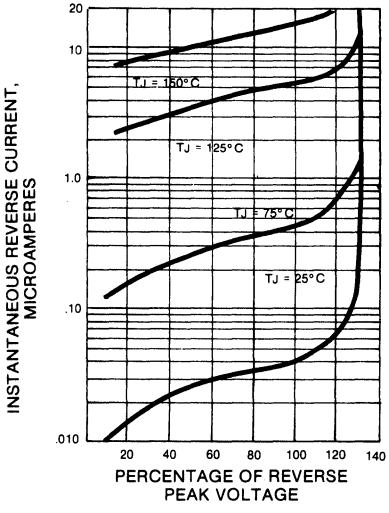
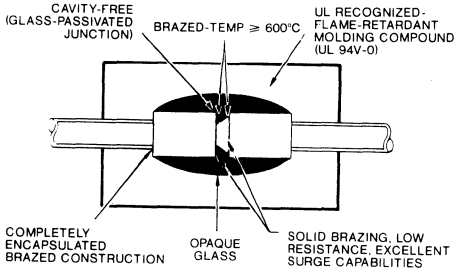


FIG. 6 — SUPERECTIFIER



1N5624GP THRU 1N5627GP

GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 800 Volts

CURRENT
3.0 Amperes

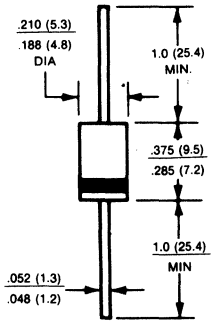
FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction in DO-201AD package
- 3.0 Ampere operation T_A = 70°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375", (9.5mm) lead lengths 5 lbs. (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: 0.04 ounce, 1.12 grams

DO-201AD



PATENTED

Brazed lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

		1N5624GP	1N5625GP	1N5626GP	1N5627GP	UNITS
* Maximum Recurent Peak Reverse Voltage		200	400	600	800	V
* Maximum DC Reverse Voltage		200	400	600	800	V
* Maximum Average Forward Rectified Current .375", (9.5mm) lead length at T_A = 70°C		3.0				A
* Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)		125				A
* Maximum Instantaneous Forward Voltage at 3A	T_A = 25°C	1.0				V
	T_A = 70°C	.95				
Maximum Reverse Current at Rated DC Reverse Voltage	* T_A = 25°C	5.0				μA
	T_A = 150°C	300		200		μA
Maximum Full Load Reverse Current, Full Cycle Average, .375" (9.5mm) Lead Lenth	T_A = 70°C	200				μA
Typical Junction Capacitance (Note 1)		60				pF
Typical Reverse Reovery Time (Note 1)		3				μs
Operating and Storage Temperature Range, T_J, T_{STG}		-65 to +175				°C

NOTES:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC.
2. Reverse Recovery Test Conditions: IF = 0.5A, IR = 1.0A, Irr = 0.25A
* JEDEC Registered Value

RATING AND CHARACTERISTIC CURVES
1N5624GP THRU 1N5627GP

FIG. 1 — FORWARD CURRENT DERATING CURVE

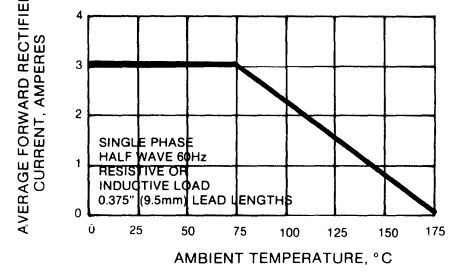


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK SURGE CURRENT

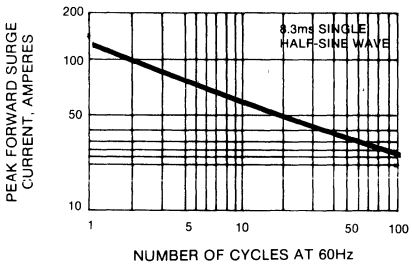


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

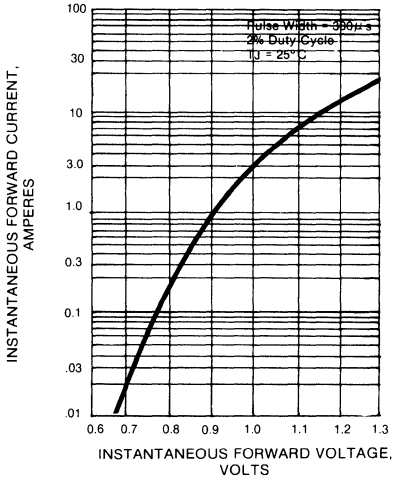


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

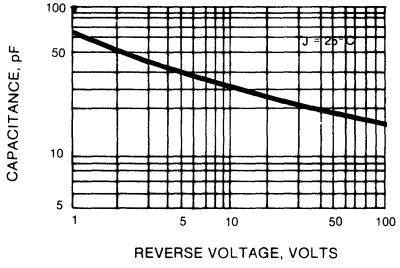


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS

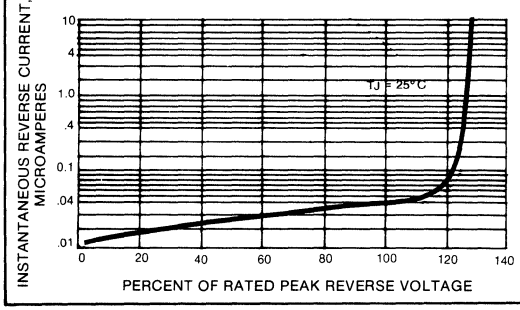
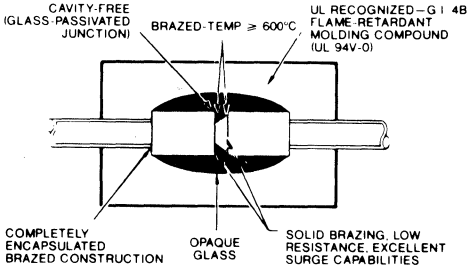


FIG. 6 — SUPERECTIFIER



GP30 SERIES

GLASS PASSIVATED SILICON JUNCTION PLASTIC RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
3.0 Amperes

FEATURES

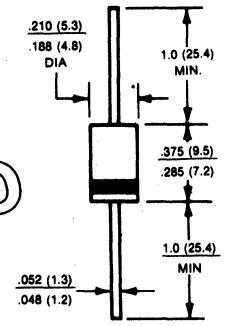
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction in DO-201AD package
- 3 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceedfs environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 350C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANCIAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Mounting Position: Any
Weight: 0.04 ounce, 1.12 grams

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GP30A	GP30B	GP30D	GP30G	GP30J	GP30K	GP30M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Current, .375" (9.5mm) Lead Length at T_A = 55°c	3.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125							A
Maximum Instantaneous Forward Voltage at 3.0A	1.2		1.1					V
Maximum Reverse Current at Rated DC Blocking Voltage	5.0							μA
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length T_A = 55°C	100							μA
Typical Junction Capacitance (Note 1)	20							pF
Typical Reverse Recovery Time (Note 2)	3.0							μs
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: I_F = .5, I_R = 1A, I_{rr} = .25A.

RATING AND CHARACTERISTIC CURVES
GP30 SERIES

FIG. 1—FORWARD CURRENT DERATING CURVE

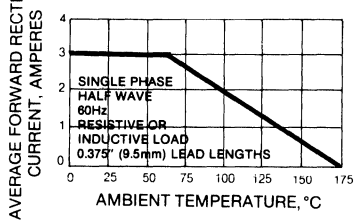


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

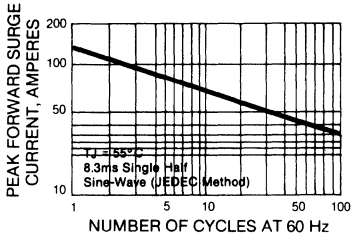


FIG. 3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

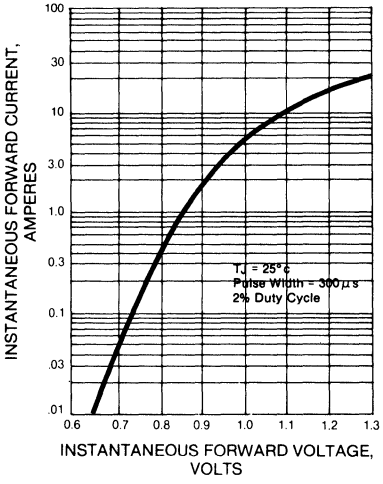


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

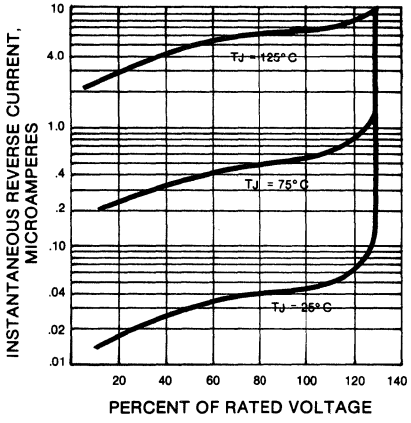


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

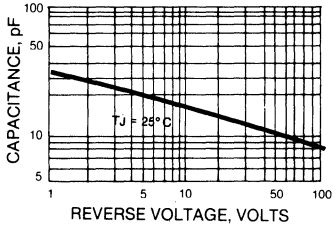
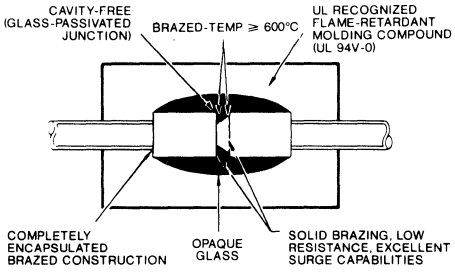


FIG. 6 — SUPERECTIFIER



GLASS PASSIVATED ZENER REGULATOR DIODE 1.5 WATT 100 TO 200 VOLTS

ZGP10-100 THRU ZGP10-200

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC ZENER REGULAR DIODE

SUPERECTIFIER

GENERAL INSTRUMENT

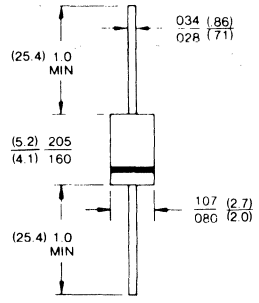
VOLTAGE RANGE
100-200 Volts

POWER RATING
1.5 Watts

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low zener imepdance
- Excellent clamping capability
- Glass passivated junction in DO-41 package
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

DO-41



MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounce, 0.3 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

OPERATING AND STORAGE TEMPERATURE T_J, T_{STG} -65°C to +175°C

Type	Zener Breakdown Voltage at 5mA		Maximum Zener Dynamic Impedance				Maximum Reverse Current at Measurement Voltage, V_R			Maximum Forward Voltage at 0.5A	Maximum Continuous Regulator Current*
	MIN - MAX		I_{ZT}	Z_{ZT}	I_{ZK}	Z_{ZK}	V_R	25°C	100°C	V_F	I_{ZM}
	Volts		mA	Ohms	mA	Ohms	Volts	μA	μA	Volts	mA
ZGP10-100	80	120	5	500	.25	5000	60	0.5	100	1.0	10
ZGP10-110	88	132	5	600	.25	5000	70	0.5	100	1.0	9.1
ZGP10-120	96	144	5	700	.25	5000	80	0.5	100	1.0	8.3
ZGP10-130	104	156	5	800	.25	5000	90	0.5	100	1.0	7.7
ZGP10-140	112	168	5	900	.25	5000	100	0.5	100	1.0	7.1
ZGP10-150	120	180	5	1000	.25	5000	110	0.5	100	1.0	6.6
ZGP10-160	140	170	5	1100	.25	5000	120	0.5	100	1.0	6.3
ZGP10-170	136	204	5	1200	.25	5000	130	0.5	100	1.0	5.9
ZGP10-180	144	216	5	1300	.25	5000	140	0.5	100	1.0	5.6
ZGP10-190	152	228	5	1400	.25	5000	150	0.5	100	1.0	5.3
ZGP10-200	160	240	5	1500	.25	5000	160	0.5	100	1.0	5.0

Standard ±20%, Suffix A ±10%, Suffix B ±5%.
*Temperature rating at specified regulator current is T_L = 30°C.
**Maximum continuous power dissipation at T_L = 75°C lead length .375", 9.5mm is 1.5 Watts.

RATING AND CHARACTERISTIC CURVES
ZGP10-100 THRU ZGP10-200

FIG. 1 — MAXIMUM CONTINUOUS POWER DISSIPATION

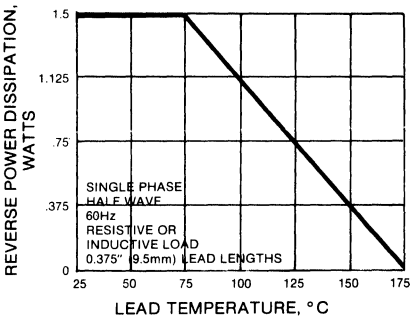


FIG. 2 — TYPICAL ZENER IMPEDANCE

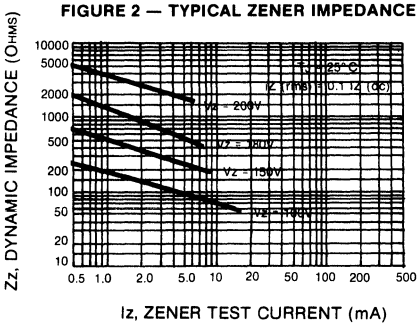


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

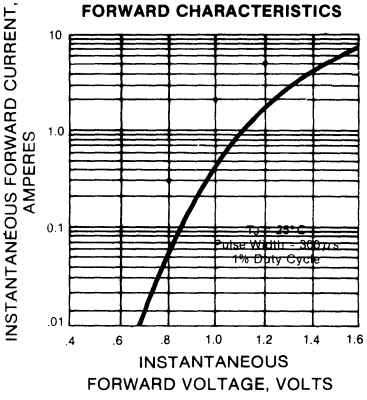


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

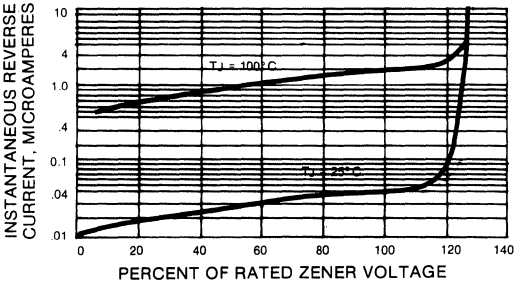


FIG. 5 — TYPICAL TEMPERATURE COEFFICIENTS

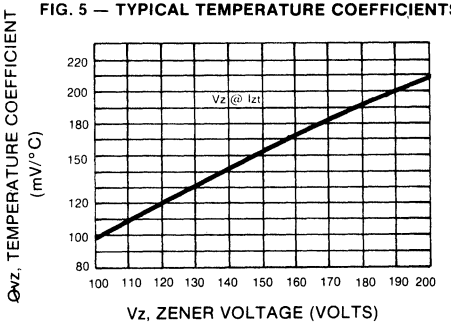
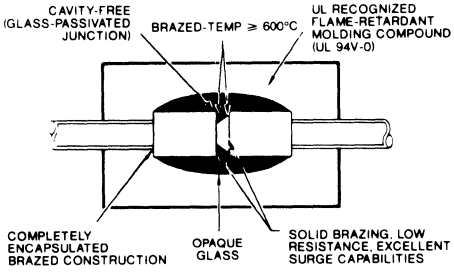


FIG. 6 — SUPERECTIFIER



FAST-RECOVERY GLASS PASSIVATED 0.1 AMPERE TO 3.0 AMPERES 50 VOLTS TO 2000 VOLTS

PHOTOFLASH RECTIFIER — RGP01 SERIES

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC FAST SWITCHING RECTIFIER

SUPERECTIFIER®

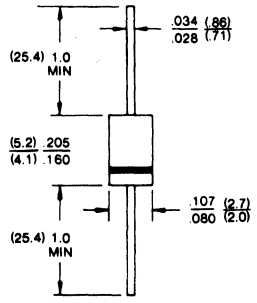
GENERAL INSTRUMENT

VOLTAGE
1000 to 2000 Volts

CURRENT
100 Milliamperes

FEATURES
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- For use in high frequency rectifier curcuits
- Plastic package has Underwritiers Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Glass passivated junction in DO-41 package
- 100 millampere operation at T_A = 55° C with no thermal runaway
- Typical I_R less than 1μ A
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 350° c/10 seconds/.375" (9.5mm) lead lengths/5 lbs., (2.3kg) tension

DO-41



Dimensions in inches and (millimeters)

MECHANICAL DATA
Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounce, .3 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RGP01-10	RGP01-12	RGP01-14	RGP01-16	RGP01-18	RGP01-20	UNITS
Maximum Recurrent Peak Reverse Voltage	1000	1200	1400	1600	1800	2000	V
Maximum RMS Voltage	700	840	980	1120	1260	1400	V
Maximum DC Blocking Voltage	1000	1200	1400	1600	1800	2000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Lengths at T_A = 55° C	100						mA
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	20						A
Maximum Instantaneous Forward Voltage at .10A	1.5						V
Maximum DC Reverse Current at rated DC Blocking Voltage	5.0						μA
Maximum Reverse Recovery Time (Note 1)	300						nS
Typical Junction Capacitance (Note 2)	15						pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175						°C

NOTES:
1. Reverse Recovery Test Conditions: IF = 0.5A, IR = 1.0A recover to 0.25A
2. Meassured at 1.0 MHz and applied reverse voltage of 4.0 VDC.

FIG. 1 — FORWARD CURRENT DERATING CURVE

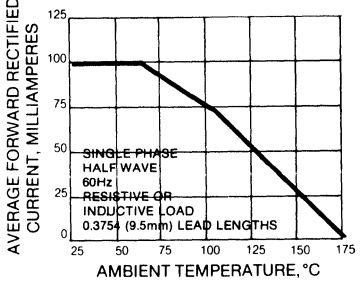


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

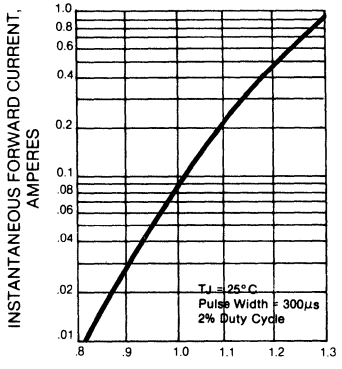


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

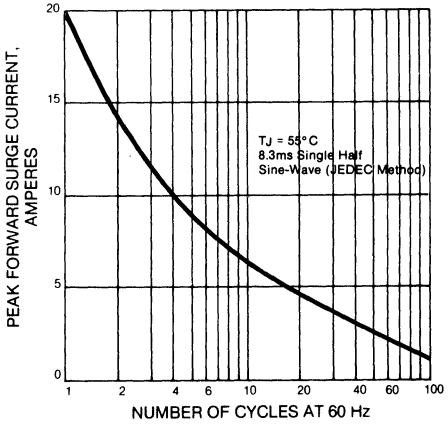


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

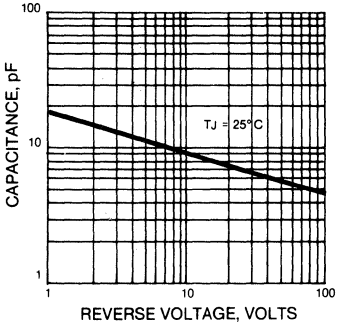
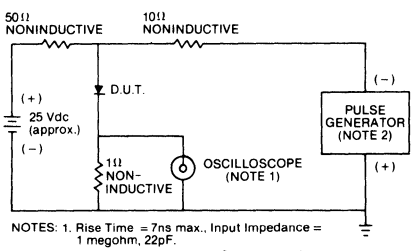


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC



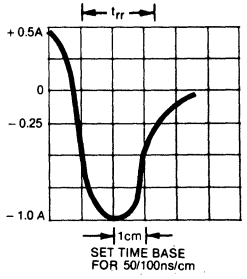
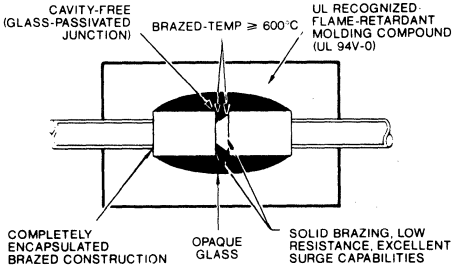


FIG. 6—SUPERECTIFIER



1N4933GP THRU 1N4937GP

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC FAST SWITCHING RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Fast switching for high efficiency
- Glass passivated junction in DO-41 package
- 1 ampere operation at T_A = 75°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3 kg) tension

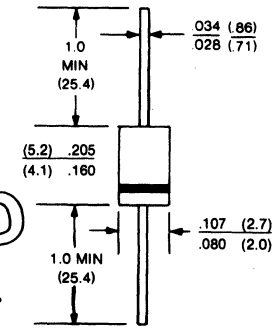
MECHANICAL DATA

Case: JEDEC DO-41, molded case
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounce, 0.34 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; Patent No. 3,930,306 of 1976 brazed-lead assembly to Patent No. 3,752,701 of 1973 and glass composition by

DO-41



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N4933GP	1N4934GP	1N4935GP	1N4936GP	1N4937GP	UNITS
* Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	V
* Maximum RMS Voltage	35	70	140	280	420	V
* Maximum DC Blocking Voltage	50	100	200	400	600	V
* Maximum Full Load Reverse Current, Full Cycle Average .375", 9.5mm lead lengths at T_A = 55°C	1.0					A
* Peak Forward Surge Current 8.3 ms single half sine-wave at T_A = 75°C superimposed on rated load (JEDEC method)	30					A
* Maximum Instantaneous Forward Voltage at 1.0A	1.2					V
* Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 100°C	5.0 100					μA
* Maximum Reverse Recovery Time (Note 1)	200					ns
Typical Junction Capacitance (Note 2)	15					pF
* Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175					°C

NOTES:
1. Reverse Recovery Test Conditions: I_F = 1.0A, V_r = 30 Volts.
* JEDEC Registered Values.
2. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
* JEDEC registered values.

RATING AND CHARACTERISTIC CURVES
1N4933GP THRU 1N4937GP SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

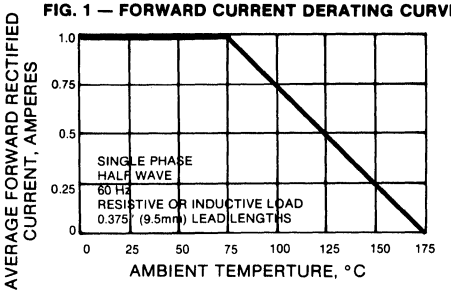


FIG. 2 — TYPICAL FORWARD CHARACTERISTICS

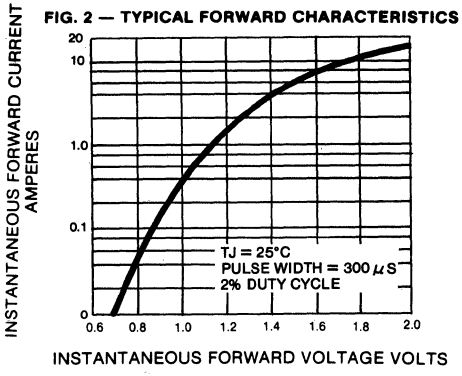


FIG. 3 — TYPICAL JUNCTION CAPACITANCE

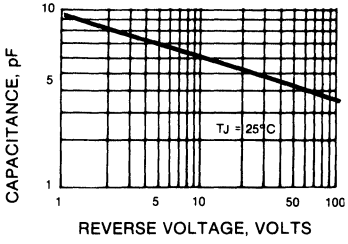


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

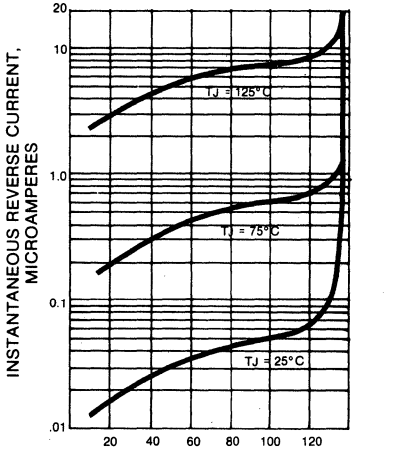
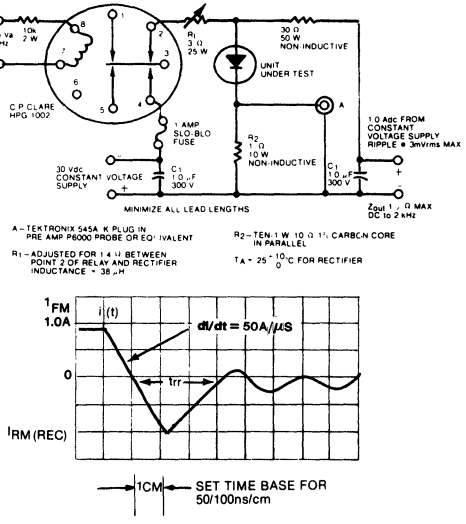
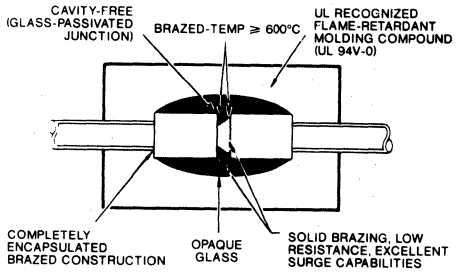


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC





1N4942GP THRU 1N4948GP

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC FAST SWITCHING RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 Volts

CURRENT
1.0 Ampere

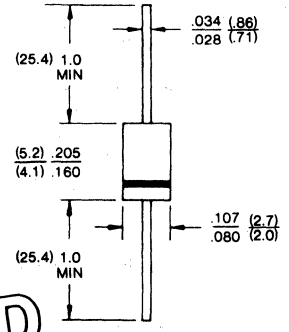
FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Glass passivated junction in DO-41 package
- 1 Ampere operation at T_A = 55°C with no thermal runaway
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- High temperature soldering guaranteed 350°C/ 10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3 kg) tension

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounce 0.3 gram

DO-41



PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N4942GP	1N4944GP	1N4946GP	1N4947GP	1N4948GP	UNITS
* Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
Maximum RMS Voltage	140	280	420	560	700	V
* Maximum DC Blocking Voltage	200	400	600	800	1000	V
* Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	1.0					A
* Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	25.0					A
* Maximum Instantaneous Forward Voltage at 1.0A	1.3					V
* Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 150°C	1.0 200					μA μA
* Maximum Reverse Recovery Time (Note 1)	150	150	250	250	500	ns
Typical Junction Capacitance (Note 2)	15					pF
* Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175					°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .05A, IR = 1.0A, Irr = 0.25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
* JEDEC registered values.

RATING AND CHARACTERISTIC CURVES
1N4942GP THRU 1N4948GP

FIG. 1 — FORWARD CURRENT DERATING CURVE

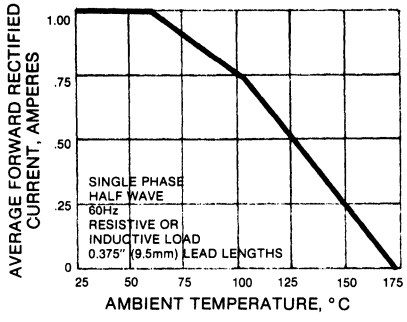


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK SURGE CURRENT

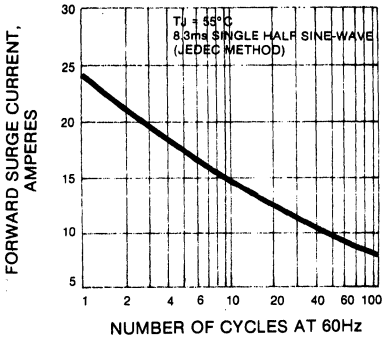


FIG. 3 — TYPICAL INSTANTEOUS FORWARD CHARACTERISTICS

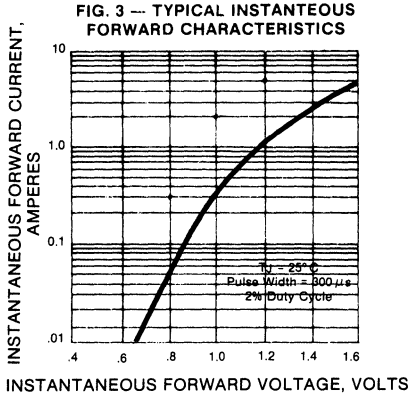


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

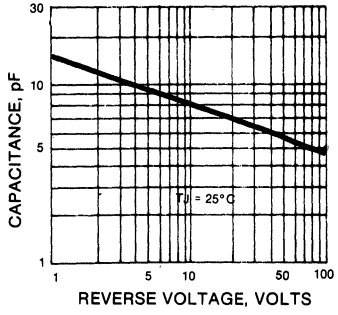


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

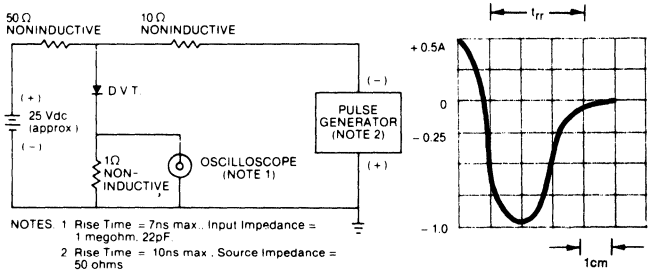
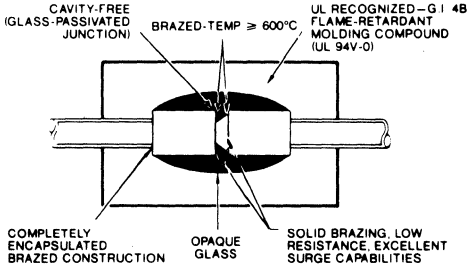


FIG. 6 — SUPERECTIFIER



RGP10 SERIES

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC FAST SWITCHING RECTIFIER

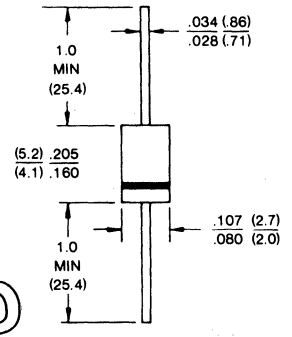
SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.0 Ampere

DO-41



Dimensions in inches and (millimeters)

FEATURES
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Fast switching for high efficiency
- Glass passivated junction in DO-41 package
- 1 ampere operation at T_A = 55° C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350° C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounce, 0.3 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

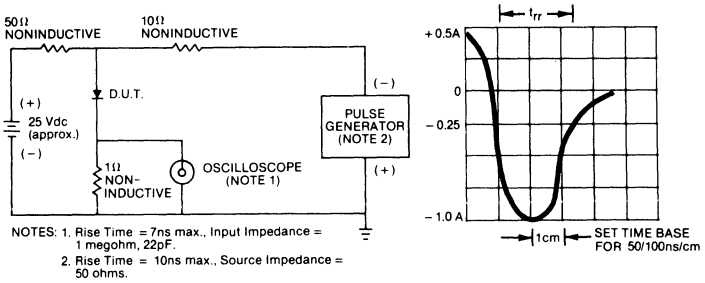
Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RGP10A	RGP10B	RGP10D	RGP10G	RGP10J	RGP10K	RGP10M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55° C	1.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30							A
Maximum Instantaneous Forward Voltage at 1.0A	1.3							V
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length T_A = 55° C	100							μA
Maximum DC Reverse Current, at Rated DC Blocking Voltage T_A = 25° C	5.0							μA
Maximum Reverse Recovry Time (Note 1)	150	150	150	150	250	500	500	ns
Typical Junction Capacitance (Note 2)	15							pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.

RATING AND CHARACTERISTIC CURVES
RGP10 SERIES

FIG. 1— REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2—TYPICAL JUNCTION CAPACITANCE

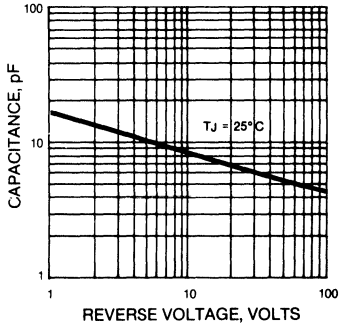


FIG. 3— FORWARD CURRENT DERATING CURVE

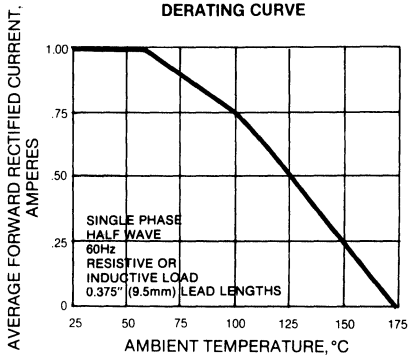


FIG. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

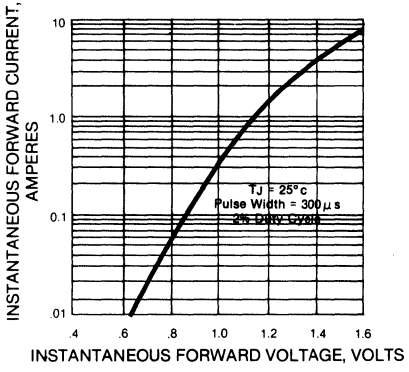


FIG. 5 — MAXIMUM NON-REPETITIVE SURGE CURRENT

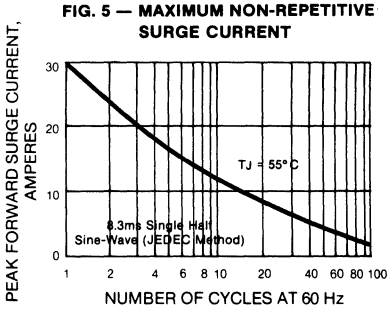
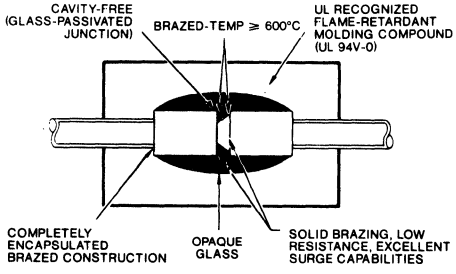


FIG. 6—SUPERECTIFIER



1N5615GP THRU 1N5623GP

MINIATURE GLASS PASSIVATED JUNCTION FAST-SWITCHING RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction
- 1 amperes operation at T_A = 55°C with no thermal runaway.
- Typical I_R less than 0.5 μA.
- Exceeds environmental standards of MIL-STD-19500.
- Fast switching for high efficiency
- High temperature soldering guaranteed 350°C/ 10 seconds/.375", (9.5mm) lead length at 5 lbs. (11 kg) tension

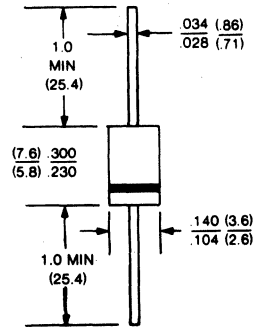
PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; Patent No. 3,930,306 of 1976 brazed-lead assembly by Patent No. 3,752,701 of 1973 and glass composition by Patent No.

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Methode 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.015 ounces, .4 gram

DO-15



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5615GP	1N5617GP	1N5619GP	1N5621GP	1N5623GP	UNITS
*Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
Maximum RMS Voltage	140	280	420	560	700	V
*Maximum DC Blocking Voltage	200	400	600	800	1000	V
*Maximum Average Forward Rectified Current .375" (9.5mm) Lead Length at T_A = 55°C	1.0					A
*Peak Foward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	50.0					A
Maximum Forward Voltage at 1.0A	1.2					V
Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 100°C	0.5 25.0					μA μA
*Maximum Reverse Recovery Time (Note 1)	150	150	250	300	500	ns
Typical Junction Capacitance (Note 2)	45	35	25	20	15	pF
*Operating and Storage Temperature Range	-65 to +175					°C

NOTES: 1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

* JEDEC Registered Value

RATING AND CHARACTERISTIC CURVES
1N5615GP THRU 1N5623GP SERIES

FIG. 1—REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

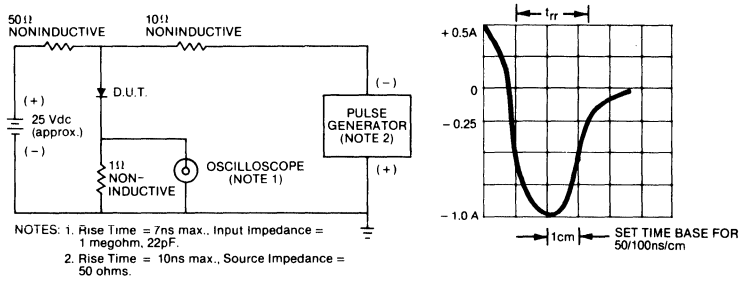


FIG. 1—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

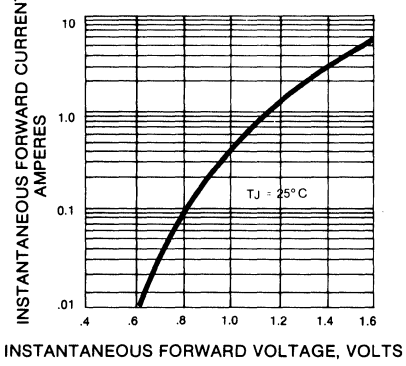


FIG. 3—FORWARD CURRENT DERATING CURVE

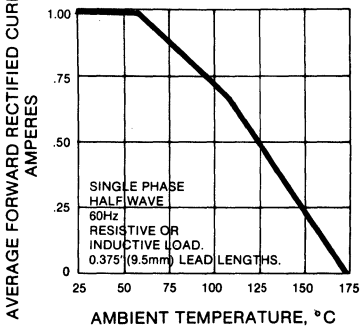


FIG. 4—TYPICAL JUNCTION CAPACITANCE

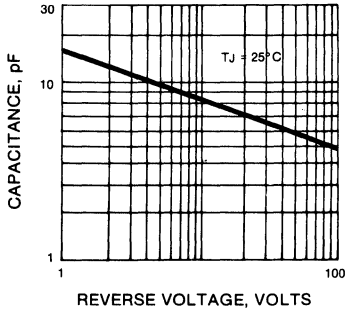
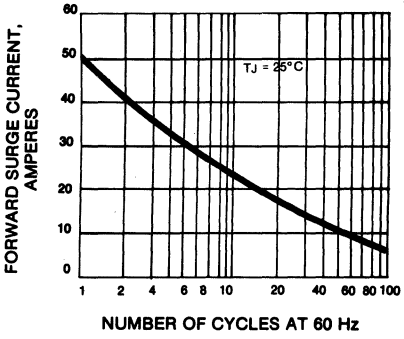


FIG. 5—PEAK FORWARD SURGE CURRENT



GI810 SERIES

MINIATURE GLASS PASSIVATED JUNCTION PLASTIC FAST SWITCHING RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

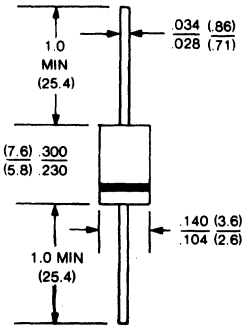
VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Glass passivated junction in a DO-15 package
- 1.0 ampere operation at T_A = 75°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

DO-15



MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.015 ounc, 0.4 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI810	GI811	GI812	GI814	GI816	GI817	GI818	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	350	560	700	V
Maximum Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 75°C	1.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load T_A = 75°C	30							A
Maximum Instantaneous Forward Voltage at 1.0A	1.1							V
Maximum Reverse Current, at Rated DC Blocking Voltage T_A = 25°C T_A = 100°C	10.0 100							μA μA
Maximum Reverse Recovery Time (Note 1)	750							ns
Maximum Reverse Recovery Current I_{RM}	3.0							A
Typical Junction Capacitance (Note 2)	25							pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured with I_F = 1.0A, V_r = 30V.
2. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.

RATING AND CHARACTERISTIC CURVES
G1 810 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

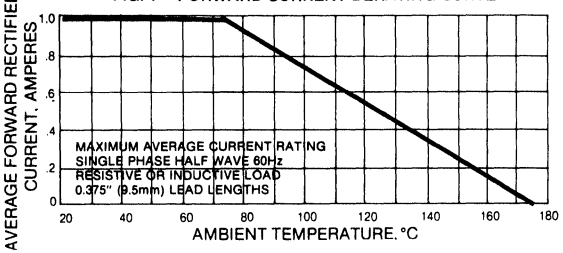


FIG. 3 — TYPICAL JUNCTION CAPACITANCE

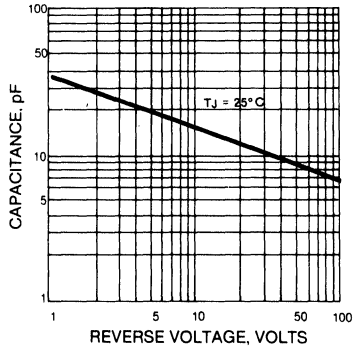
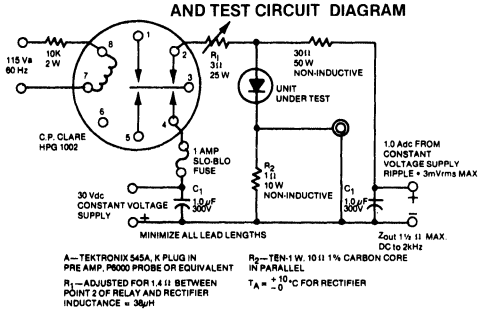


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



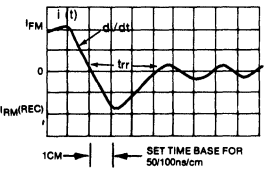


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

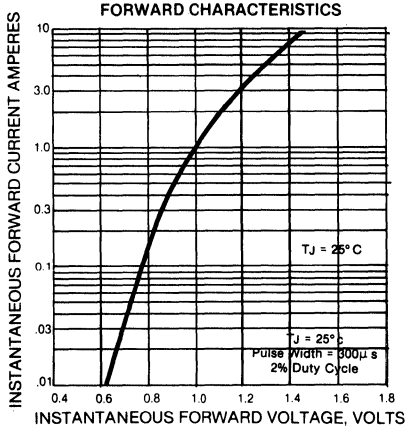


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

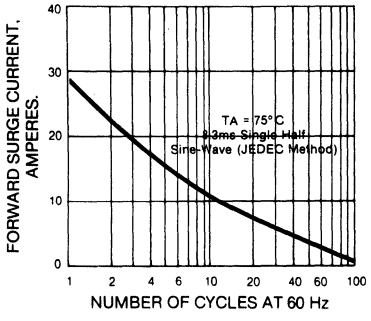
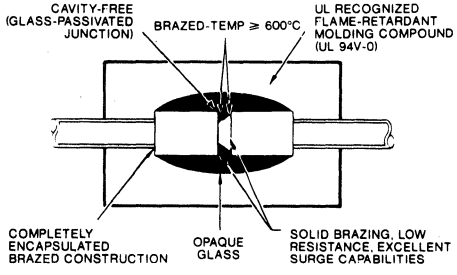


FIG. 6 — GI SUPERECTIFIER



RGP15-10 THRU RGP15-20

HIGH VOLTAGE FAST SWITCHING SNUBBER RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
1000 to 2000 Volts

CURRENT
1.0 Ampere

FEATURES

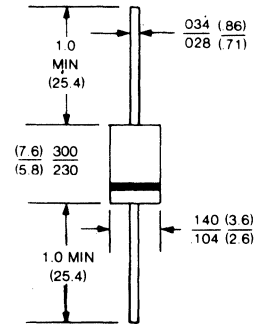
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- For use in very fast high voltage transient snubber applications
- Plastic package has Underwriters Laboratory Flammability Classfication 94V-0 utilizing General Instrument Proprietary 4B Flame Retardant Epoxy Molding Compound
- Glass passivated junction in DO15 package
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High Temperature soldering Guaranteed 350°C/10 seconds/.375" (9.5mm) lead length at 5 lbs., (2.3 kg) tension

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.015 ounces 0.4 gram

PATENTED
Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976, Patent No. 3,930,306 of 1976, brazed-lead assembly by Patent No. 3,752,701 of 1973 and glass composition by Patent

DO-15



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RGP15-10	RGP15-12	RGP15-14	RGP15-15	RGP15-16	RGP15-18	RGP15-20	UNITS
Maximum Recurrent Peak Reverse Voltage	1000	1200	1400	1500	1600	1800	2000	V
Maximum RMS Voltage	700	840	980	1050	1120	1260	1400	V
Maximum DC Blocking Voltage	1000	1200	1400	1500	1600	1800	2000	V
Maximum Average Forward Rectified Current .375", 9.5mm Lead Length See Fig. 2	1.0							A
Peak Forward Surge Current 8.3ms single half sine-wave imposed on rated load (JEDEC method)	15							A
Peak Reverse Avalanche Power 100 μS Square Wave Duty Cycle ≤2%	500							W
Maximum Forward Voltage at 1.0A	1.8				2.1			V
Maximum DC Reverse Current T_A = 25°C at rated DC Blocking Voltage T_A = 100°C	5.0 100							μA
Maximum Reverse Recovery Time (Note 2)	250							ns
Typical Junction Capacitance (Note 1)	11.0							pF
Operating and Storage Temperature Range T_J	-65 to +175							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1.0A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
RGP15-10 THRU RGP15-20

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

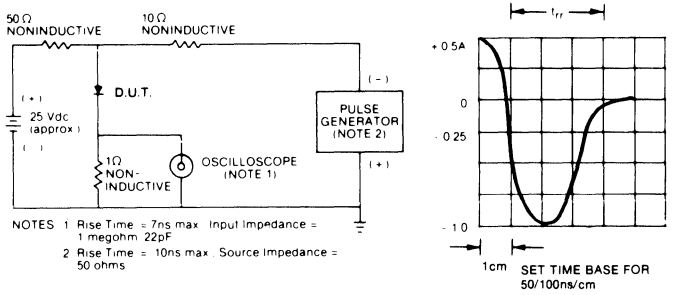


FIG. 2 — FORWARD CURRENT DERATING CURVE

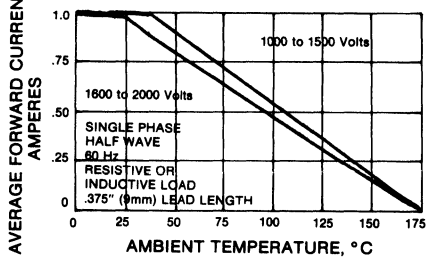


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

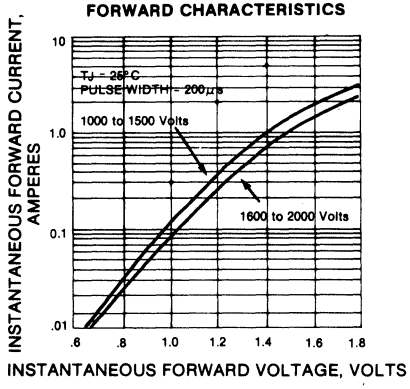


FIG. 4 — PEAK FORWARD SURGE CURRENT

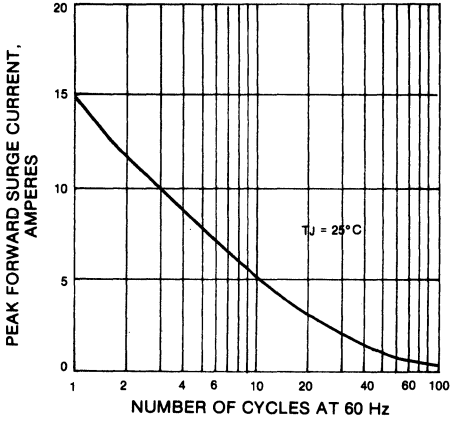


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

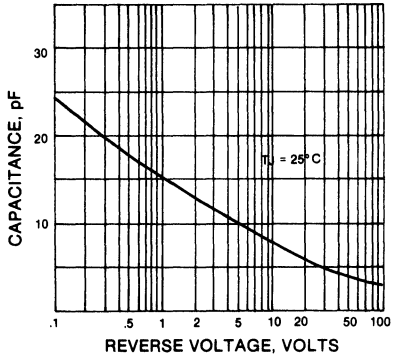
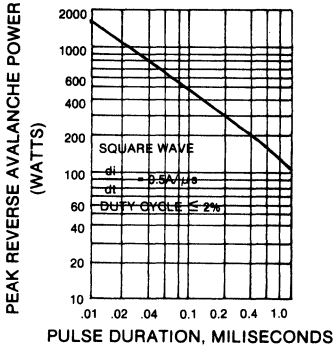


FIG. 4 — PEAK REVERSE AVALANCHE POWER



RGP15 SERIES

GLASS PASSIVATED JUNCTION PLASTIC FAST SWITCHING RECTIFIER

SUPERECTIFIER

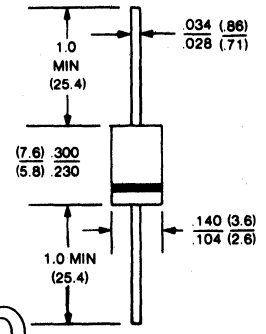
GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.5 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Glass passivated junction in DO-15 package
- 1.5 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension



Dimension in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.015 ounce, 0.4 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

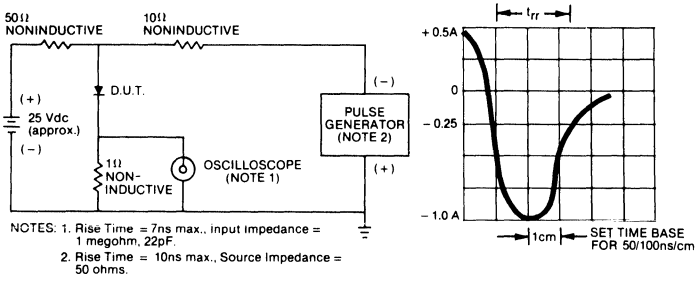
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RGP15A	RGP15B	RGP15D	RGP15G	RGP15J	RGP15K	RGP15M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	1.5							A
Peak Forward Surge Current 8.3ms sigle half sine-wave superimposed on rated load (JEDEC method)	50							A
Maximum Instantaneous Forward Voltage at 1.5A	1.3							V
Maximum DC Reverse Current, at Rated DC Blocking Voltage	5.0							μA
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length T_A = 55°C	100							μA
Typical Junction Capacitance (Note 1)	25							pF
Maximum Reverse Recovery Time (Note 2)	150	150	150	150	250	500	500	ns
Operating and Storage Temperature Range T_J, T_{STG}	-65 to + 175							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 Volts.
2. Reverse Recovery Test Conditions: If = .5A, IR = 1A, Irr = .25A.

FIG. 1— REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., input impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

FIG. 2—FORWARD CURRENT DERATING CURVE

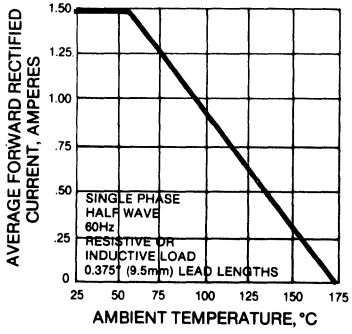


FIG. 3— TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

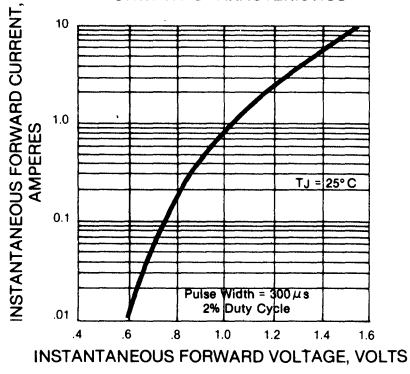


FIG. 4—TYPICAL JUNCTION CAPACITANCE

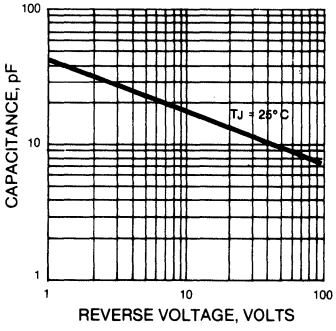


FIG. 5 — MAXIMUM NON-REPETITIVE SURGE CURRENT

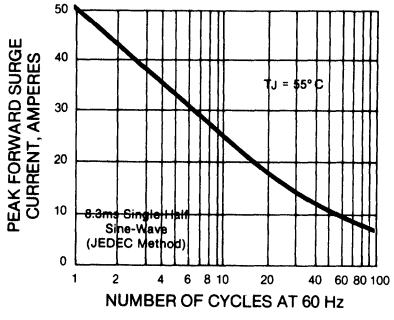
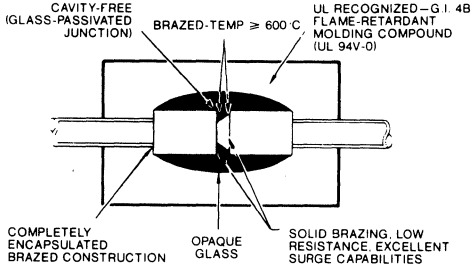


FIG. 6—SUPERECTIFIER



RGP20 SERIES

GLASS PASSIVATED JUNCTION PLASTIC FAST SWITCHING RECTIFIER

SUPERECTIFIER

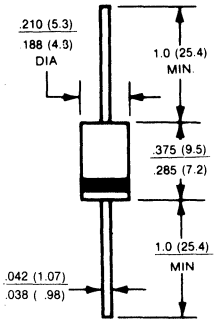
GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
2.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction in molded plastic package
- 2.0 ampere operation at T_A = 55°C with no thermal runaway
- Fast switching for high efficiency
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension



MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: 0.03 ounce, 0.8 gram

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

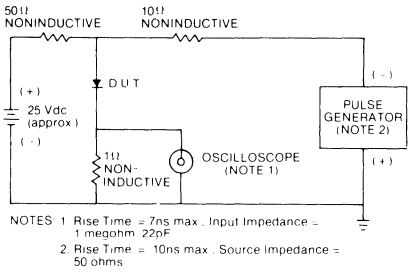
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RGP20A	RGP20B	RGP20D	RGP20G	RGP20J	RGP20K	RGP20M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	2.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	65							A
Maximum Instantaneous Forward Voltage at 2.0A	1.3							V
Maximum Reverse Current, T_A = 25°C at Rated DC Blocking Voltage T_A = 100°C	5.0 100							μA μA
Maximum Full Load Reverse Current, full Cycle Average, .375", (9.5mm) Lead Length T_A = 55°C	100							μA
Typical Junction Capacitance (Note 1)	35							pF
Maximum Reverse Recovery Time (Note 2)	150				250	500		ns
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF
2. Rise Time = 10ns max., Source Impedance = 50 ohms

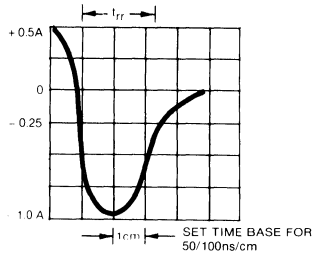


FIG. 2 — FORWARD CURRENT DERATING CURVE

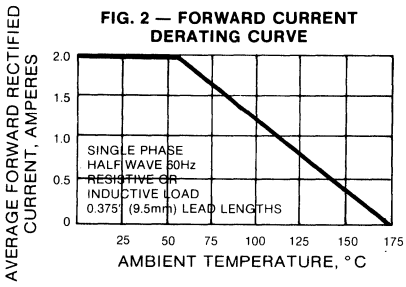


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

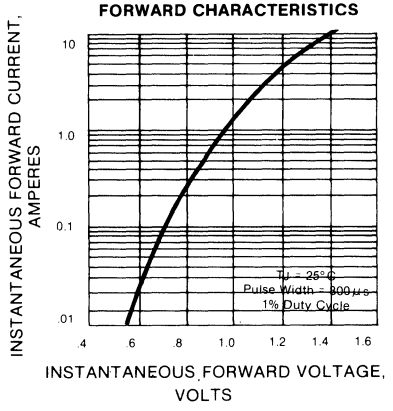


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

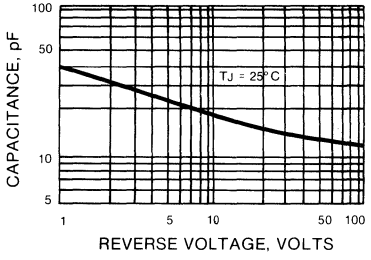


FIG. 5 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

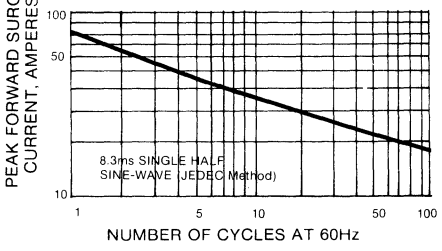
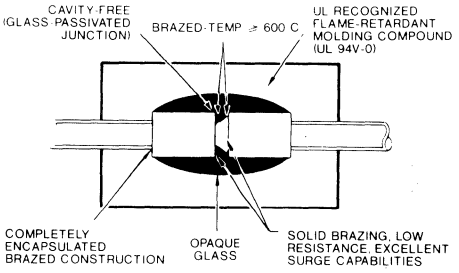


FIG. 6 — SUPERECTIFIER



RGP25 SERIES

GLASS PASSIVATED JUNCTION PLASTIC FAST-SWITCHING RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
2.5 Amperes

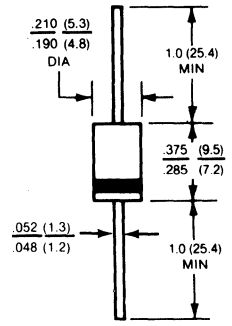
FEATURES

- High temperature metallurgically bonded-no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0 Utilizing General
- Glass passivated junction in DO-201AD package
- 2.5 Ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- High temperature soldering guaranteed 350°C/ 10 seconds/.375" (9.5mm) lead length at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.04 ounce, 1.1 grams

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RGP25A	RGP25B	RGP25D	RGP25G	RGP25J	RGP25K	RGP25M	UNITS
Maximum Reccurent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	700	200	400	600	800	1000	V
Maximum Forward Rectified Current .375" (9.5mm) lead length at T_A = 55°C	2.5							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	100							A
Maximum Instantaneous Forward Voltage at 2.5A	1.3							V
Maximum Reverse Current at Rated DC Blocking Voltage T_A = 25°C	5.0							μA
Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead lengths at T_A = 55°C	100							μA
Typical Junction Capacitance (Note 1)	40							pF
Maximum Reverse Recovery Time (Note 2)	150	150	150	150	250	500	500	ns
Operating and Storage Temperature Range, T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A

RATING AND CHARACTERISTIC CURVES
RGP25 SERIES

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

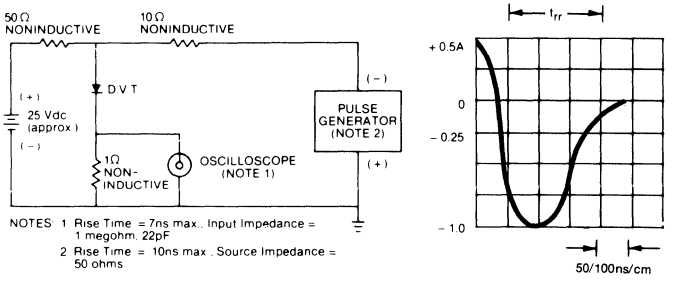


FIG. 2 — FORWARD CURRENT DERATING CURVE

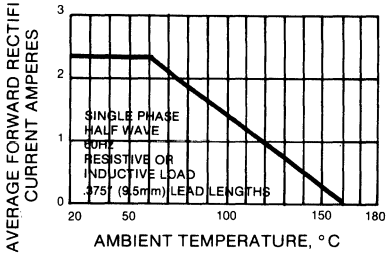


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

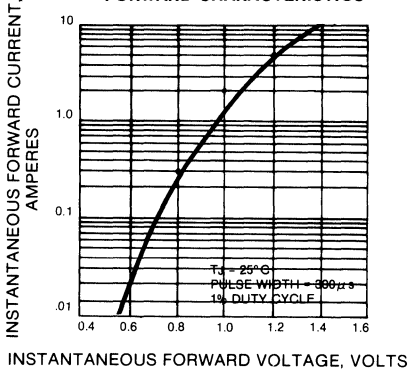


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

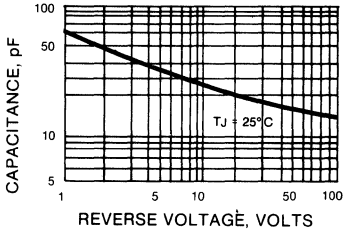


FIG. 5 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

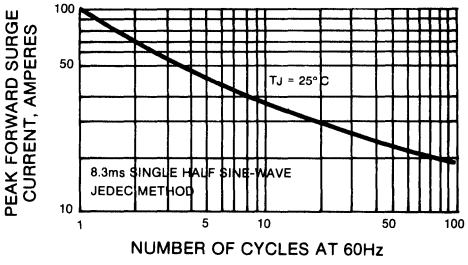
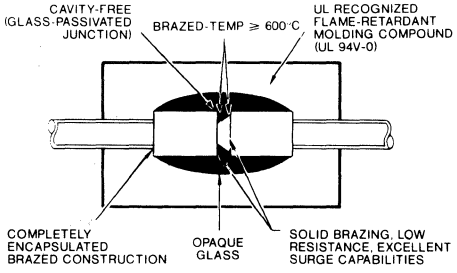


FIG. 6 — SUPERECTIFIER



1N5185GP THRU 1N5190GP

GLASS PASSIVATED JUNCTION PLASTIC FAST SWITCHING RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 600 Volts
CURRENT
3.0 Amperes

FEATURES

- High temperature metallurgically bonded-no compression contacts as found in diode-constructed rectifiers.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O.
- Glass passivated junction
- 3 ampere operation at T_A= 25° C with no thermal runaway.
- Typical I_R less than 1 μA.
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 350°C/10 seconds/.375", 9.5mm lead length/5 lbs., 11 kg tension.

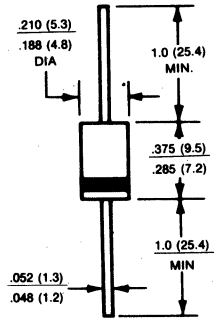
MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band, denote cathode
Mounting position: Any
Weight: 0.04 ounce, 1.1 grams

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

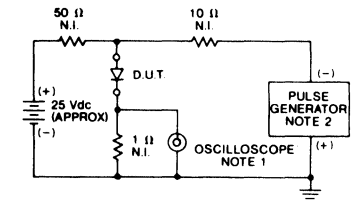
Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

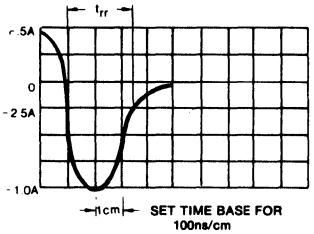
	1N5185GP	1N5186GP	1N5187GP	1N5188GP	1N5189GP	1N5190GP	UNITS
* Maximum Recurrent Peak Reverse Voltage	50	100	200	400	500	600	V
Maximum RMS Voltage	35	70	140	280	350	420	V
* Maximum DC Blocking Voltage	50	100	200	400	500	600	V
* Maximum Average Forward Current .375" 9.5 mm Lead at T_A= 25° C	3.0						A
* Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	80						A
* Maximum Forward Voltage at 3.0A	1.1						V
* Maximum Reverse Current at (T_A= 25° C) Rated DC Blocking Voltage (T_A= 100° C)	5.0 100						μA
* Maximum Junction Capacitance (Note 1)	600	400	320	240	200	160	pF
* Maximum Reverse Recovery Time (Note 2)		250		300	350	400	ns
* Operating and Storage Temperature Range, T_J T_{STG}	-65 to +175						°C

NOTES:
1) As measured at 1 MHz, V_R = 0VoHs.
2) Reverse Recovery Test Conditions: I_F = 1A, I_R = 1A, I_{rr} = 0.5A.
* JEDEC registered values.

RATING AND CHARACTERISTIC CURVES
1N5185GP THRU 1N5190GP

Fig. 1-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM





NOTES:
1. RISE TIME =7nsMAX, INPUT IMPEDANCE =MEGOHM, 22pF.
2. RISE TIME =10ns MAX, SOURCE IMPEDANCE =50 OHM.

Fig. 2-FORWARD CURRENT DERATING CURVE

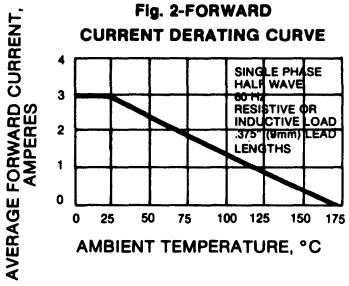


Fig. 3-PEAK FORWARD SURGE CURRENT

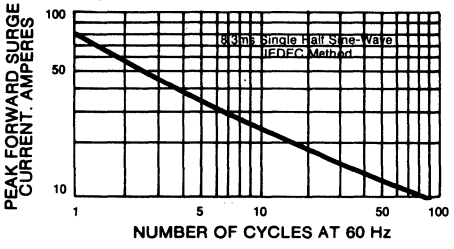


Fig. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

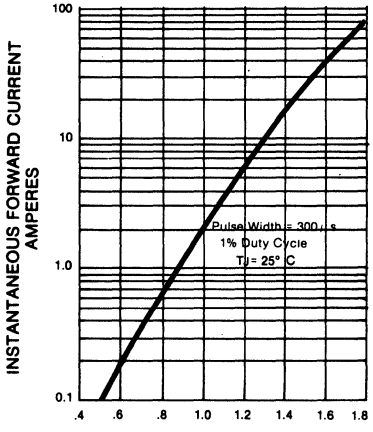


Fig. 5-TYPICAL JUNCTION CAPACITANCE

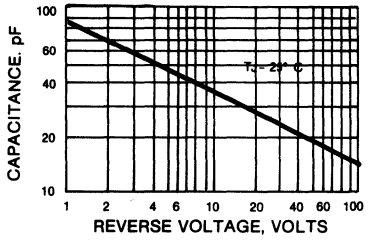
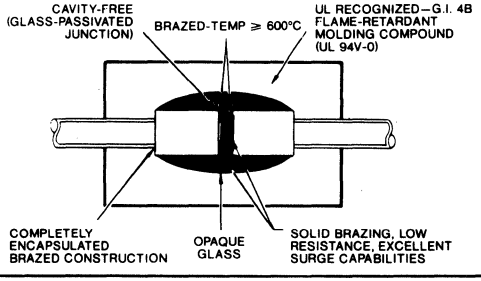


Fig. 6-SUPERECTIFIER



RGP30 SERIES

GLASS PASSIVATED JUNCTION FAST SWITCHING RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE
50 to 1000 Volts

CURRENT
3.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Glass passivated junction in a DO-201AD package
- 3 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead lengths/5 lbs., (2.3kg) tension

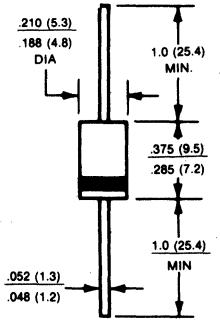
MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: 0.04 ounce, 1.12 grams

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current, .375" (9.5mm) Lead Lengths at T_A = 55°C	3.0							A
Peak Forward Surge Current 8.3ms single half wine-wave superimposed on rated load (JEDEC method)	125							A
Maximum Instantaneous Forward Voltage at 3.0A	1.3							V
Maximum Reverse Current at Rated DC Blocking Voltage T_J = 25°C	5.0							μA
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length T_A = 55°C	100							μA
Typical Junction Capacitance (Note 1)	60							pF
Maximum Reverse Recovery Time (Note 2)	150	150	150	150	250	500	500	ns
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 Volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.

FIG. 1 — FORWARD CURRENT DERATING CURVE

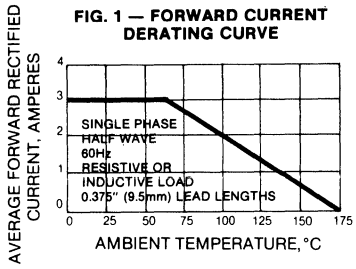


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

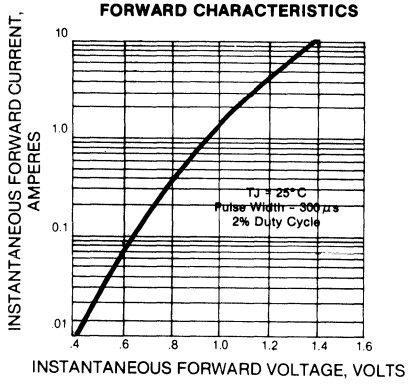


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

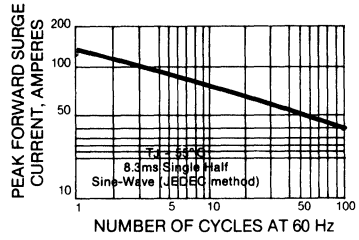


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

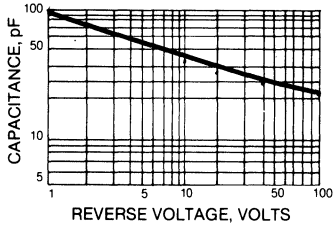


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

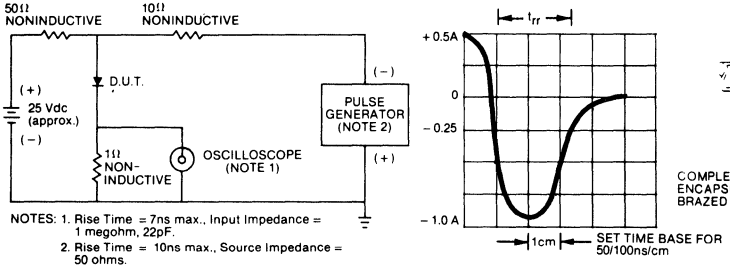
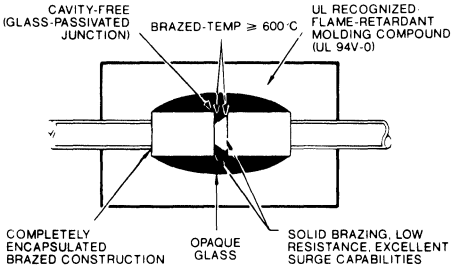


FIG. 6 — SUPERECTIFIER



GLASS PASSIVATED RECTIFIERS 0.4 AMPERES TO 3.0 AMPERES 50 VOLTS TO 1400 VOLTS

GENERAL INSTRUMENT

Glass Passivated Rectifier

0.2 to 3.0 Amperes

50 V to 1400 V

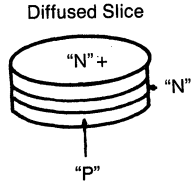
Device Design

The Glass Passivated Rectifier is a hermetically sealed, cavity-free, diffused junction rectifier with unsurpassed operating and surge characteristics at high temperature.

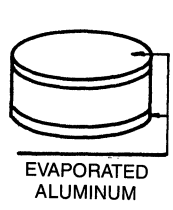
Cavity-free construction with a specially developed extremely pure glass in direct contact with the silicon junction plus durable heat sink design obviate the need for solder joints and compression contact parts. The carefully matched expansion characteristics of the glass and metal parts in combination with the direct contact of the glass and silicon junction make the active rectifying elements impervious to surface contamination, moisture or other external chemical agents. Further, the long term degradation associated with organic junction protection is avoided.

There are many steps necessary to produce such a device:

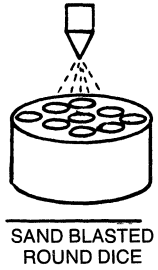
1—Diffuse a PN junction into a slice of silicon



2—Evaporate aluminium on both sides of the slice to make metallurgical contact

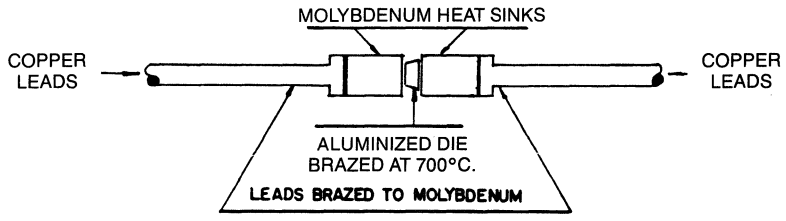


3—Sandblast the slice to produce a round beveled die



4—Braze the die between two molybdenum heat sinks to which leads have been attached at approximately 700°C.

Glass Passivated Rectifier

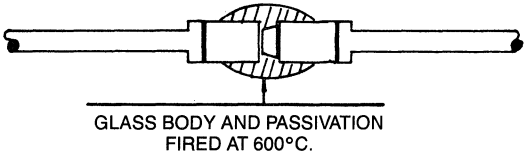


5—Clean the assembly by chemically etching, washing and drying.

6—Apply glass in the form of a frit to the die and molybdenum assembly.

7—Melt the glass by heating in an oven to approximately 600°C.

Glass Passivated Rectifier



8—Perform finishing operations such as lead tinning, electrical testing and marking.

Package Design

The small size of the glass package with its capability up to 3 Ampere permits greater packing densities in electronic assemblies and equipment, while increasing reliability. Furthermore, only high temperature brazing operations are used to withstand the 600°C required to melt and fuse the glass. This technique eliminates solder construction and tremendously enhances mechanical strength and temperature cycling capability, increasing operating and storage temperature range while reducing thermal resistance.

Reliability

Specified reliability data on Glass Passivated Rectifier devices are available from the General Instrument Semiconductor Components Division Reliability Department. The basic design of the Glass Passivated rectifier and the strict positive controls over materials and manufacturing processes provide assurance of failure-free performance under the most severe conditions. Processing facilities have been geared to follow the procedural requirements of Military Standard 750. Glass Passivated rectifiers are capable of withstanding environmental extremes in excess of MIL-S-19500/286 and of meeting the requirements of MIL-S-19500E, MIL-STD-883, MIL-Q-9858 and MIL-I-45208. Assurance of production uniformity and reliability is provided by a test technique called "Operational Load Line Testing," which has proven product reliability with over 1 Billion Glass Passivated rectifiers now in use.

GENERAL INSTRUMENT

FAMILIES OF GENERAL INSTRUMENT GLASS PASSIVATED RECTIFIERS

Glass Passivated Silicon Diodes 0.2 to 0.4 AMPERES

Types:
1N483B thru 1N486B
1N645 thru 1N649

Features:
- High Temperature Metallurgically Bonded
- High Efficiency and Rectification Radio
- Ideally Suited for Miniaturized Equipment
- Case: One Piece Glass, Hermetically Sealed
- Tin Plated Axial Leads, Solderable per MII-STD-202/208
- Operating from −65°C to +175°C
- Low Leakage

Glass Passivated Silicon Rectifiers 1 to 3 AMPERES

Types:
1N3611 thru 1N3614
1N4245 thru 1N4249
1N5059 thru 1N5062
1N5550 thru 1N5554
1N5624 thru 1N5627
G1A thru G1M
G2A thru G2M
G3A thru G3M
G4A thru G4M

Features:
- Glass Passivated Junction
- High Mechanical Strength
- Storage up to 200°C
- Voidless Construction
- Hermetically Sealed
- Avalanche Operation
- Low Leakage
- High Conductance
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208

Glass Passivated Fast Recovery Silicon Rectifiers 1 to 3 AMPERES

Types:
1N4942 thru 1N4948
1N5614 thru 1N5622
1N5615 thru 1N5623
1N5415 thru 1N5420
RG1A thru RG1M
RG2A thru RG2M
RG3A thru RG3M
RG4A thru RG4M

Features:
- Glass Passivated Junction
- Fast Switching for High Rectification Efficiency to 100 kHz
- High Mechanical Strength
- Low Leakage
- Hermetically Sealed
- Storage up to 200°C
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208

Glass Passivated High Voltage Silicon Rectifiers

Types:
CG1, DG1
CG63, DG63

Features:
- All Advantages of a Hermetically Sealed Glass Passivated Junction
- Especially designed for Clamper/Damper Applications in Television CRT
- Low Leakage
- High Mechanical Strength
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208

GENERAL INSTRUMENT

QUICK GUIDE TO GLASS PASSIVATED RECTIFIERS

TYPE	1N483B thru 1N486B	1N645 thru 1N649	1N3611 thru 1N3614	1N4245 thru 1N4249	1N4942* thru 1N4948*	1N5059 thru 1N5062	1N5614 thru 1N5622	1N5615* thru 1N5623*	G1A thru G1M	RG1A* thru RG1M*	TYPE
CASE	DO204MB	DO204MB	DO204AP	DO204AP	DO204AP	DO204AP	DO204AP	DO204AP	DO204AP	DO204AP	CASE
I_o (A)	0.2	0.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	I_o (A)
@T_A (°C)	25	25	100	55	55	55	55	55	100	55	@T_A (°C)
V_R = 50 (V)	1N483B								G1A	RG1A	V_R = 50 (V)
V_R = 100 (V)	1N485B								G1B	RG1B	V_R = 100 (V)
V_R = 200 (V)	1N486B	1N645	1N3611	1N4245	1N4942	1N5059	1N5614	1N5615	G1D	RG1D	V_R = 200 (V)
V_R = 300 (V)		1N646			1N4943						V_R = 300 (V)
V_R = 400 (V)		1N647	1N3612	1N4246	1N4944	1N5060	1N5616	1N5617	G1G	RG1G	V_R = 400 (V)
V_R = 500 (V)		1N648			1N4945						V_R = 500 (V)
V_R = 600 (V)		1N649	1N3613	1N4247	1N4946	1N5061	1N5618	1N5619	G1J	RG1J	V_R = 600 (V)
V_R = 800 (V)			1N3614	1N4248	1N4947	1N5062	1N5620	1N5621	G1K	RG1K	V_R = 800 (V)
V_R = 1000 (V)			1N3967	1N4249	1N4948		1N5622	1N5623	G1M	RG1M	V_R = 1000 (V)
V_R > 1000 (V)											V_R > 1000 (V)
SURGE (A)	2.0	15	30	25	30	50	50	50	50	30	SURGE (A)
V_F (V)	1.0	1.0	1.1	1.2	1.3	1.2	1.2	1.2	1.1	1.3	V_F (V)
Page		216		218	242	220	222	244	224	246	Page

*Fast Recovery

GENERAL INSTRUMENT

QUICK GUIDE TO GLASS PASSIVATED RECTIFIERS

TYPE	CG1 and DG1	G2A thru G2M	RG2A* thru RG2M*	1N5624 thru 1N5627	1N5550 thru 1N5559	1N5415 thru 1N5420	G3A thru G3M	G4A thru G4M	RG3A* thru RG3M*	RG4A thru RG4M	CG3 and DG3	TYPE
CASE	DO204AP	DO204AP	DO204AP	GPR3	GPR3	GPR3	GPR3	GPR3	GPR3	GPR3	GPR3	CASE
I_o (A)	1.5	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	I_o (A)
T_A (°C)	55	70	55	70	55	55	70	70	55	50	50	T_A (°C)
V_R = 50 (V)		G2A	RG2A			1N5415	G3A	G4A	RG3A	RG4A		V_R = 50 (V)
V_R = 100 (V)		G2B	RG2B			1N5416	G3B	G4B	RG3B	RG4B		V_R = 100 (V)
V_R = 200 (V)		G2D	RG2D	1N5624	1N5550	1N4517	G3D	G4D	RG3D	RG4D		V_R = 200 (V)
V_R = 300 (V)												V_R = 300 (V)
V_R = 400 (V)		G2G	RG2G	1N5625	1N5551	1N5418	G3G	G4G	RG3G	RG4G		V_R = 400 (V)
V_R = 500 (V)						1N5419						V_R = 500 (V)
V_R = 600 (V)		G2J	RG2J	1N5626	1N5552	1N5420	G3J	G4J	RG3J	RG4J		V_R = 600 (V)
V_R = 800 (V)		G2K	RG2K	1N5627	1N5553		G3K	G4K	RG3K	RG4K		V_R = 800 (V)
V_R = 1000 (V)		G2M	RG2M		1N5554		G3M	G4M	RG3M	RG4M		V_R = 1000 (V)
V_R > 1000 (V)	CG1/DG1										CG3/DG3	V_R > 1000 (V)
SURGE (A)	50	50	65	125	100	80	125	125	100	100	125	SURGE (A)
V_F (V)	1.0	1.2	1.3	1.0	1.2/1.3	1.1	1.1	1.1	1.3	1.3	1.2	V_F (V)
Page	226	228	248	232	230	250	234	236	252	254	238	Page

*Fast Recovery

1N645 THRU 1N649

MINIATURE GLASS PASSIVATED SILICON DIODES

GENERAL INSTRUMENT

VOLTAGE RANGE
225 to 600 Volts

CURRENT
400 Milliamperes

FEATURES

- High temperature metallurgically bonded - no compression contacts as found in diode-constructed rectifiers
- 0.4 amperes operation at T_A = 25°C with no thermal runaway
- Ideally suited for miniaturized equipment
- Exceeds environmental standards of MIL-STD-19500/240.
- High temperature soldering Guaranteed 350°C/10 seconds/.375", (9.5mm) lead length at 5 lbs., (2.3kg) tension
- Glass passivated junction

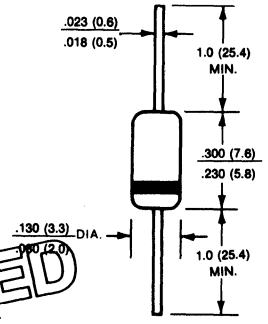
MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce .56 gram

PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-204MB



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N645	1N646	1N647	1N648	1N649	UNITS
* Maximum Recurrent Peak Reverse Voltage	225	300	400	500	600	V
Maximum RMS Voltage	156	210	280	350	420	V
Maximum DC Blocking Voltage	225	300	400	500	600	V
* Minimum Avalanche Breakdown Voltage at T_A = 100°C	275	360	480	600	720	V
* Maximum Average Forward Rectified Current T_A = 25°C .375", (9.5mm) Lead Length at T_A = 150°C	400 150					mA mA
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	15					A
* Maximum Instantaneous Forward Voltage at 400mA	1.0					V
* Maximum DC Reverse Current T_A = 25°C	0.2					µA
at Rated DC Blocking Voltage T_A = 100°C	15	15	20	20	25	µA
Typical Junction Capacitance (Note 1)	15					pF
Operating and Temperature Range T_J	-65 to +175					°C
Storage Temperature Range T_{STG}	-65°C to +200°C					°C

NOTES:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC
2. Available to Jan and Jan TX Military Specifications MIL-S-19500/240
* JEDEC Registered Value

RATING AND CHARACTERISTIC CURVES
1N645 THRU 1N649 SERIES

FIG. 1 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

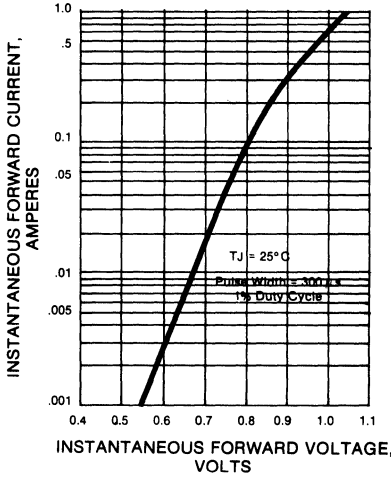


FIG. 2 — TYPICAL REVERSE LEAKAGE CHARACTERISTICS

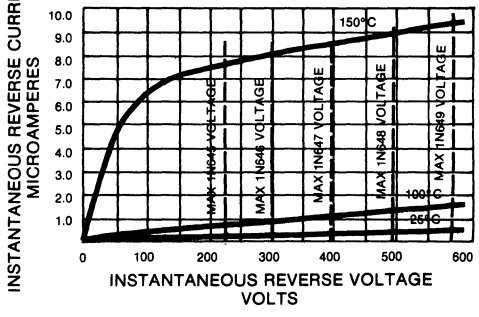


FIG. 3 — FORWARD CURRENT DERATING CURVE

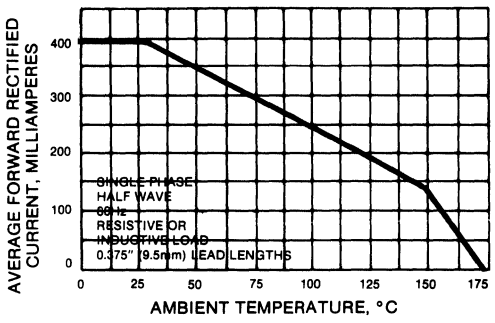


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

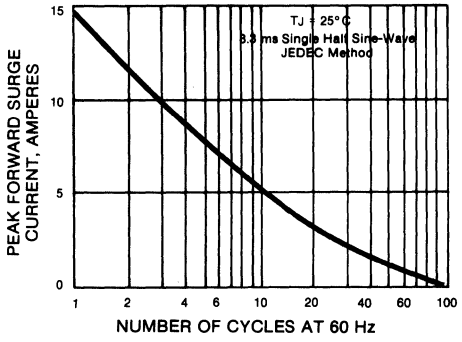
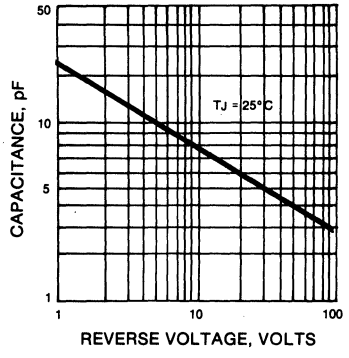


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



1N4245 THRU 1N4249

GLASS PASSIVATED SILICON RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 Volts

CURRENT
1.0 Ampere

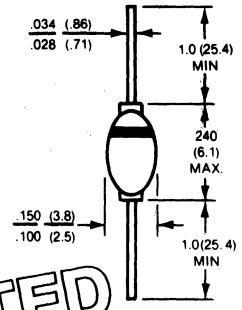
FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in DO-204AP package
- 1 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 0.5 μA
- Exceeds environmental standards of MIL-STD-19500
- Hermetically sealed package
- High temperature soldering guaranteed 350°C/10 seconds/.375", (9.5mm) lead length at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce, .56 gram

DO-204AP



PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N4245	1N4246	1N4247	1N4248	1N4249	UNITS
* Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
* Maximum RMS Voltage	140	280	420	560	700	V
* Maximum DC Blocking Voltage	200	400	600	800	1000	V
* Maximum Average Forward Rectified Current .375", (9.5mm) lead lengths at T_A = 55°C	1.0					A
* Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method)	25					A
* Maximum Instantaneous Forward Voltage at 1.0A	1.2					V
* Maximum Full Load Reverse Current, Full Cycle Average .375", (9.5mm) Lead Lengths at T_A = 55°C	50					μA
* Maximum Reverse Current at Rated DC Blocking Voltage T_A = 25°C	1.0					μA
T_A = 125°C	25					μA
Typical Junction Capacitance (Note 2)	15					pF
* Operating Temperature Range T_J	-65 to +160					°C
* Storage Temperature Range, T_{STG}	-65 to +200					°C

NOTES:
1. Available to JAN and JANTX Military Specification MIL-S-A500/286.
2. Measured at 1MHz and applied reverse voltage of 4.0 Volts.
* JEDEC Registered Values.

RATING AND CHARACTERISTIC CURVES
1N4245 THRU 1N4249

FIG. 1 — FORWARD DERATING CURVE

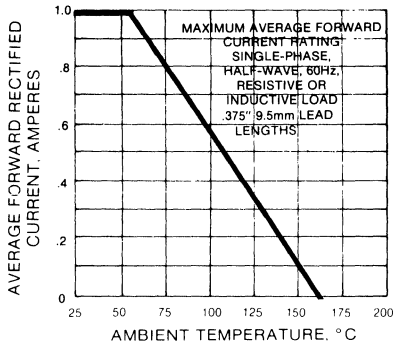


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

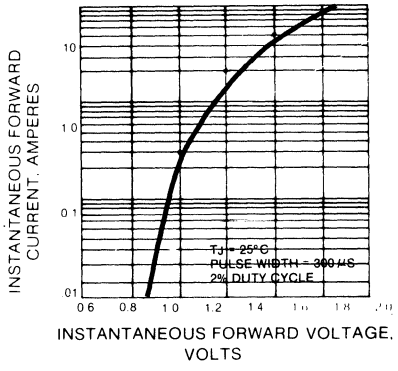


FIG. 3 — MAXIMUN NON-REPETITIVE SURGE CURRENT

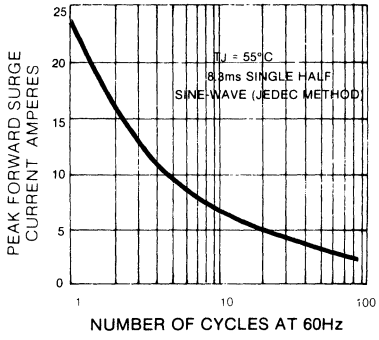


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

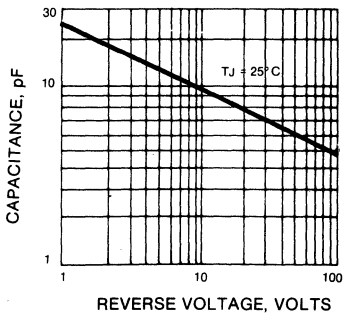
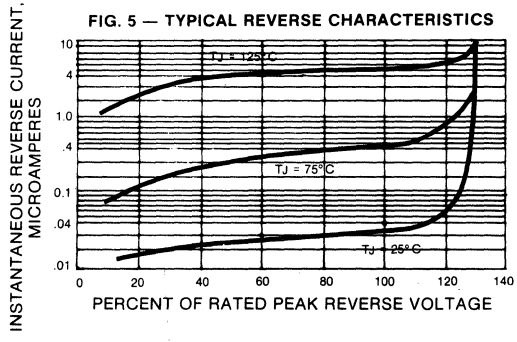


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



1N5059 THRU 1N5062

MINIATURE GLASS PASSIVATED JUNCTION RECTIFIER

GENERAL INSTRUMENT

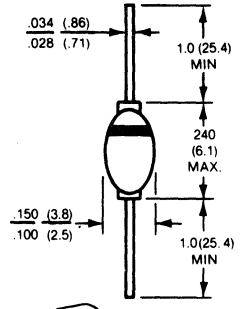
VOLTAGE RANGE
200 to 800 Volts

CURRENT
1.0 Ampere

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in DO-204AP package
- 1 ampere operation T_A = 75°C with no thermal runaway
- Typical I_R less than 1.0 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/ .375", (9.5mm) lead length at 5 lbs., (2.3kg) tension

DO-204AP



MECHANICAL DATA

Case: One piece glass, hermetcially sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce, .56 gram

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5059	1N5060	1N5061	1N5062	UNITS
* Maximum Recurrent Peak Reverse Voltage	200	400	600	800	V
Maximum RMS Voltage	140	280	420	560	V
* Maximum DC Blocking Voltage	200	400	600	800	V
* Maximum Average Forward Rectified Current .375", (9.5mm) lead length at T_A = 75°C	1.0				A
* Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50				A
* Maximum Instantaneous Forward Voltage at 1.0A T_A = 75°C	1.2				V
* Maximum Full Load Reverse Current, T_A = 25°C	5.0				μA
Full Cycle Average, .375" (9.5mm) lead lengths at T_A = 75°C	150		100		μA
* Maximum DC Reverse Current T_A = 25°C	5.0				μA
at rated DC Blocking Voltage T_A = 175°C	300		200		μA
Typical Reverse Recovery Time (Note 1)	2.0				μs
Typical Junction Capacitance (Note 2)	15				pF
* Operating and Storage Temperature Range, T_J, T_{STG}	-65 to +175				°C

NOTES:
1. Reverse Recovery Test Conditions: IF = 5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
* JEDEC Registered Value.

RATING AND CHARACTERISTIC CURVES
1N5059 THRU 1N5062

FIG. 1 — FORWARD CURRENT DERATING CURVE

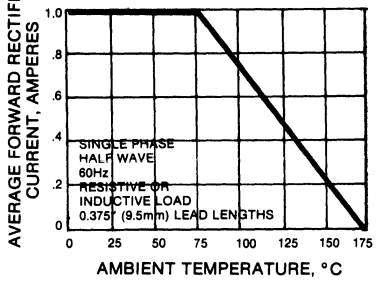


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

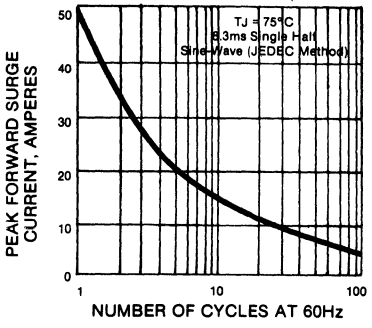


FIG. 3 — TYPICAL INSTANTANEOUS FOWARD CHARACTERISTICS

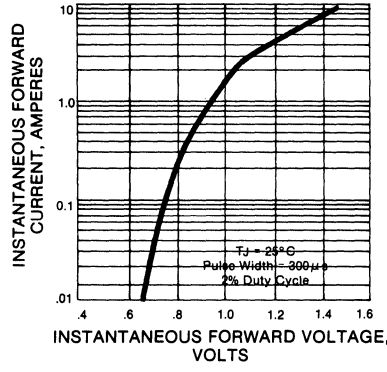


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

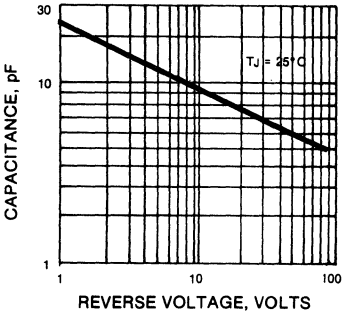


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS

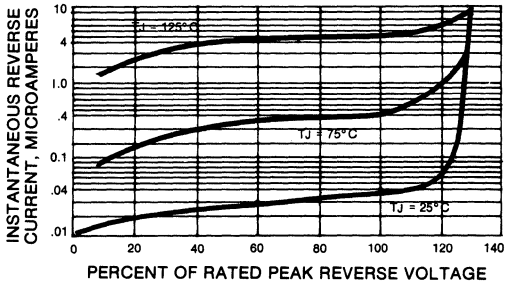
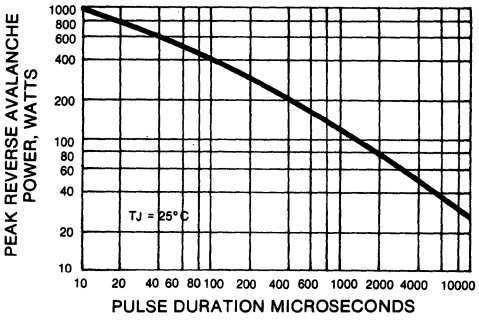


FIG. 6 — MAXIMUM NON-REPETITIVE REVERSE AVALANCHE POWER



1N5614 THRU 1N5622

MINIATURE GLASS PASSIVATED JUNCTION MEDIUM-SWITCHING RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

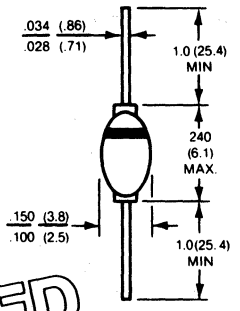
- High temperture metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in DO-204AP package.
- 1 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 0.1 μA
- Exceeds environmental standards of MIL-STD-19500
- Medium switching for high efficiency
- High temperature soldering guaranteed 350°C/10 seconds/.375", (9.5mm) lead length at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color and denotes cathode
Mounting Position: Any
Weight: .02 ounce, .56 gram

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

DO-204AP



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5614	1N5616	1N5618	1N5620	1N5622	UNITS
* Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
Maximum RMS Voltage	140	280	420	560	700	V
* Maximum DC Blocking Voltage	200	400	600	800	1000	V
* Minimum Avalanche Breakdown Voltage at 50 μA	220	440	660	880	1100	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	1.0					A
* Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50.0					A
* Maximum Instantaneous Forward Voltage at 1.0A	1.2					V
* Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C	0.5					μA
T_A = 100°C	25.0					μA
T_A = 200°C	1500					μA
* Maximum Reverse Recovery Time (Note 1)	2.0					μs
* Maximum Junction Capacitance (Note 2)	45	35	25	20	15	pF
* Operating Temperature Range, T_J	-65 to +175					°C
* Storage Temperature Range, T_{STG}	-65 to +200					°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A
2. Measured at 1 MHz and applied reverse voltage of 12 volts.
3. Available to Jan and Jan TX Military Specifications MIL-S-19500/427.
* JEDEC Registered Value.

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

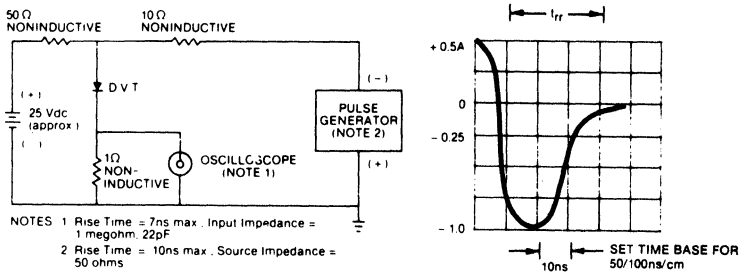


FIG. 2 — FORWARD CURRENT DERATING CURVE

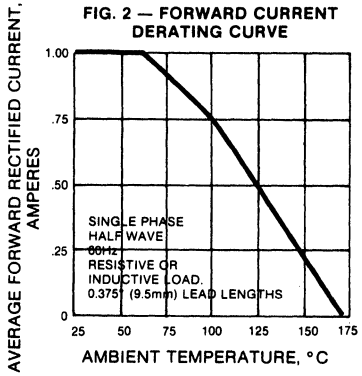


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

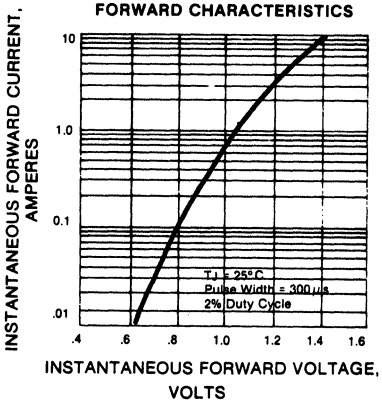


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

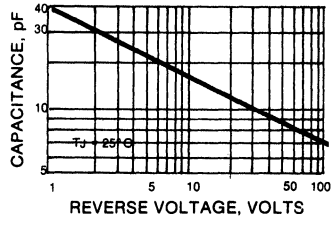
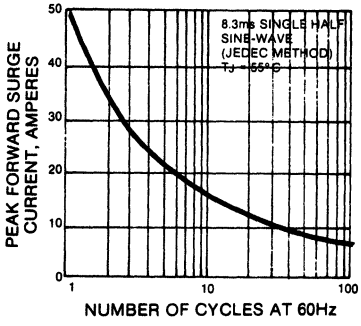


FIG. 5 — PEAK FORWARD SURGE CURRENT



G1 SERIES

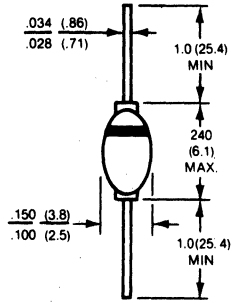
MINIATURE GLASS PASSIVATED JUNCTION RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.0 Ampere

DO-204AP



Dimensions in inches and (millimeters)

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in a DO-204AP package
- 1 ampere operation at T_A = 100°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce, .56 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	G1A	G1B	G1D	G1G	G1J	G1K	G1M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current, .375" (9.5mm) Lead Length at T_A = 100°C	1.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50							A
Maximum Instantaneous Forward Voltage at 1.0A	1.2		1.1					V
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length at T_A = C	200							μA
Maximum DC Reverse Current at Rated DC Blocking Voltage	2.0							μA
Typical Reverse Recovery Time (Note 1)	2.0							μs
Typical Junction Capacitance (Note 2)	15							pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured with IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC.

RATING AND CHARACTERISTIC CURVES
G1 SERIES

FIG. 1—FORWARD CURRENT DERATING CURVE

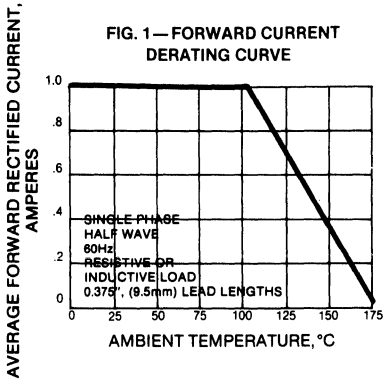


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

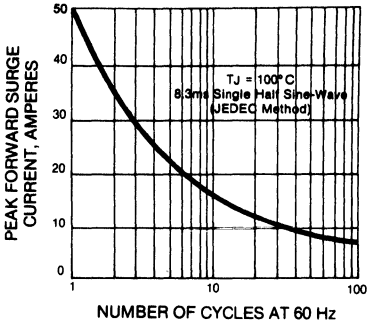


FIG. 3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

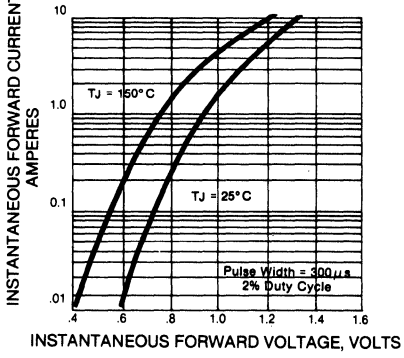


FIG. 4—TYPICAL JUNCTION CAPACITANCE

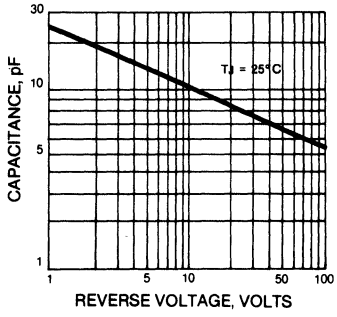
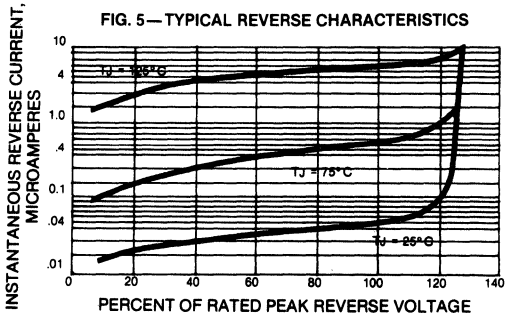


FIG. 5—TYPICAL REVERSE CHARACTERISTICS



CG1/DG1 SERIES

GLASS PASSIVATED JUNCTION RECTIFIER

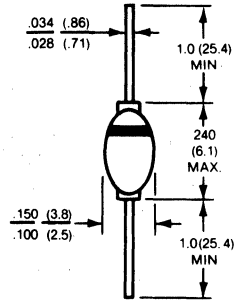
GENERAL INSTRUMENT

VOLTAGE RANGE
1400 Volts

CURRENT
1.5 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in a DO-204AP package
- 1.5 ampere operation at T_A = 50°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: One piece glass, hermetcially sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce, .56 gram

PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	CG1	DG1	UNITS
Maximum Recurrent Peak Reverse Voltage	1400	1400	V
Maximum RMS Voltage	980	980	V
Maximum DC Blocking Voltage	1400	1400	V
Maximum Average Forward Rectified Current, .375", (9.5mm) Lead Length at T_A = 50°C	1.5		A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50		A
Maximum Instantaneous Forward Voltage at 1.0A	1.1		V
Maximum Full Load Reverse Current, Full Cycle Average, .375" (9.5mm) Load Length at T_A = 100°C	200		μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 100°C	5.0 100		μA
Maximum Reverse Recovery Time (Note 1)	15	20	s
Typical Junction Capacitance (Note 2)	15		pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175		°C

NOTES:
1. Measured with IF = .5A, IR = 50ma.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC.

RATING AND CHARACTERISTIC CURVES
CG1/DG1 Series

FIG. 1—FORWARD CURRENT DERATING CURVE

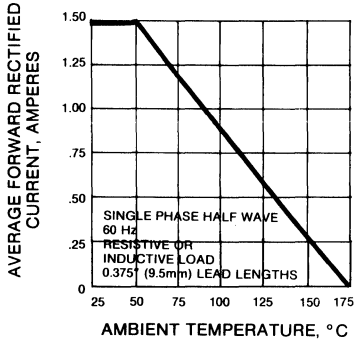


FIG. 2 — MAXIMUN NON REPETITIVE PEAK FORWARD SURGE CURRENT

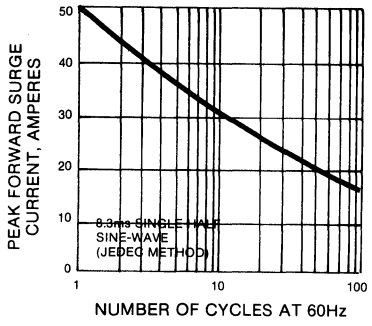


FIG. 3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

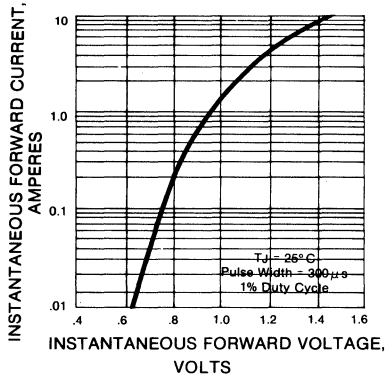


FIG. 4—TYPICAL JUNCTION CAPACITANCE

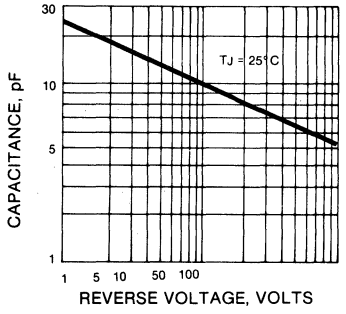


FIG. 5—TYPICAL REVERSE CHARACTERISTICS

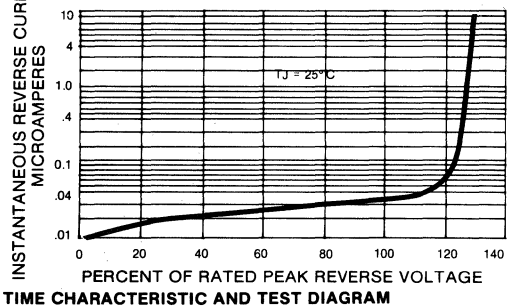
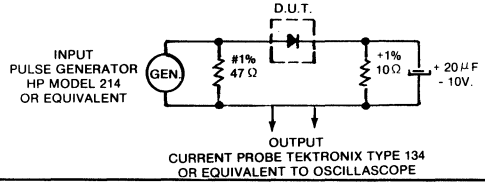
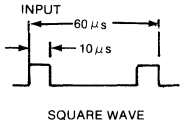
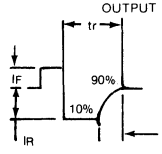


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM







G2 SERIES

MINIATURE GLASS PASSIVATED JUNCTION RECTIFIER

GENERAL INSTRUMENT

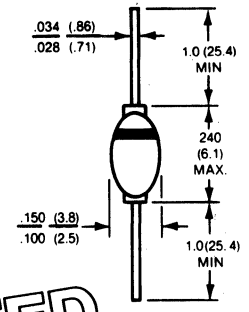
VOLTAGE RANGE
50 to 1000 Volts

CURRENT
2.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in a DO-204AP package
- 2 ampere operation at T_A = 75°C with no thermal runaway
- Typical I_R less than 0.1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds, .375" (9.5mm) lead length/5 lbs., (2.3kg) tension

DO-204AP



MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce, .56 gram

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	G2A	G2B	G2D	G2G	G2J	G2K	G2M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current, .375, (9.5mm) Lead Lengths at T_A = 75°C	2.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50							A
Maximum Instantaneous Forward Voltage at 2.0A	1.2		1.1					V
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length T_A = 100°C	100							μA
Maximum DC Reverse Current, at Rated DC Blocking Voltage	1.0							μA
Typical Reverse Recovery Time (Note 1)	2.0							μs
Typical Junction Capacitance (Note 2)	15							pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured with IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC.

FIG. 1 — FORWARD CURRENT DERATING CURVE

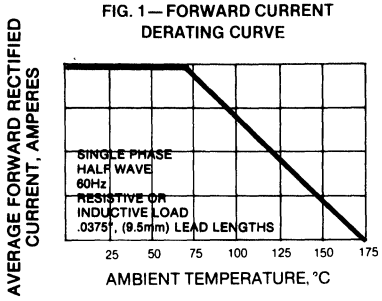


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

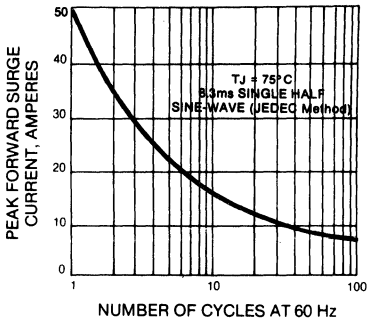


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

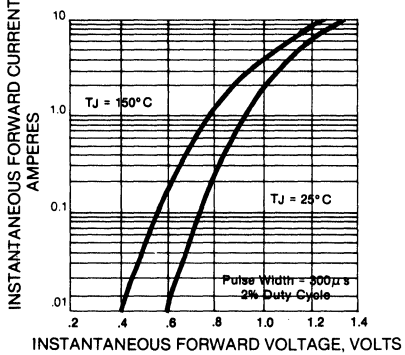


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

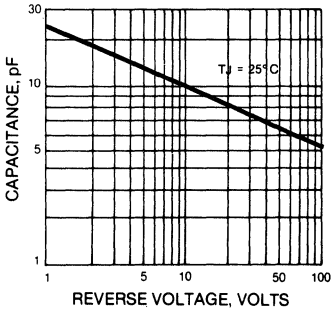
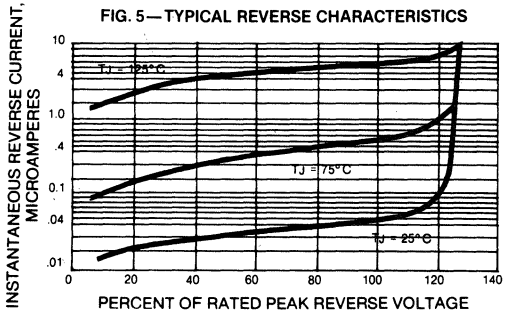


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



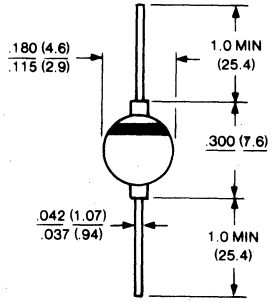
1N5550 THRU 1N5554

GLASS PASSIVATED SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 Volts

CURRENT
3.0 Amperes



FEATURES

- Glass passivated junction
- High temperature metallurgically bonded — no compression contacts as found in many competitive devices
- Exceeds environmental standard of MIL-STD-19500
- 3.0 Ampere operation at T_A = 55°C with no thermal runaway
- High temperature soldering guaranteed: 350°10 seconds/.375", (9.5mm) lead lengh/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: .037 ounce, 1.04 gram

PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5550	1N5551	1N5552	1N5553	1N5554	UNITS
* Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
Maximum RMS Voltage	140	280	420	560	700	V
* Maximum DC Blocking Voltage	200	400	600	800	1000	V
* Minimum Reverse Breakdown Voltage at 50 μA	240	460	660	880	1100	V
* Maximum Average Forward Rectified Current .375", 9.5mm Lead Length at T_A = 55°C	3.0					A
T_L = 55°C	5.0					A
Peak Forward Surge Current, 8.3ms single half sine-wave (JEDEC method)	100					A
Maximum Foward Voltage at 9.0A	1.2			1.3		V
* Maximum Reverse Current, at Rated DC Blocking Voltage T_A = 25°C	1.0					μA
T_A = 100°C	75					μA
Maximum Reverse Recovery Time (Note 1)	2.0					μs
Operating Temperature Range T_J	-65 to +175					°C
* Storage Temperature Range T_A	-65 to +200					°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Available to Jan and Jan TX Military Specifications MIL-S-19500/420A.
* JEDEC Registered Values

RATING AND CHARACTERISTIC CURVES
1N5550 THRU 1N5554

FIG. 1 — FORWARD CURRENT DERATING CURVE

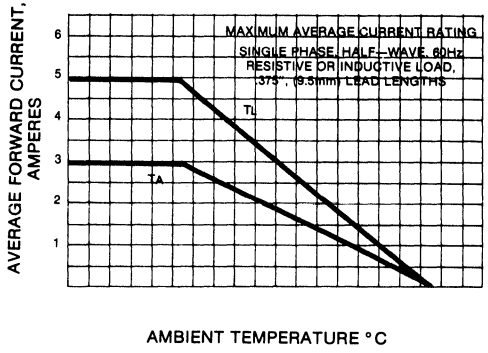


FIG. 2 — MAXIMUM NON—REPETITIVE PEAK SURGE CURRENT

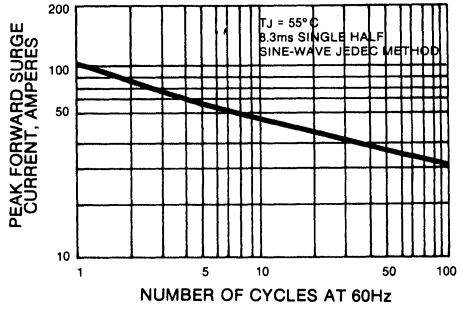


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

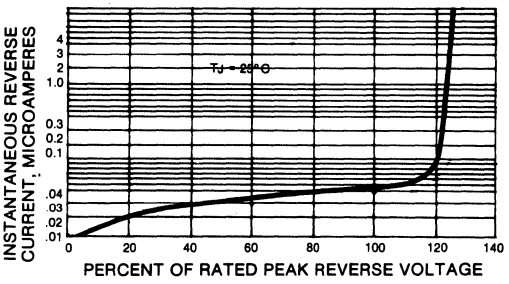


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

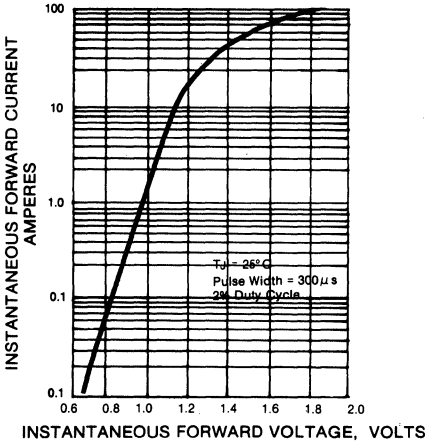
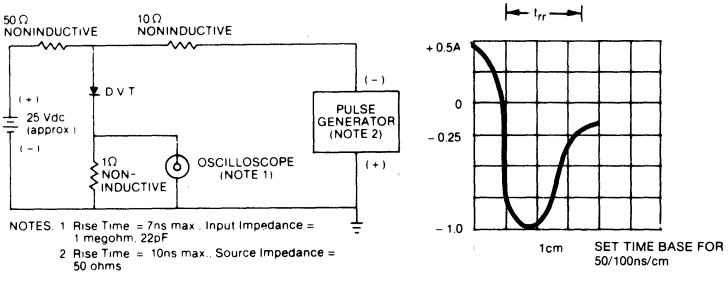


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



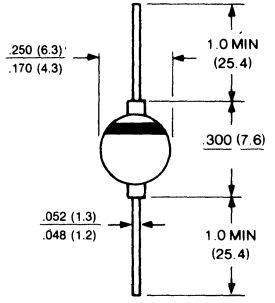
1N5624 THRU 1N5627

GLASS PASSIVATED JUNCTION RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 800 volts

CURRENT
3.0 Amperes



Dimensions in inches and (millimeters)

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction.
- 3.0 ampere operation at T_A = 70°C with no thermal runaway
- Typical I_R less than 1μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axials leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .037 ounce, 1.04 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5624	1N5625	1N5626	1N5627	UNITS
* Maximum Recurrent Peak Reverse Voltage	200	400	600	800	V
Maximum RMS Voltage	140	280	420	560	V
* Maximum DC Blocking Voltage	200	400	600	800	V
* Maximum Average Forward Rectified Current .375", (9.5mm) lead length at T_A = 70°C	3.0				A
* Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125				A
* Maximum Instantaneous Forward voltage at 3.0A T_A = 25°C	1.0				V
T_A = 70°C	.95				V
* Maximum Reverse Current at Rated DC Blocking Voltage T_A = 25°C	5.0				μA
T_A = 175°C	300		200		μA
* Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) lead length at T_A = 70°C	150		100		μA
Typical Junction Capacitance (Note 1)	40				pF
* Storage Temperature Range T_{STG}	-65 to +200				°C
* Operating Temperature Range T_J	-65 to +175				°C

NOTES:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC.
2. Available to Jan and Jan TX Military Specifications MIL-S-19500/432.
* JEDEC Registered Value

RATING AND CHARACTERISTIC CURVES
1N5624 THRU 1N5627

FIG. 1 — FORWARD CURRENT DERATING CURVE

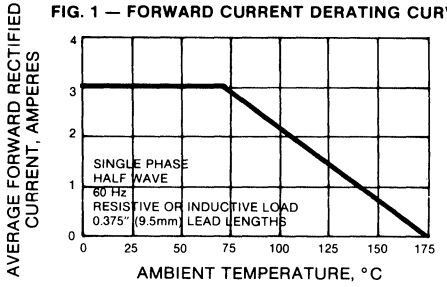


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

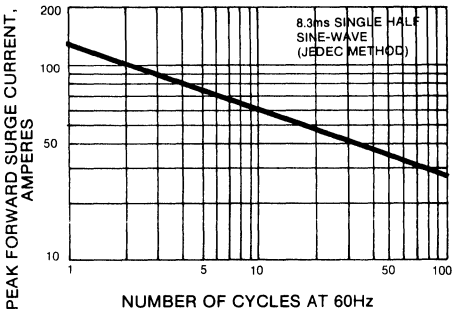


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

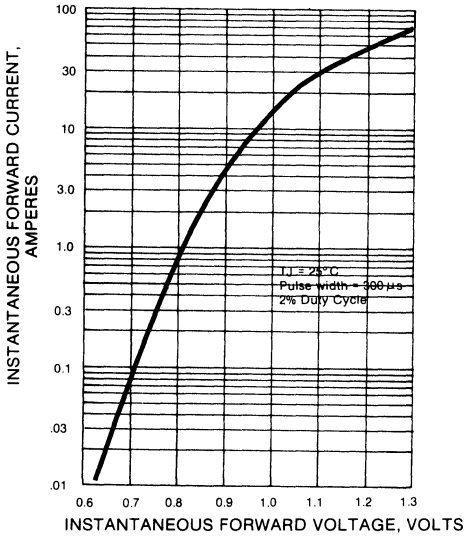


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

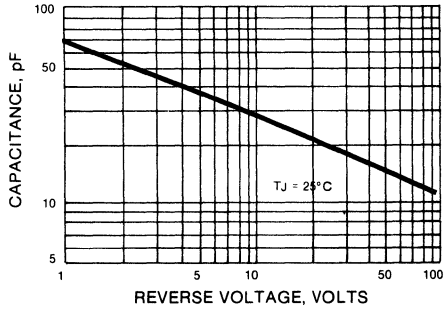
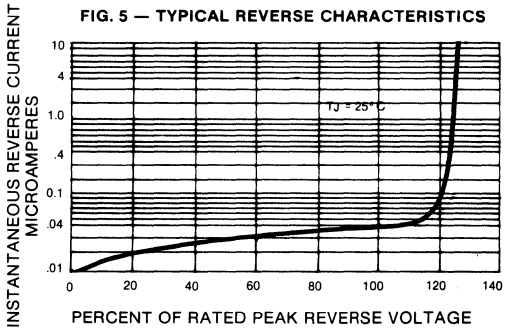


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



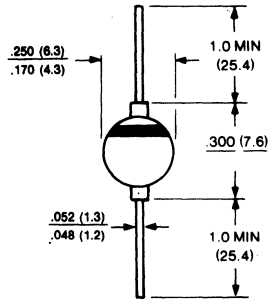
G3 SERIES

GLASS PASSIVATED JUNCTION RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
3.0 Amperes



Dimensions in inches and (millimeters)

FEATURES
- High temperature metallurgically bonded—no compression contact as found in diode-constructed rectifiers
- Glass passivated junction
- 3 ampere operation at T_A = 70°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA
Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .04 ounce, 1.1 gram

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,70[illegible] of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	G3A	G3B	G3D	G3G	G3J	G3K	G3M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 70°C	3.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125							A
Maximum Instantaneous Forward Voltage at 3.0A	1.2		1.1					V
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length T_A = 70°C	200							μA
Maximum DC Reverse Current, at Rated DC Blocking Voltage	5.0							μA
Typical Reverse Recovery Time (Note 1)	3.0							μs
Typical Junction Capacitance (Note 2)	40							pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured with IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1.0MHz and applied reverse voltage of 4.0 VDC.

RATING AND CHARACTERISTIC CURVES
G3 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

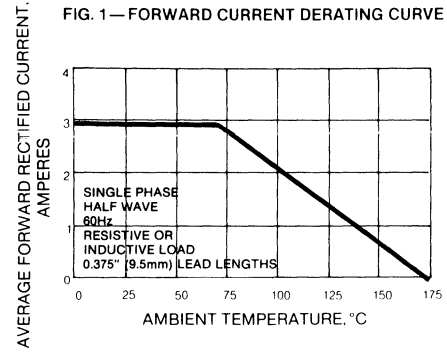


FIG. 2 — MAXIMUN NON-REPETITIVE SURGE CURRENT

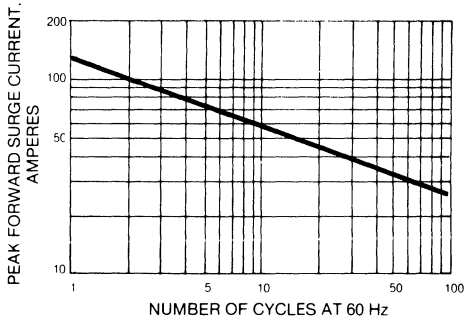


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

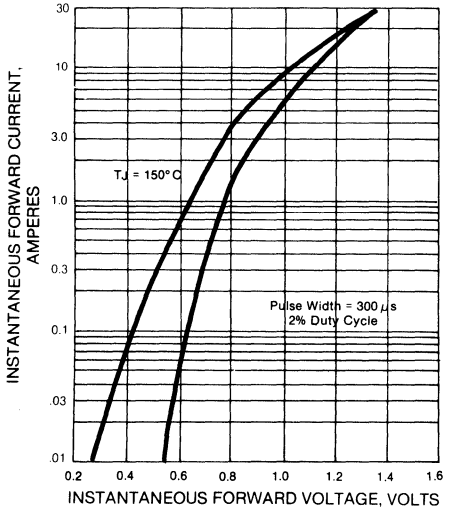


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

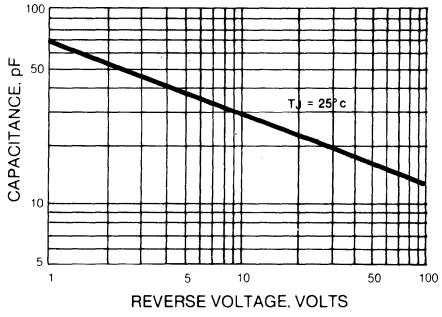
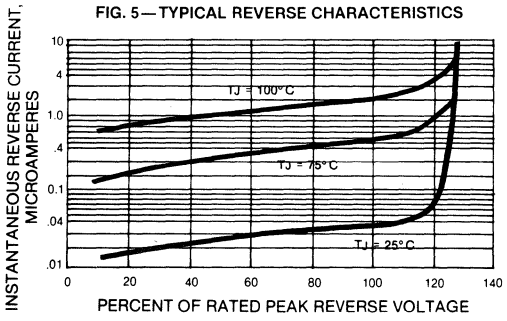


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



G4 SERIES

GLASS PASSIVATED SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

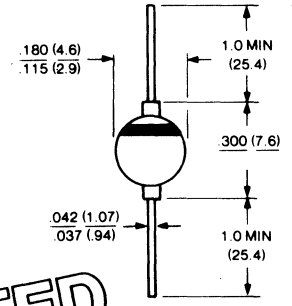
CURRENT
3.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in many competitive devices
- Exceeds environmental standards of MIL-STD-19500
- 3.0 ampere operation at T_A = 70°C with no thermal runaway
- Glass composition is covered by Patent No. 3,752.701-1971
- High temperature soldering guaranteed: 350°C/10 seconds/375", (9.5mm) lead length/5 lbs., (2.3kg) tension
- Typical I_R less than 1 μA

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .037 ounce, 1.04 grams



PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	G4A	G4B	G4D	G4G	G4J	G4K	G4M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", 9.5mm Lead Length at T_A = 70°C	3.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125							A
Maximum Instantaneous Forward Voltage at 3.0A	1.1							V
Maximum Reverse Current at Rated DC Blocking Voltage T_A = 25°C	5.0							μA
Maximum Average Reverse Current at Peak Reverse Voltage T_A = 25°C	1.0							μA
T_A = 100°C	100							μA
Maximum Full Load Reverse Current, Full Cycle Average, .375", 9.5mm Lead Length at T_A = 70°C	200							μA
Typical Junction Capacitance (Note 1)	30							pF
Typical Reverse Recovery Time (Note 2)	3.0							μs
Storage and Operating Temperature Range T_{STG}, T_J	-65 to +175							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
G4 SERIES

Fig. 1—FORWARD CURRENT DERATING CURVE

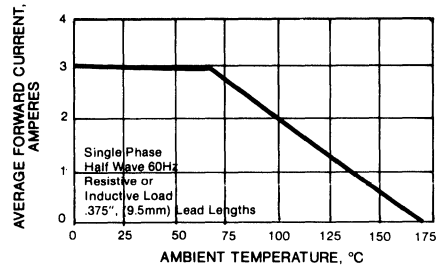


Fig. 3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

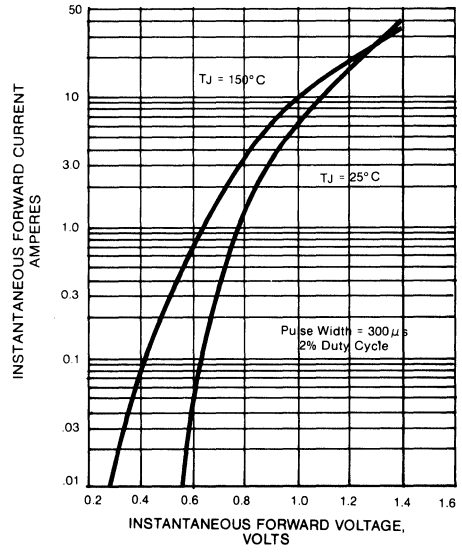


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

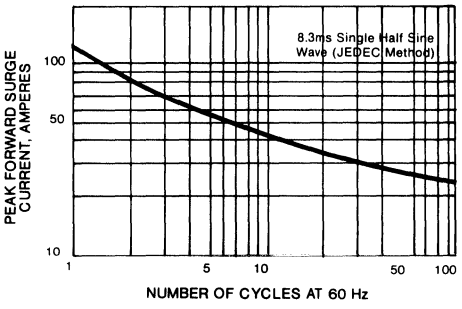


Fig. 4—TYPICAL JUNCTION CAPACITANCE

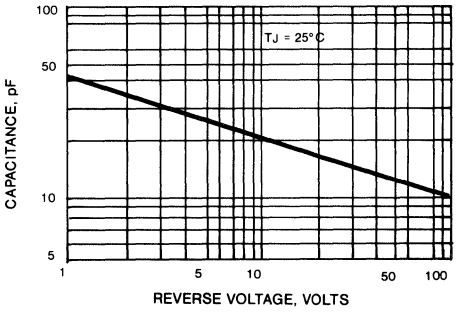
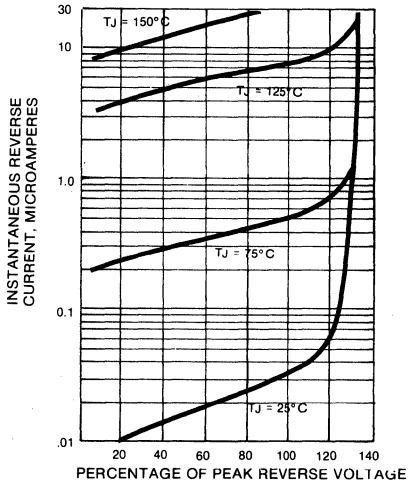


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



CG3/DG3 SERIES

MINIATURE GLASS PASSIVATED JUNCTION RECTIFIER

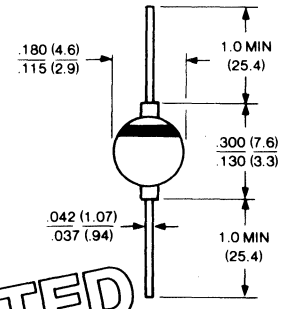
GENERAL INSTRUMENT

VOLTAGE RANGE
1400 Volts

CURRENT
3.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction
- 3 ampere operation at T_A = 50°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .04 ounce, 1.1 gram

PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	CG3	DG3	UNITS
Maximum Recurrent Peak Reverse Voltage	1400	1400	V
Maximum RMS Voltage	980	980	V
Maximum DC Blocking Voltage	1400	1400	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 50°C	3.0		A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125		A
Maximum Instantaneous Forward Voltage at 3.0A	1.2		V
Maximum Full Load Reverse Current, Full Cycle Average, .375" (9.5mm) Lead Length T_A = 70°C	200		A
Maximum DC Reverse Current, T_A = 25°C at Rated DC Blocking Voltage T_A = 100°C	5.0 100		μA μA
Maximum Reverse Recovery Time (Note 1)	15	20	μs
Typical Junction Capacitance (Note 2)	40		pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175		°C

NOTES:
1. Measured with IF = .5A, IR = 50mA.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC.

RATING AND CHARACTERISTIC CURVES
CG3/DG3 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

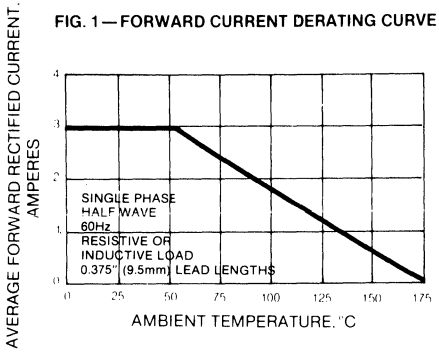


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

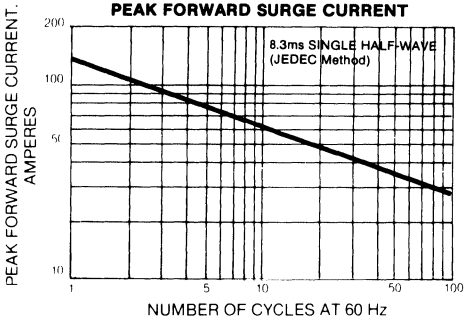


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

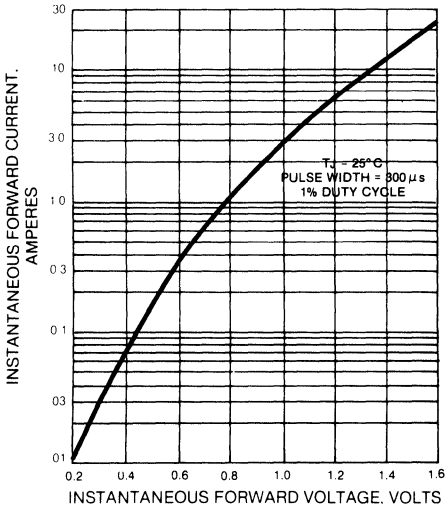


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

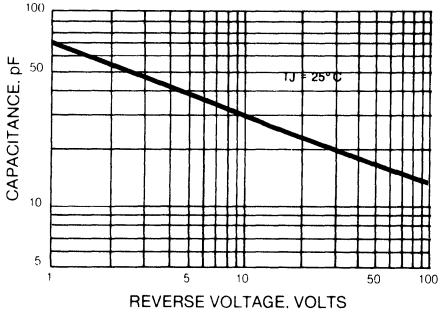


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS

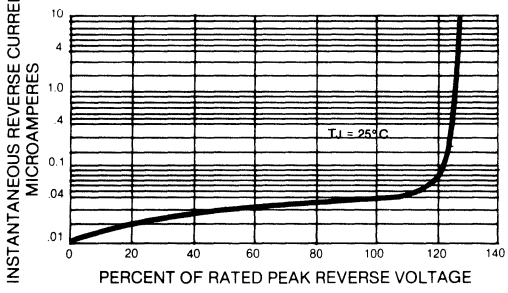
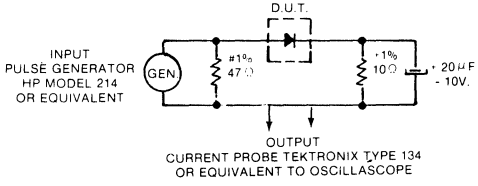
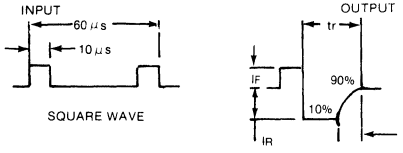


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM





FAST RECOVERY GLASS PASSIVATED RECTIFIERS 1.0 AMPERE TO 3.0 AMPERES 50 VOLTS TO 1000 VOLTS

1N4942 THRU 1N4948

MINIATURE GLASS PASSIVATED JUNCTION FAST SWITCHING RECTIFIER

GENERAL INSTRUMENT

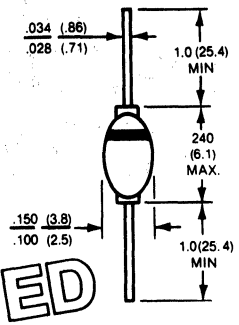
VOLTAGE RANGE
200 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

- High temperature metallurgically bonded — no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in DO-204AP package.
- 1 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 0.5 μA
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- High temperature soldering guaranteed 350°C/ 10 seconds/.375", (9.5mm) lead length at 5 lbs. (2.3kg) tension

DO-204AP



MECHANCIAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce, .56 gram

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N4942	1N4944	1N4946	1N4947	1N4948	UNITS
* Maximum Recurrent Peak Reverse Voltage	200	400	600	800	1000	V
Maximum RMS Voltage	140	280	420	560	700	V
* Maximum DC Blocking Voltage	200	400	600	800	1000	V
* Minimum Avalanche Breakdown Voltage at 50μ A	220	440	660	880	1100	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Lengths at T_A = 55°C	1.0					A
* Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	25.0					A
* Maximum Instantaneous Forward Voltage at 1.0A	1.3					V
* Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 150°C	1.0 200					μA μA
* Maximum Reverse Recovery Time (Note 1)	150	150	250	250	500	ns
Typical Junction Capacitance (Note 2)	15					pF
* Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175					°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. Available to Jan and Jan TX Military Specifications MIL-S-195000/359.
* JEDEC Registered Values.

RATING AND CHARACTERISTIC CURVES
1N4942 THRU 1N4948 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

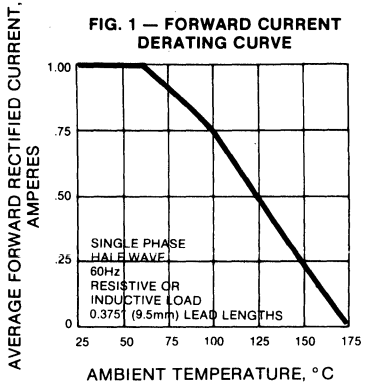


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

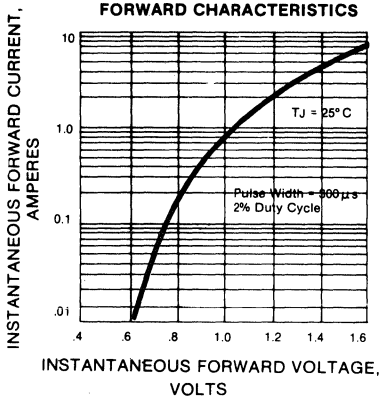


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

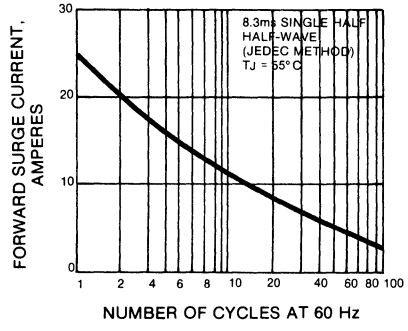


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

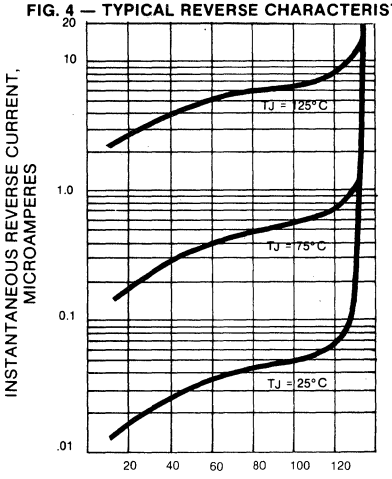


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

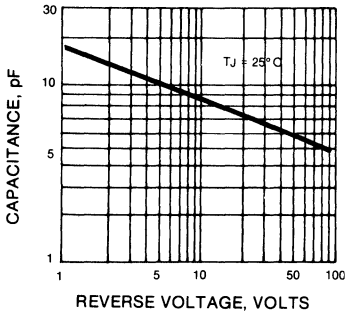
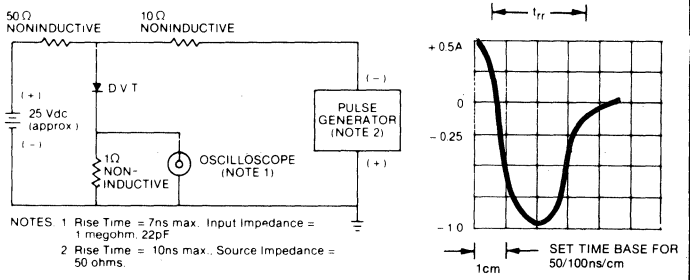


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



1N5615 THRU 1N5623

MINIATURE GLASS PASSIVATED JUNCTION FAST SWITCHING RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
200 to 1000 volts

CURRENT
1.0 Ampere

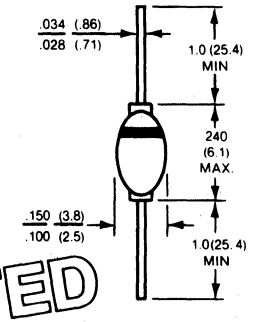
FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in DO-204AP package.
- 1 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 0.1 μA
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- High temperature soldering guaranteed 350°C/10 seconds/.375", (9.5mm) lead lengths at 5 lbs.,(2.3kg) tension

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce, .56 gram

DO-204AP



PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,791 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5615	1N5617	1N5619	1N5621	1N5623	UNITS
* Maximum Recurrent Peak Reverse Voltage	200	400	600	800	100	V
Maximum RMS Voltage	140	280	420	560	700	V
* Maximum DC Blocking Voltage	200	400	600	800	1000	V
* Minimum Avalanche Breakdown Voltage at 50 μA	220	440	660	880	1100	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Lengths at T_A = 55°C	1.0					A
* Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50.0					A
* Maximum Instantaneous Forward Voltage at 1.0A	1.2					V
* Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 100°C T_A = 200°C	0.5 25.0 1500					A μA μA
* Maximum Reverse Recovery Time (Note 1)	150	150	250	300	500	ns
* Maximum Junction Capacitance (Note 2)	45	35	25	20	15	pF
* Operating Temperture Range, T_J	-65 to +175					°C
* Storage Temperature Range, T_{STG}	-65 to +200					°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 12 volts.
3. Available to Jan and Jan TX Military Specifications MIL-S-19500/429.
* JEDEC Registered Value.

RATING AND CHARACTERISTIC CURVES 1N5615 THRU 1N5623 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

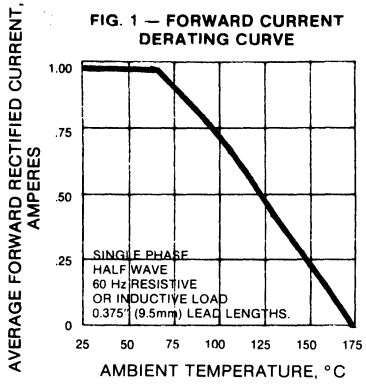


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

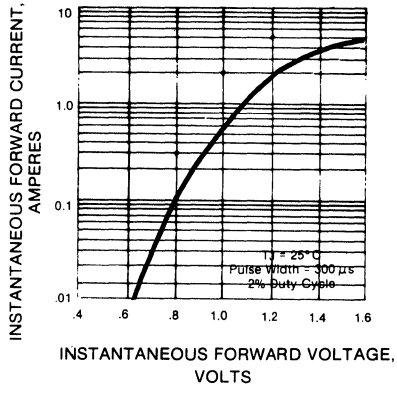


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

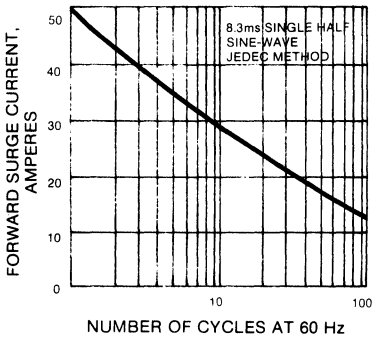


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

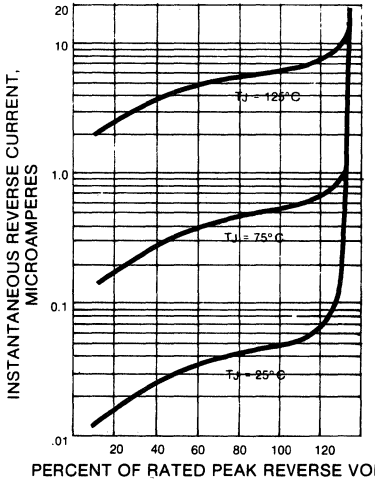


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

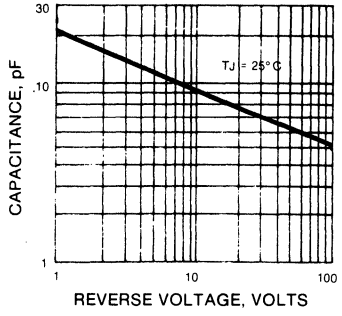
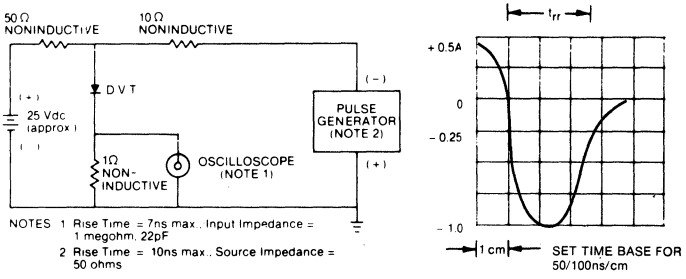


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



RG1 SERIES

MINIATURE GLASS PASSIVATED JUNCTION FAST SWITCHING RECTIFIER

GENERAL INSTRUMENT

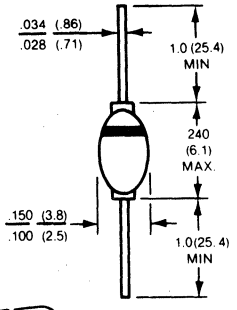
VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

- High temperature metallurgically bonded — no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in a DO-204AP package
- 1 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 1 μA
- Fast switching for high efficiency.
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3) tension

DO-204AP



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce, .56 gram

PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RG1A	RG1B	RG1D	RG1G	RG1J	RG1K	RG1M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	70	200	400	600	800	1000	V
Maximum Average Forward Rectified Current, .375" (9.5mm) Lead Length at T_A = 55°C	1.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30							A
Maximum Instantaneous Forward Voltage at 1.0A	1.3							V
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length at T_A = 25°C	1.0							μA
T_A = 100°C	100							μA
Maximum DC Reverse Current, at Rated DC Blocking Voltage	2.0							μA
Maximum Reverse Recovery Time (Note 1)	150	150	150	150	200	250	500	ns
Typical Junction Capacitance (Note 2)	10							pF
Operating and Storage Temperature Range, T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured with IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1.0MHz and applied reverse voltage of 4.0VDC.

RATING AND CHARACTERISTIC CURVES
RG1 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

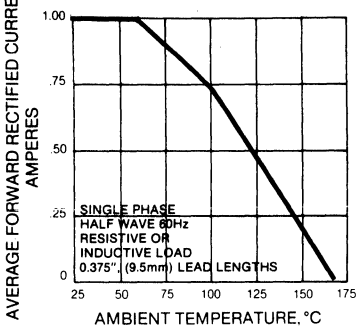


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

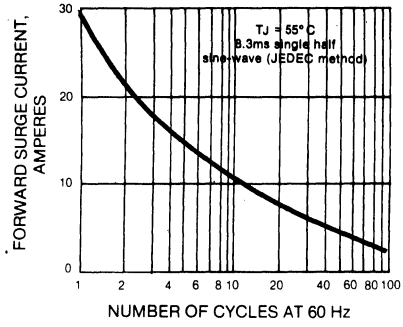


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

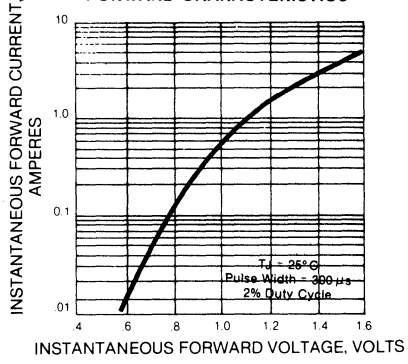


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

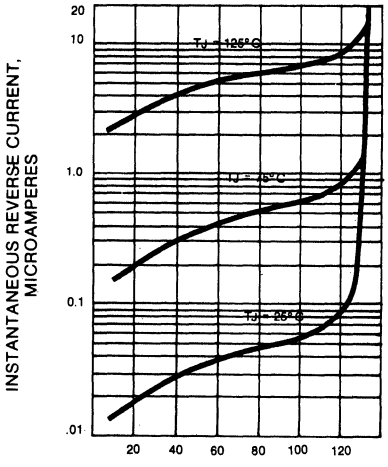


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

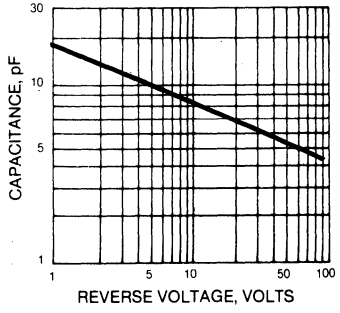
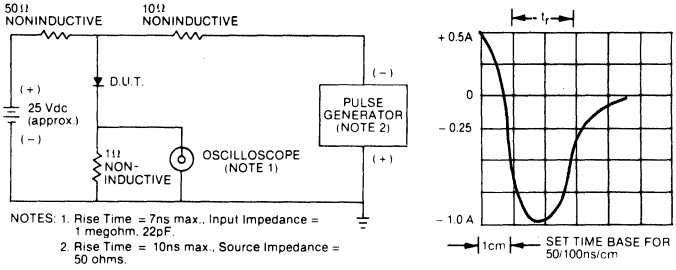


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



RG2 SERIES

MINIATURE GLASS PASSIVATED JUNCTION FAST SWITCHING RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts
CURRENT
2.0 Amperes

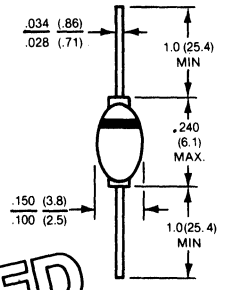
FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction in a DO-204AP package
- 2.0 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 1μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .02 ounce .56 gram

DO-204AP



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RG2A	RG2B	RG2D	RG2G	RG2J	RG2K	RG2M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	2.0							A
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	50							A
Maximum Instantaneous Forward Voltage at 2.0A	1.3							V
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length at T_A = 25°C	1.0							μA
T_A = 100°C	100							μA
Maximum DC Reverse Current, at Rated DC Blocking Voltage	5.0							μA
Maximum Reverse Recovery Time (Note 1)	150	150	150	150	200	250	500	ns
Typical Junction Capacitance (Note 2)	20							pF
Operating and Storage Temperature Range T_J, T_{STG}	−65 to +175							°C

NOTES:
1—Measured with I_F = .5A, I_R = 1A, I_{rr} = .25A
2—Measured at 1.0 MHz and applied reverse voltage of 4.0 V_{DC}

RATING AND CHARACTERISTIC CURVES
RG2 SERIES

FIG. 1—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

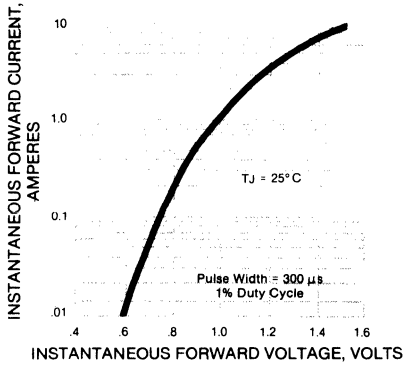


FIG. 2— FORWARD CURRENT DERATING CURVE

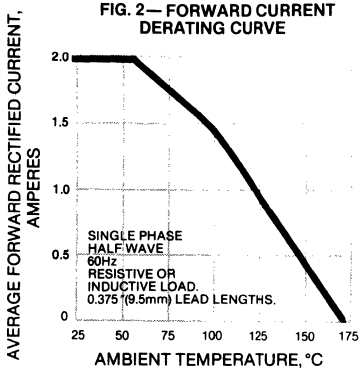


FIG. 3—TYPICAL JUNCTION CAPACITANCE

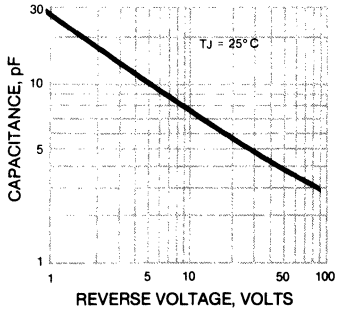


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

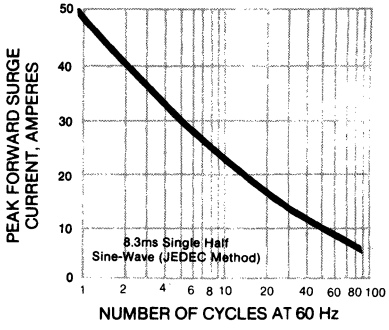
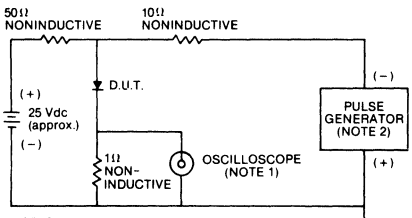
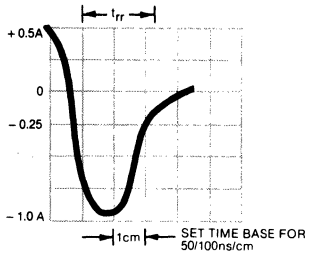


FIG. 5—REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.



1N5415 THRU 1N5420

FAST SWITCHING GLASS PASSIVATED SILICON RECTIFIER

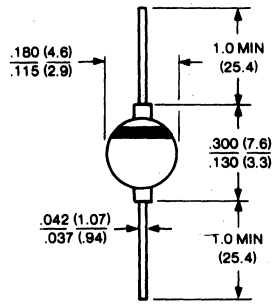
GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 600 Volts

CURRENT
3.0 Amperes

FEATURES

- Glass passivated junction
- High temperature metallurgically bonded — no compression contacts as found in many competitive devices
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
  3.0 Ampere operation at T_A = 55°C with no thermal runaway
- High temperature soldering guaranteed: 350°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension



MECHANICAL DATA

Case: One piece glass hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .037 ounce, 1.04 grams

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5415	1N5416	1N5417	1N5418	1N5419	1N5420	UNITS
* Maximum Recurrent Peak Reverse Voltage	50	100	200	400	500	600	V
Maximum RMS Voltage	35	70	140	280	350	420	V
* Maximum DC Blocking Voltage	50	70	200	400	500	600	V
* Minimum Reverse Breakdown Voltage at 50 μA	55	110	220	440	550	660	V
* Maximum Average Foward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°c	3.0						A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	80						A
Maximum Instantaneous Forward Voltage at 3.0A*	1.1						V
9.0A	1.5						V
Maximun DC Reverse Current at T_A = 25°C	1.0						μA
Rated DC Blocking Voltage T_A = 100°C	20						μA
Maximum Junction Capacitance (Note 1)	550	430	250	165	140	120	pF
* Maximum Reverse Recovery Time (Note 2)	150	150	150	150	250	400	ns
Operating Temperature Range T_J	-65 to +175						°C
* Storage Temperature Range T_{STG}	-65 to +175						°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
3. Available to JAN and JANTX Military Specifications MIL-S-19500/411.
* JEDEC Registered Values

RATING AND CHARACTERISTIC CURVES
1N5415 THRU 1N5420

FIG. 1 — FORWARD CURRENT DERATING CURVE

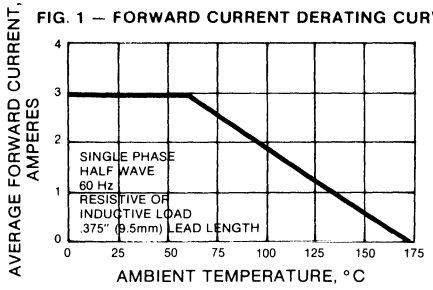


FIG 2 — MAXIMUM NON-REPETITIVE PEAK SURGE CURRENT

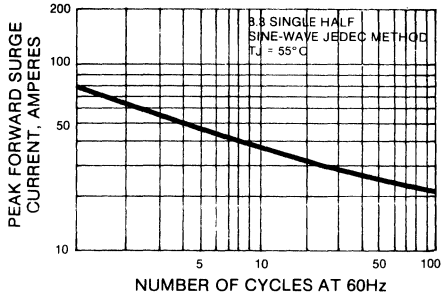


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

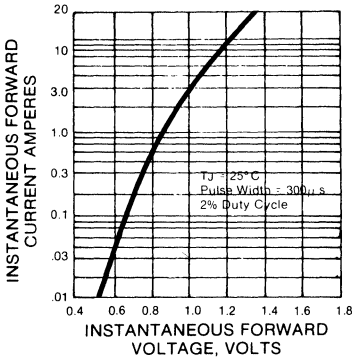


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

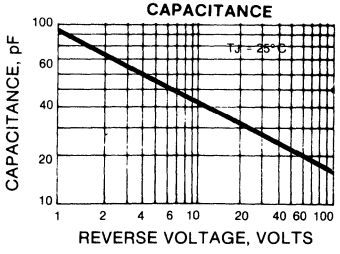


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS

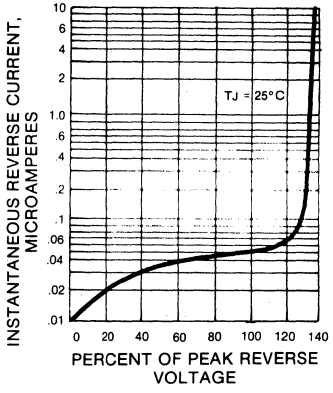
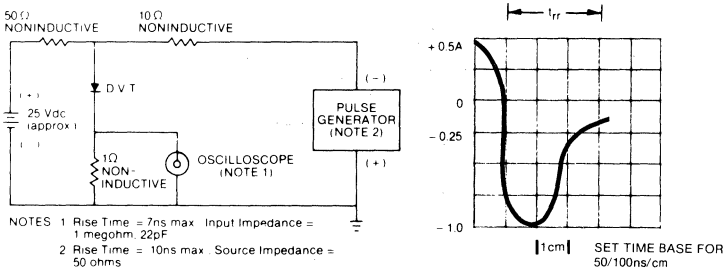


FIG. 6 — TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES 1 Rise Time = 7ns max Input Impedance = 1 megohm, 22pF
2 Rise Time = 10ns max Source Impedance = 50 ohms

RG3 SERIES

FAST SWITCHING GLASS PASSIVATED SILICON RECTIFIER

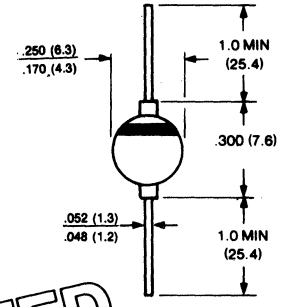
GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
3.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction
- 3 ampere operation at T_A = 55°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- High temperature soldering guaranteed 350°C/10 seconds/.375" (9.5mm) lead lengths/5 lbs., (2.3kg) tension



MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .04 ounce, 1.1 gram

PATENTED
Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RG3A	RG3B	RG3D	RG3G	RG3J	RG3K	RG3M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Current .375", (9.5mm) Lead Length at T_A = 55°C	3.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	100							A
Maximum Instantaneous Forward Voltage at 3.0A	1.3							V
Maximum Average Reverse Current at T_A = 25°C Rated Peak Reverse Voltage T_A = 100°C	2.0 100							μA μA
Maximum DC Reverse Current, at Rated DC Blocking Voltage T_J = 25°C	5.0							μA
Maximum Reverse Recovery Time (Note 1)	150				250	400	500	ns
Typical Junction Capacitance (Note 2)	40							pF
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured with I_F = .5A, I_R = 1A, I_{rr} = .25A.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC.

RATING AND CHARACTERISTIC CURVES
RG3 SERIES

FIG. 1 — FORWARD RETIFIED CURRENT DERATING CURVE

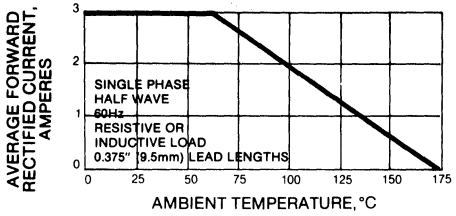


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

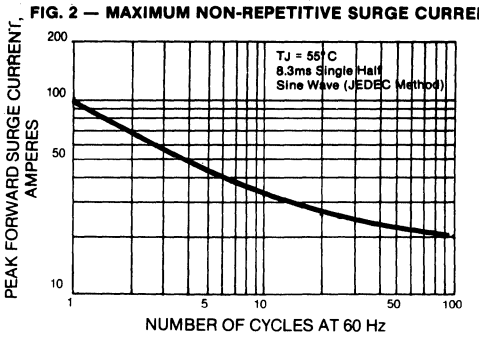


FIG. 3—TYPICAL JUNCTION CAPACITANCE

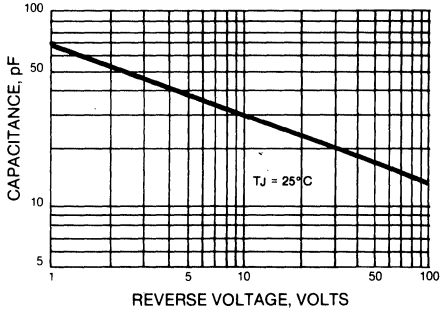


FIG. 4— TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

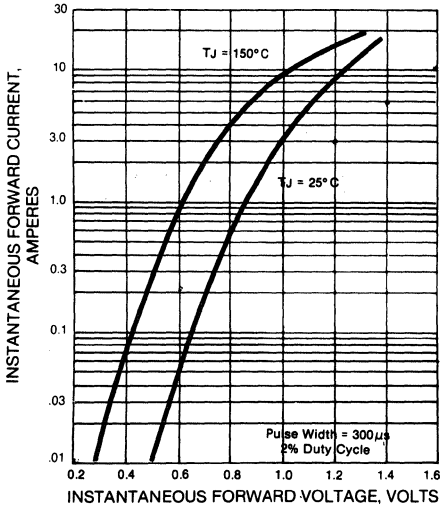


FIG. 5 — TYPICAL REVERSE CHARACTERTISTICS

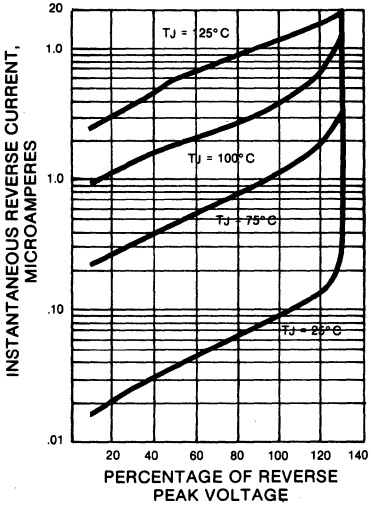
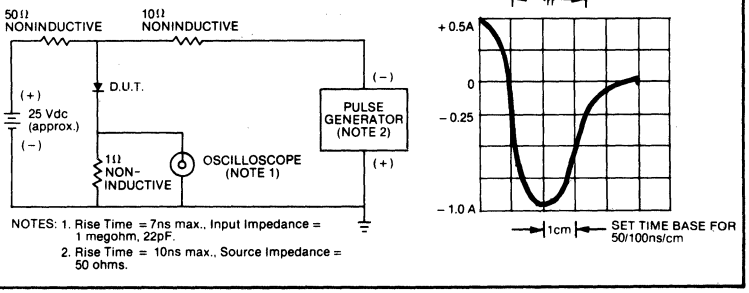


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

RG4 SERIES

GLASS PASSIVATED SILICON RECTIFIER

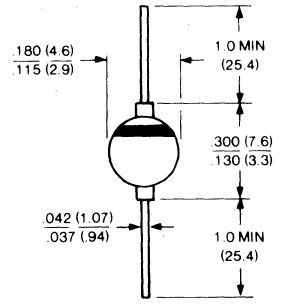
GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
3.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in many competitive devices
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- 3.0 ampere operation at T_A = 50° C with no thermal runaway
- Glass composition is covered by Patent No. 3,752,701-1971
- High temperature soldering guaranteed: 350° C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension
- Typical I_R less than 1 μ A



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: One piece glass, hermetically sealed
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: .037 ounce, 1.04 grams

PATENTED

Brazed-lead assembly is covered by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RG4	RG4B	RG4D	RG4G	RG4J	RG4K	RG4M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 50° C	3.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	100							A
Maximum Instantaneous Forward Voltage at 3.0A	1.3							V
Maximum Reverse Current, at Rated DC Blocking Voltage T_A = 25° C	5.0							μA
Maximum Average Reverse Current T_A = 25° c	2.0							μA
at Peak Reverse Voltage T_A = 100° C	100							μA
Typical Junction Capacitance (Note 1)	50							pF
Maximum Reverse Recovery Time (Note 2)	150	150	150	150	250	500	500	ns
Storage and Operating Temperature Range T_{STG}, T_J	-65 to +175							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 Volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
RG4 SERIES

Fig. 1—FORWARD CURRENT DERATING CURVE

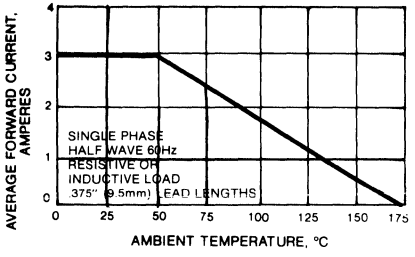


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

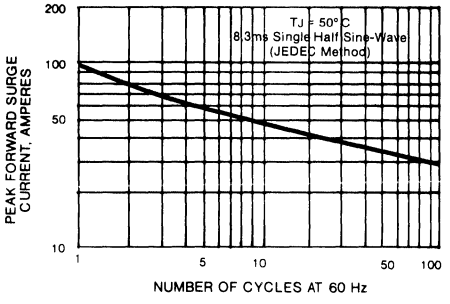


Fig. 3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

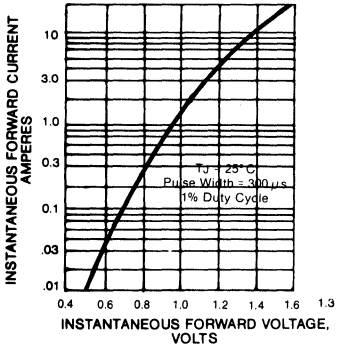


Fig. 4—TYPICAL JUNCTION CAPACITANCE

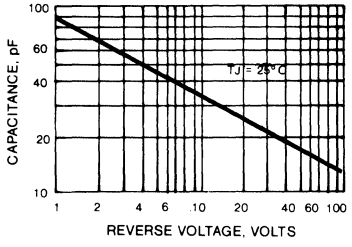


Fig. 5—TYPICAL REVERSE CHARACTERISTICS

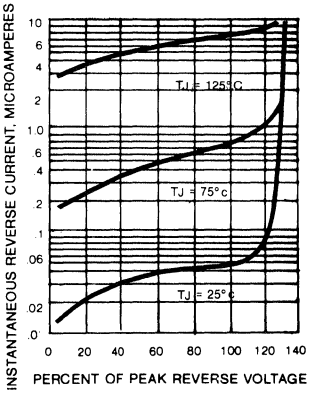
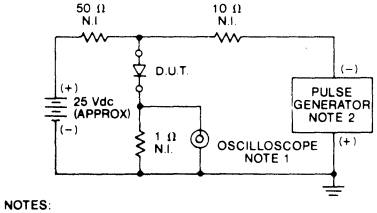
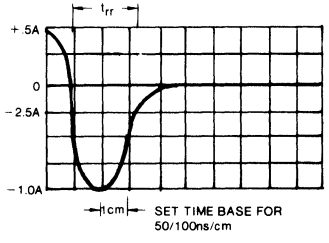


Fig. 6—TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES:
1. RISE TIME = 7ns MAX. INPUT IMPEDANCE = 1 MEGOHM, 22pF.
2. RISE TIME = 10ns MAX. SOURCE IMPEDANCE = 50 OHM.



PLASTIC RECTIFIERS 1.0 AMPERE TO 6.0 AMPERES

GENERAL INSTRUMENT

Plastic Rectifier

1.0 to 30 Amperes

50 V to 1000 V

Principle of Construction

General Instrument has produced successfully for many years Plastic Rectifiers. The key factor of our Plastic Rectifiers is the use of the cell concept.

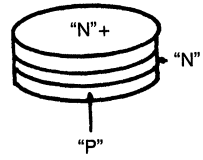
The small size allows many cells to be processed simultaneously in batch form.

This method ensures accurate pretesting of the cells before final assembly, and allows General Instrument to produce high volume of Rectifiers economically.

The cell construction consists of the following steps:

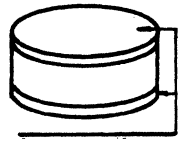
1—Diffusing a PN junction into a slice of silicon.

Diffused Slice



2—Metallizing the slice of silicon.

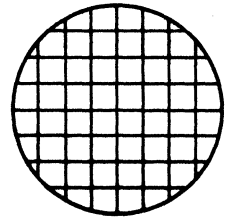
Metallized Slice



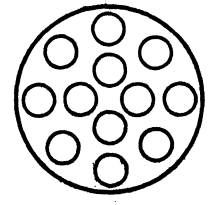
Gold and
Nickel Plating

3—Scribing and breaking the slice into individual dies, for the 1.0 Ampere devices or sandblasting for the 6.0 thru 25.0 Ampere devices.

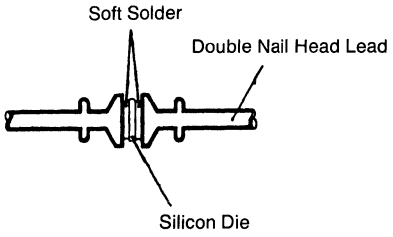
Scribed Wafer



Sandblasted Round Dice



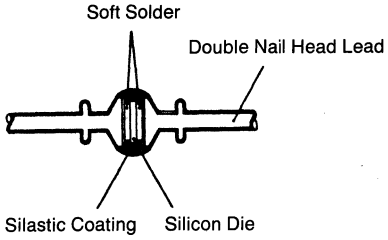
4—Soldering the die between two Double Nail Head Leads.



Soldering die between Double Nail Head Lead

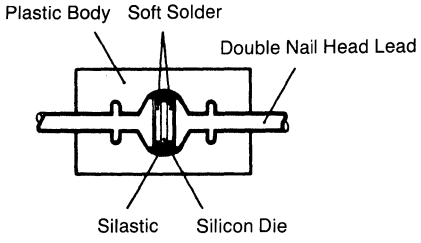
5—Cleaning the assembly by chemical etching, washing and drying.

6—Passivating the finished rectifier with silastic.



7—Overmolding by General Instrument proprietary 4B flame retardant molding compound.

8—Lead tinning, electrical testing marking and packing.



Double Nail Head Plastic Rectifier

Miniature Plastic Silicon Rectifiers 1.0 to 1.5 AMPERES

Types: 1N4001 thru 1N4007
M100A thru M100M
1N5391 thru 1N5399

Features:
- Low Cost
- Diffused Junction
- Low Leakage
- High Current Capability
- Easily Cleaned with Freon, Alcohol, Chlorothene and similar Solvents
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208
- Case: Jedec DO 41
- High Temperature Soldering Guaranteed 300°C/10 Seconds/.375", 10mm Lead Length at 2.25 kg Tension

Plastic Power Rectifiers 3.0 to 6.0 AMPERES

Types: 1N5400 thru 1N5408
P300A thru P300M
GI500 thru GI510
GI750 thru GI758
P600A thru P606M

Features:
- High Surge Current Capability
- Void-Free Plastic Packages
- High Current Operation
- Typical I_R less than 1 μA
- Exceeds Environmental Standards of MIL-STD-19500
- High Temperature Soldering Guaranteed 300°C/.375" 10 Seconds/10mm Lead Length at 2.25 kg Tension
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208

High Current Silicon Rectifiers 8.0 to 30 AMPERES

Types: NS8AT thru NS8MT NP30AM thru NP30MM
NP16AT thru 16MT
AR25A thru AR25M
ARS25A thru ARS25M

Features:
- High Surge Capability
- High Current Capability
- Low Forward Voltage
- Low Leakage

Fast Recovery Plastic Silicon Recfiers 1.0 to 30 AMPERES

Types:

1N4933	thru 1N4937	GI820	thru GI826
SRP100A	thru SRP100K	SRP600A	thru SRP600K
GI910	thru GI918	RS8AT	thru RS8MT
GI850	thru GI856	RP16AT	thru RP16KT
SRP300A	thru SRP300K	RP30AM	thru RP30MM

Features:
- High Surge Current Capability
- Void-Free Plastic Packages
- High Current Operation
- Typical I_R less than 1 μA
- Exceeds Environmental Standards of MIL-STD-19500
- High Temperature Soldering Guaranteed 300°C/10 Seconds/.375",10mm Lead Length at 2.25 kg Tension
- Controlled Soft Recovery Guarantees low RFI and high Efficiency Switching Characteristics of SRP100A thru SRP100K, SRP300A thru SRP300K and SRP600A thru SRP600K
- Tin Plated Axial Leads, Solderable per MIL-STD-202/208

GENERAL INSTRUMENT

QUICK GUIDE TO PLASTIC RECTIFIERS

TYPE	1N4001 thru 1N4007	M100A thru M100M	1N4933* thru 1N4937	SRP100A* thru SRP100K	IN5391 thru 1N5399	1N5400 thru 1N5408	P300A thru P300M	GI500 thru GI510	GI910* thru GI918	GI850* thru GI856*	SRP300A* thru SRP300K	TYPE
CASE	DO41	DO41	DO41	DO41	DO41	DO201AD	DO201AD	DO201AD	DO201AD	DO201AD	DO201AD	CASE
I_o (A)	1.0	1.0	1.0	1.0	1.5	3.0	3.0	3.0	3.0	3.0	3.0	I_o (A)
@T_A (°C)	75	100	75	55	75 at T_L	105	105	95	90	90	55	@T_A (°C)
V_R = 50 (V)	1N4001	M100A	1N4933	SRP100A	1N5391	1N5400	P300A	GI500	GI910	GI850	SRP300A	V_R = 50 (V)
V_R = 100 (V)	1N4002	M100B	1N4934	SRP100B	1N5392	1N5401	P300B	GI501	GI911	GI851	SRP300B	V_R = 100 (V)
V_R = 200 (V)	1N4003	M100D	1N4935	SRP100D	1N5393	1N5402	P300D	GI502	GI912	GI852	SRP300D	V_R = 200 (V)
V_R = 300 (V)					1N5394	1N5403						V_R = 300 (V)
V_R = 400 (V)	1N4004	M100G	1N4936	SRP1006	1N5395	1N5404	P300G	GI504	GI914	GI854	SRP300G	V_R = 400 (V)
V_R = 500 (V)					1N5396	1N5405					⅛ = 500 (V)	V_R = 500 (V)
V_R = 600 (V)	1N4005	M100J	1N4937	SRP100J	1N5397	1N5406	P300J	GI506	GI916	GI856	SRP300J	V_R = 600 (V)
V_R = 800 (V)	1N4006	M100K		SRP100K	1N5398	1N5407	P300K	GI508	GI917		SRP300K	V_R = 800 (V)
V_R = 1000 (V)	1N4007	M100M			1N5399	1N5408	P300M	GI510	GI918			V_R = 1000 (V)
V_R > 1000 (V)												V_R > 1000 (V)
SURGE (A)	30	50	30	30	50	200	200	100	100	100	150	SURGE (A)
V_F (V)	1.1	1.0/1.1	1.2	1.3	1.4	1.2	1.1	1.1	1.25	1.25	1.3	V_F (V)
Page	262	264	290	292	266	268	272	270	294	296	298	Page

*Fast Recovery

GENERAL INSTRUMENT

QUICK GUIDE TO PLASTIC RECTIFIERS

TYPE	GI750 thru GI758	P600A thru P600M	GI820* thru GI826*	SRP600A thru SRP600K	NS8AT thru NS8MT	RS8AT* thru RS8KT*	NP16AT thru NP16KT	RP16AT* thru RP16KT	AR25A thru AR25M	NP30AM thru NP30MM	RP30AM* thru RP30MM*	TYPE
CASE	P600	P600	P600	P600	TO220	TO220	TO220CT	TO220CT	AR25	TO3	TO3	CASE
I_o (A)	6.0	6.0	5.0	6.0	8.0	8.0	16	16	25	30	30	I_o (A)
@T_A (°C)	60	60	55	55	100T_C	100T_C	100T_C	100T_C	150T_C	100T_C	100T_C	@T_A (°C)
V_R = 50 (V)	GI750	P600A	GI820	SRP600A	NS8AT	RS8AT	NP16AT	RP16AT	AR25A	NP30AM	RP30AM	V_R = 50 (V)
V_R = 100 (V)	GI751	P600B	GI821	SRP600B	NS8BT	RS8BT		RP16BT	AR25B	NP30BM	RP30BM	V_R = 100 (V)
V_R = 200 (V)	GI752	P600D	GI822	SRP600D	NS8DT	RS8DT	NP16BT	RP16DT	AR25D	NP30DM	RP30DM	V_R = 200 (V)
V_R = 400 (V)	GI754	P600G	GI824	SRP600G	NS8GT	RS8GT	NP16GT	RP16GT	AR25G	NP30GM	RP30GM	V_R = 400 (V)
V_R = 600 (V)	GI756	P600J	GI826	SRP600J	NS8JT	RS8JT	NP16JT	RP16JT	AR25J	NP30JM	RP30JM	V_R = 600 (V)
V_R = 800 (V)	GI758	P600K		SRP600K	NS8KT	RS8KT	NP16KT	RP16KT	AR25K	NP30KM	RP30KM	V_R = 800 (V)
V_R = 1000 (V)		P600M			NS8MT		NP16MT		AR25M	NP30MM	RP30MM	V_R = 1000 (V)
V_R > 1000 (V)												V_R > 1000 (V)
SURGE (A)	400	400	300	300	175	150	300	400	400	300	200	SURGE (A)
V_F (V)	.9/.95	.9/1.0	1.0	1.3	1.1	1.3	1.1	1.2/1.3	1.0	1.1	1.3/1.4	V_F (V)
Page	274	276	300	302	280	306	282	308	284	286	310	Page

*Fast Recovery

1N4001 THRU 1N4007

MINIATURE PLASTIC SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts
CURRENT
1.0 Ampere

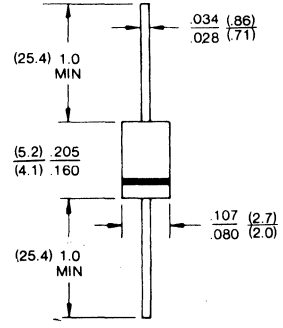
FEATURES

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0.
- Low cost
- Diffused junction
- Low leakage
- High current capability
- Easily cleaned with Freon, alcohol, Chlorothene and similar solvents
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 300°C/ 10 seconds/.375", (9.5mm) lead lengths at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: JEDEC DO-41, molded case
Terminals: Plated axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode end
Weight: 0.012 ounce, 0.3 gram
Mounting Position: Any
Handling precautions: None

DO-41



All dimensions inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNITS
* Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
* Maximum RMS Voltage	35	70	140	280	420	560	700	V
* Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
* Maximum Average Forward Rectified Current .375", (4.5mm) lead lengths at T_A = 75°C	1.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30							A
* Maximum Instantaneous Forward Voltage at 1.0A	1.1							V
* Maximum Full Load Reverse Current Full Cycle Average .375", (9.5mm) lead lengths at T_L = 75°C	30							μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 100°C	5.0 50.0							μA μA
Typical Reverse Recovery Time (Note 1)	30							μs
Typical Junction Capacitance (Note 2)	30							pF
Typical Thermal Resistance Θ_{JA} (Note 3)	50							°C/W
* Operating and Storage Temperature Range, T_J, T_{STG}	-65 to +175							°C

NOTES:
1-Measured on Tektronix Type "S" recovery plug-in, Tektronix 545 Scope or equivalent, I_{FM} = 20mA, I_{RM} = 1mA.
2-Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts.
3-Thermal Resistance from Junction to Ambient .375", (9.5mm) lead lengths.
* JEDEC Registered Value.

FIG. 1 — FORWARD CURRENT DERATING CURVE

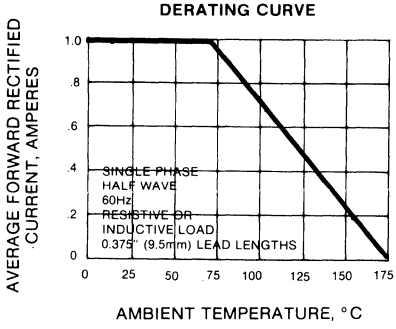


FIG. 2 — TYPICAL FORWARD CHARACTERISTICS

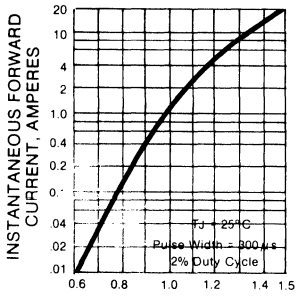


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

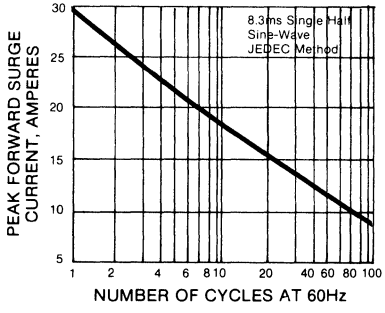


FIG. 4 — PEAK FORWARD SURGE CURRENT

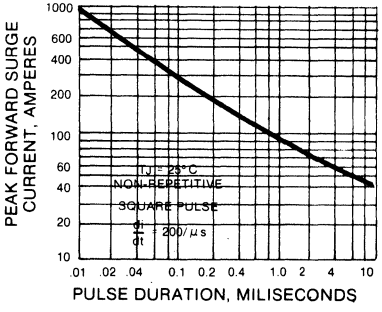


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

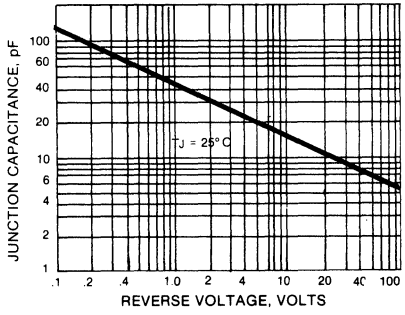
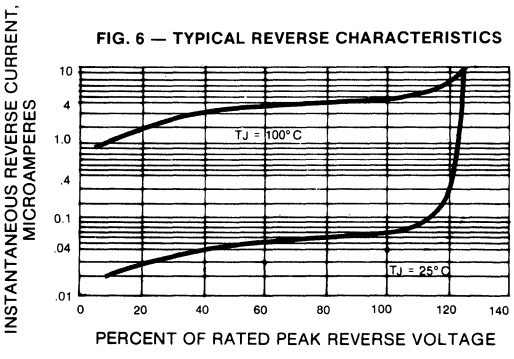


FIG. 6 — TYPICAL REVERSE CHARACTERISTICS



M100 SERIES

MINIATURE PLASTIC SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.0 Ampere

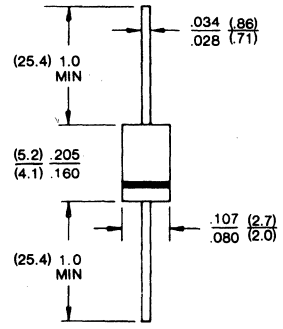
FEATURES:

- Low cost
- Diffused junction
- High surge current capability
- Plastic material carries U/L recognition 94V-0. It is General Instrument's proprietary 4B Flame-retardant epoxy molding compound.
- Typical I_R less than 0.5μA
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed: 350°C/10 seconds/.375", 9.5mm lead length/5 lbs, 11 kg tension.

MECHANICAL DATA:

Case: JEDEC DO-41, molded case
Terminals: Plated axial leads, solderable per MIL-STD 202, Method 208
Polarity: Color band denotes cathode end
Weight: 0.012 ounce, 0.3 gram
Mounting position: Any

DO-41



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

At T_A = 25°C unless otherwise specified. Single phase, half-wave, 60 Hz, resistive or inductive load.

	M100A	M100B	M100D	M100G	M100J	M100K	M100M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375" (9.5mm) Lead Length at T_A = 100°C	1.0							A
Maximum Overload Surge Current 1 Cycle	50							A
Maximum Forward Voltage at 1.0Adc	1.0					1.1		V
Maximum Full Load Reverse Current Full Cycle Average .375" (9.5mm) Lead Length at T_A = 100°C	100							μA
Maximum DC Reverse Current at Rated DC Blocking Voltage	1.0							μA
Typical Reverse Recovery Time (Note 1)	20							μS
Typical Junction Capacitance (Note 2)	25							pF
Operating and Storage Temperature Range T_A	-65 to +175							°C

NOTES:
1. Measured on Tektronix Type "S" recovery plug-in Tektronix 545 Scope (or equiv). I_{FM} = 20mA, I_{RM} = 1.0mA
2. Measured at 1MHZ and applied reverse voltage of 4.0 volts.

Fig. 1—TYPICAL FORWARD CHARACTERISTICS

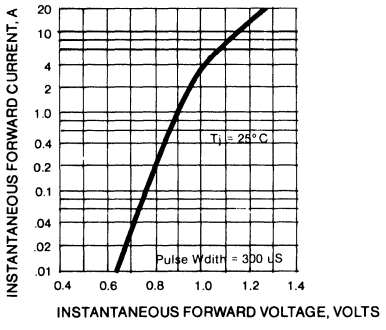


Fig. 2 — TYPICAL JUNCTION CAPACITANCE

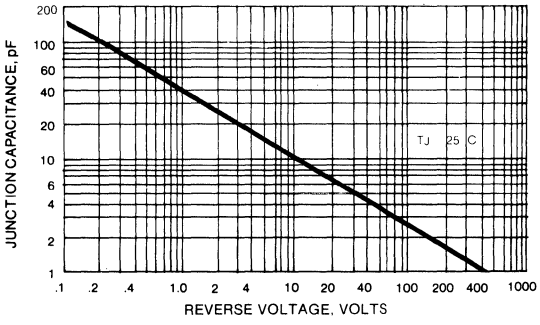


Fig. 3—MAXIMUM OVERLOAD SURGE—CURRENT

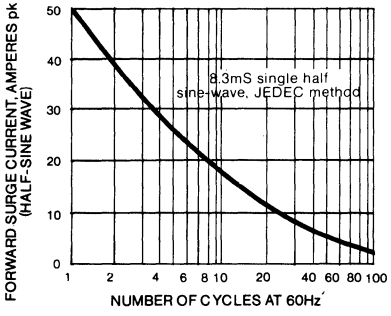


Fig. 4—PEAK FORWARD SURGE CURRENT

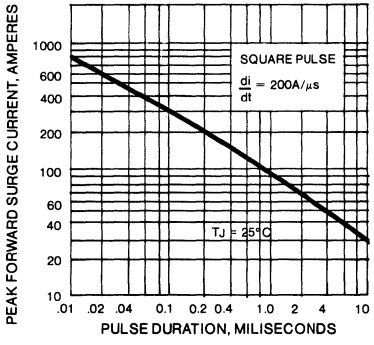
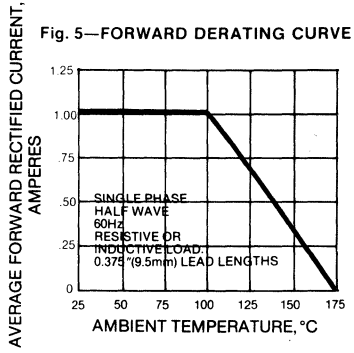


Fig. 5—FORWARD DERATING CURVE



1N5391 THRU 1N5399

MINIATURE PLASTIC SILICON RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts
CURRENT
1.5 Amperes

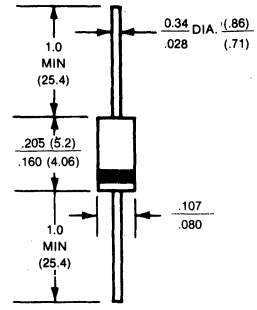
FEATURES

- High surge current capability
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Exceeds environmental standards of MIL-STD-19500
- 1.5 ampere operation at T_L = 70°C with no thermal runaway.
- Typical I_R less than 1μA.
- Void-free Molded plastic
- High temperature soldering guaranteed: 300°C/10 seconds/.375", (9.5mm) lead length/5 lbs. (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: 0.015 ounces, 0.4 grams

DO-41



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

	1N5391	1N5392	1N5393	1N5394	1N5395	1N5396	1N5397	1N5398	1N5399	
*Maximum Recurrent Peak Reverse Voltage	50	100	200	300	400	500	600	800	1000	V
*Maximum RMS Voltage	35	70	140	210	280	350	420	560	700	V
*Maximum DC Blocking Voltage	50	100	200	300	400	500	600	800	1000	V
*Maximum Average Forward Rectified Current .386", 9.5mm Lead Length at T_L = 70°C	1.5									A
*Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50									A
*Maximum Instantaneous Forward Voltage at 1.5A, T_A = 70°C	1.4									V
*Maximum DC Reverse Current T_A = 25°C	5.0									μA
at Rated DC Blocking Voltage T_A = 150°C	300									μA
*Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) Lead Length at T_A = 70°C	300									μA
Typical Junction Capacitance (Note 1)	18									pF
Typical Reverse Recovery Time (Note 2)	2.0									μs
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175									°C

NOTES:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC.
2. Measured with IF = .5A, IR = .1A, Irr = .25a.
* JEDEC Registered Value.

RATING AND CHARACTERISTIC CURVES
1N5391 THRU 1N5399

FIG. 1 — FORWARD CURRENT DERATING CURVE

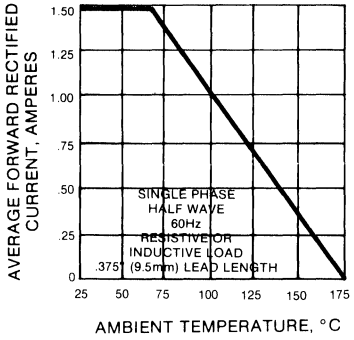


FIG. 2 — TYPICAL FORWARD CHARACTERISTICS

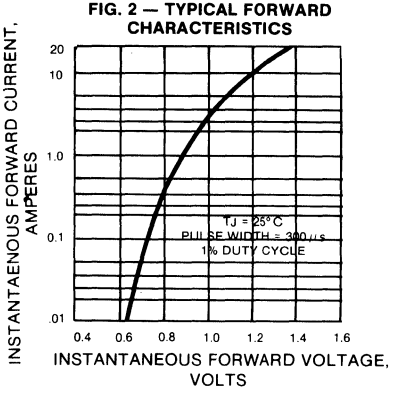


FIG. 3 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

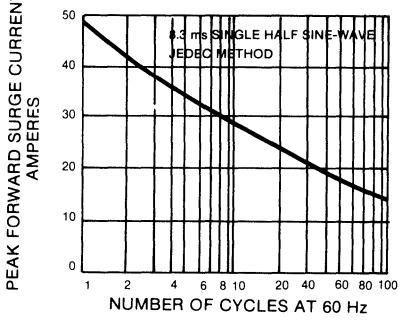


Fig. 4—TYPICAL JUNCTION CAPACITANCE

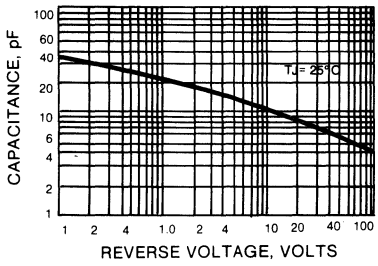
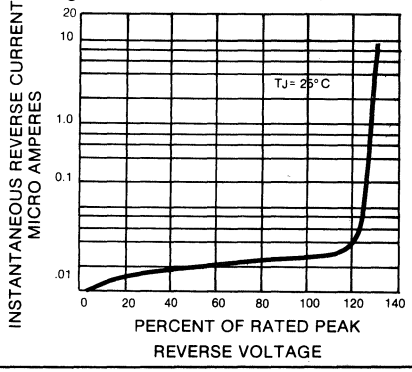


Fig. 5—TYPICAL REVERSE CHARACTERISTICS



1N5400 THRU 1N5408

PLASTIC SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
3.0 Amperes

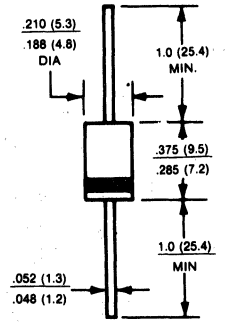
FEATURES

- High surge capability
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Void-free plastic in DO-201AD package
- 3.0 ampere operation at T_A = 105°C with no thermal runaway
- Typical I_R less than 1 μA
- Exceeds enviornmental standards of MIL-STD-19500
- High temperature soldering guaranteed 300°C/10 seconds/.375" (9.5mm) lead lengths/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: 0.04 ounce, 1.1 grams

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N5400	1N5401	1N5402	1N5403	1N5404	1N5405	1N5406	1N5407	1N5408	UNITS
* Maximum Recurrent Peak Reverse Voltage	50	100	200	300	400	500	600	700	800	V
Maximum RMS Voltage	35	70	140	210	280	350	420	560	700	V
* Maximum DC Blocking Voltage to T_A = 150°C	50	100	200	300	400	500	600	800	1000	V
* Maximum Average Forward Rectified Current, .5' (12.5mm) Lead Length at T_A = 105°C	3.0									A
* Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	200									A
* Maximum Instantaneous Forward Voltage at 3.0A	1.2									V
* Maximum Reverse Current, at Rated DC Blocking Voltage	T_A = 25°C: 10 T_A = 150°C: 500									μA μA
* Maximum Full Load Reverse Current, Full Cycle Average, .5", (12.5mm) Lead Length T_A = 105°C	500									μA
Typical Junction Capacitance (Note 1)	50									pF
* Storage Temperature Range T_{STG}	-65 to +175									°C
* Operating Temperature Range T_J	-65 to +170									°C

NOTES:
1. Measured at 1MHz and applied reverse voltage of 4.0 volts.
* JEDEC Registered Value.

RATING AND CHARACTERISTIC
1N5400 THRU 1N5408

FIG. 1 — FORWARD CURRENT DERATING CURVE

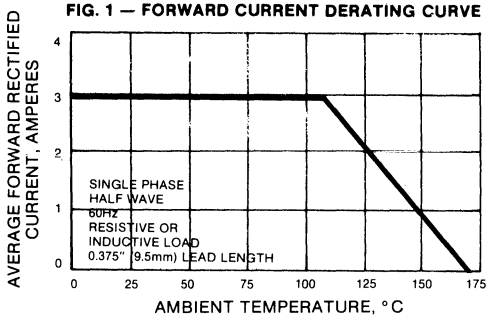


FIG. 2 — PEAK FORWARD SURGE CURRENT

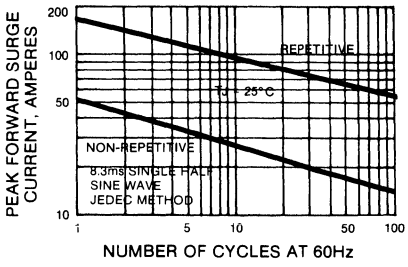


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

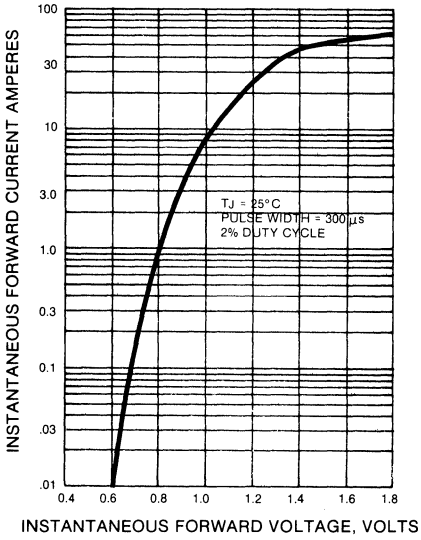


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

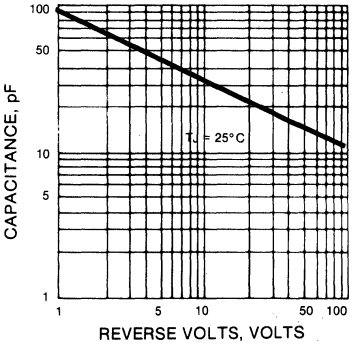
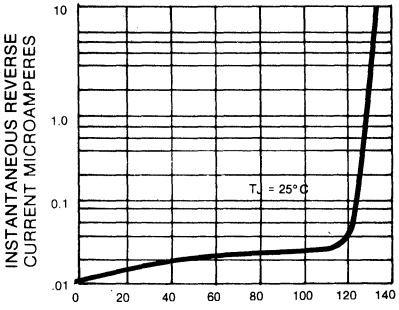


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



GI500 SERIES

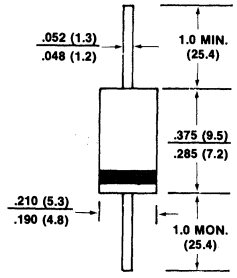
PLASTIC POWER RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
3.0 Amperes

DO-201AD



Dimensions in inches and (millimeters)

FEATURES

- High surge current capability
- Plastic material carries Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Void-free DO-201AD Package
- High current operation 3 Amperes at T_A = 95°C
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 300°C/10 seconds/.375" (9.5mm) lead lengths/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: .044 ounce, 1.25 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI500	GI501	GI502	GI503	GI506	GI508	GI510	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375" (9.5mm) Lead Length at T_A = 95°C	3.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	100							A
Maximum Instantaneous Forward Voltage, at 9.4A T_J = 25°C / T_J = 175°C	1.1 / 1.0							V
Maximum Reverse Current at Rated DC Blocking Voltage T_A = 25°C / T_A = 100°C	5.0 / 25.0							μA
Typical Junction Capacitance (Note 2)	28							pF
Typical Reverse Recovery Time I_F = .5A, I_R = 1A, I_{rr} = .25A	2.5							μs
Maximum Thermal Resistance, Junction to Ambient (Note 1)	28							°C/W
Storage and Operating Temperature Range T_A	-65 to +175							°C

NOTES:
1. Typical Printed Circuit Board Mounting, .375" (9.5mm) Lead Lengths.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES
GI500 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

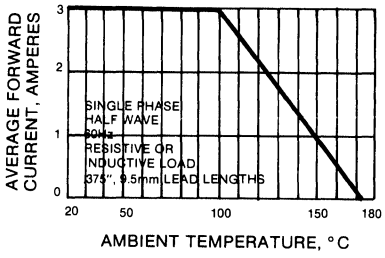


FIG. 2 — MAXIMUM PEAK FORWARD SURGE CURRENT

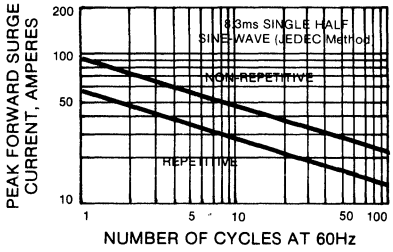


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

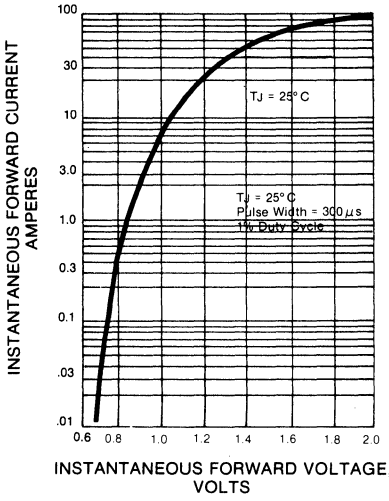


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

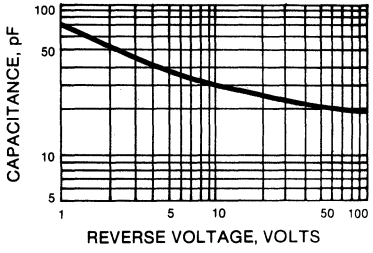
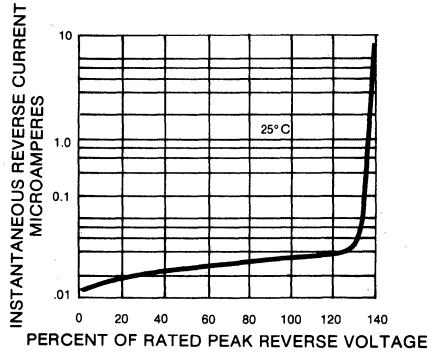


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



P300 SERIES

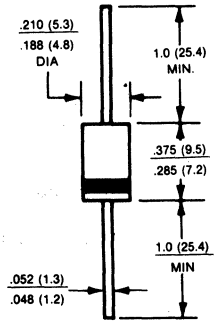
GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
3.0 Amperes

DO-201AD



Dimensions in inches and (millimeters)

FEATURES

- High surge current capability
- Plastic package has Underwriters Laboratory Flammability Classification
- Typical I_R less than 1 μA
- Void-free plastic in a DO-201AD package
- 3.0 ampere operation at T_A = 100°C with no thermal runaway
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 300°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: 0.04 ounce, 1.1 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	P300A	P300B	P300D	P300G	P300J	P300K	P300M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	70	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 100°C	3.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	200							A
Maximum Instantaneous Forward Voltage at 3.0A	1.2							V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C	5.0							μA
T_A = 100°C	25.0							μA
Typical Junction Capacitance (Note 1)	50							pF
Typical Reverse Recovery Time (Note 2)	5.0							μs
Storage and Operating Temperature Range T_J, T_{STG}	-65 to +175							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 Volts.
2. Reverse Recovery Test Conditions: IF = 0.5A, IR = 1.0A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
P300 SERIES

FIG. 1—FORWARD CURRENT DERATING CURVE

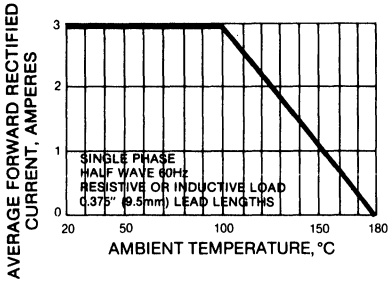


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

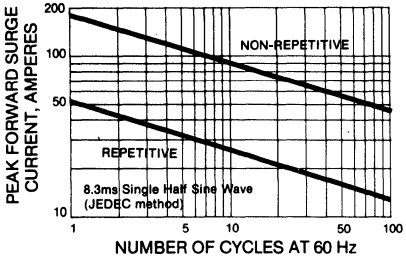


FIG. 3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

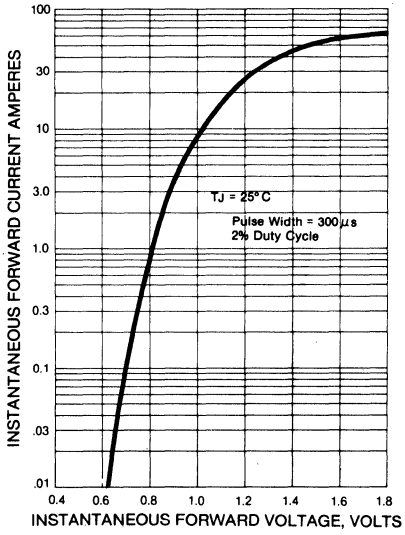


FIG. 4—TYPICAL JUNCTION CAPACITANCE

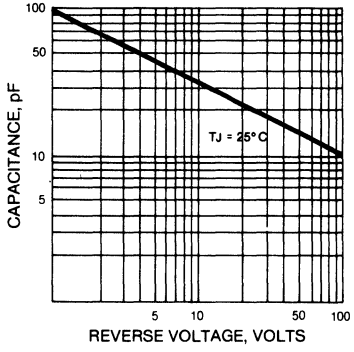
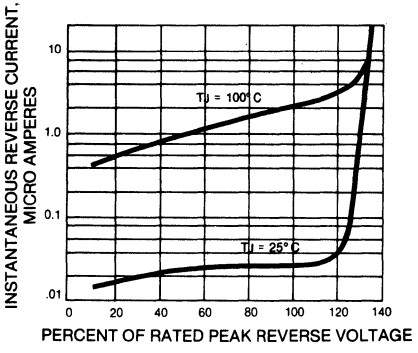


FIG. 5—TYPICAL REVERSE CHARACTERISTICS



GI750 SERIES

HIGH CURRENT PLASTIC SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 800 Volts

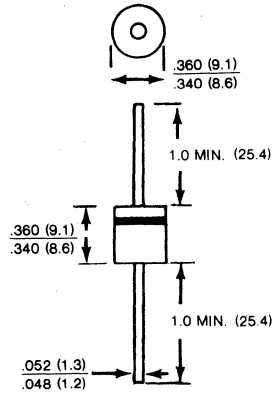
CURRENT
6.0 Amperes

FEATURES

- The plastic material has Underwriters Laboratory Flammability Classification 94V-0
- High Current Lead Mounted
- Diffused Junction
- Completely Insulated Case
- Uniform Molded Body
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 350° C/10 seconds/.375" (9.5mm) lead lengths/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic
Terminals: Axial leads solderable per MIL-STD-202, Method 208
Polarity: Band Denotes Cathode
Mounting Position: Any
Weight: 0.07 ounce, 2.1 grams



Dimensions in inches (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI750	GI751	GI752	GI754	GI756	GI758	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	V
Maximum RMS Voltage	35	70	140	280	420	560	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	V
Maximum Average Forward Rectified Current at T_A = 60° C P.C. Board Mounting T_L = 60° C .125", 3.18mm lead lengths	6.0 22						A A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	400						A
Maximum Instantaneous Forward Voltage at 6.0A 100A	0.90 1.25					0.95 1.3	V V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J = 25° C T_J = 100° C	25.0 1.0						μA mA
Typical Thermal Resistance ROJL at 0.5" (12.7mm) lead length	10.0						°C/W
Operating and Storage Temperature Range T_J, T_{STG}	-65° to +175						°C

RATING AND CHARACTERISTIC CURVES
GI750 SERIES

FIG. 1 — MAXIMUM FORWARD CURRENT DERATING CURRENT

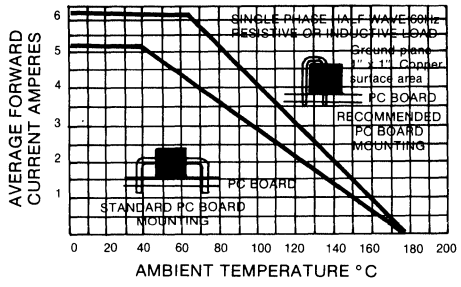


FIG. 2 — MAXIMUM FORWARD CURRENT DERATING CURVE

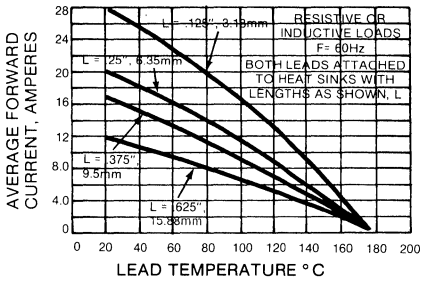


FIG. 3 — TYPICAL FORWARD CHARACTERISTICS

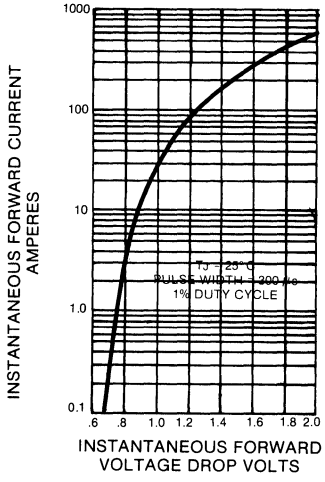


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

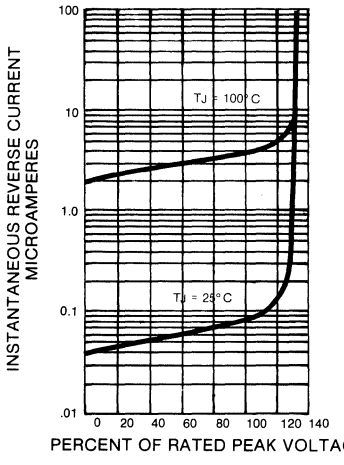


FIG. 5 — MAXIMUM PEAK FORWARD SURGE CURRENT

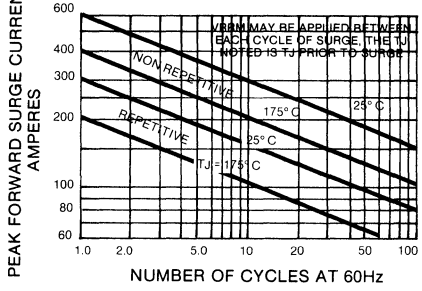
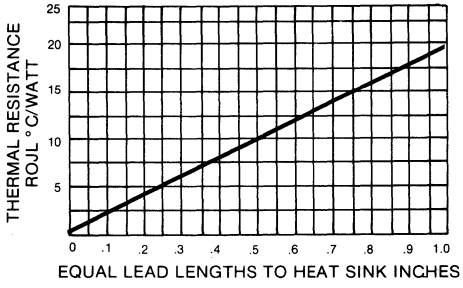


FIG. 6 — TYPICAL STEADY STATE THERMAL RESISTANCE



P600A THRU P600M

HIGH CURRENT PLASTIC SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

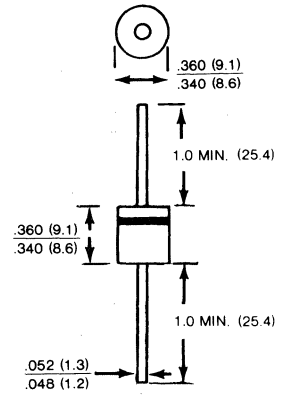
CURRENT
6.0 Amperes

FEATURES

- High Current Lead Mounted
- Diffused Junction
- High Surge Capability
- Low Forward Voltage Drop
- Completely Insulated Case
- Uniform Molded Body
- The plastic material carries U/L recognition 94V-0
- High temperature soldering guaranteed 300°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded Plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color Band Denotes Cathode
Mounting Position: Any
Weight: 0.07 ounce, 2.1 grams



Dimensions in inches (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase half sine-wave 60 Hz resistive or inductive load.

	P600A	P600B	P600D	P600G	P600J	P600K	P600M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375" (9.5mm) Lead Length T_A = 60°C (Fig. 1) T_L = 60°C (Fig. 2)				6.0 25.0				A A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)				400				A
Maximum Instantaneous Forward Voltage at I_F = 6.0A I_F = 100A				0.90 1.30			1.0 1.4	V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J = 25°C T_J = 100°C				25.0 100.0				μA
Typical Thermal Resistance $R_{\Theta JL}$ at 0.5" (12.7mm) lead length				10.0				°C/W
Operating and Storage Temperature Range T_J, T_{STG}				-65° to +175				°C

RATING AND CHARACTERISTIC CURVES
P600 SERIES

FIG. 1 — OUTPUT CURRENT VS AMBIENT TEMPERATURE

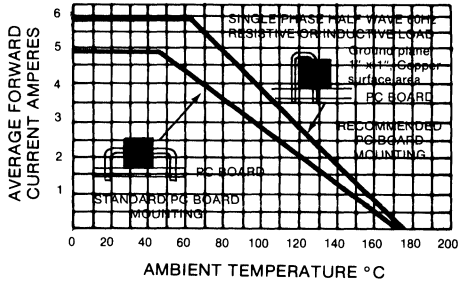


FIG. 2 — OUTPUT CURRENT VS LEAD TEMPERATURE

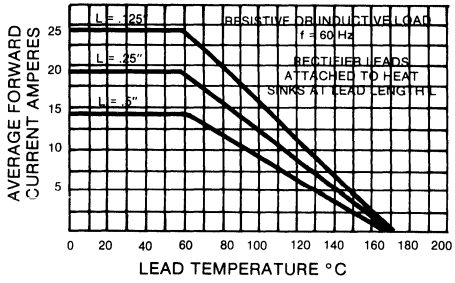


FIG. 3 — TYPICAL FORWARD CHARACTERISTIC

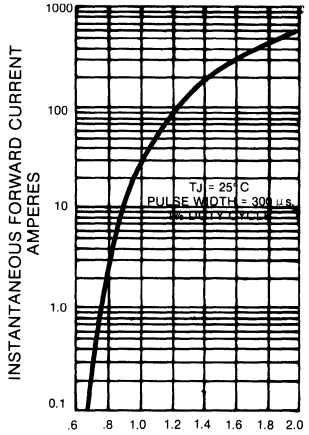


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

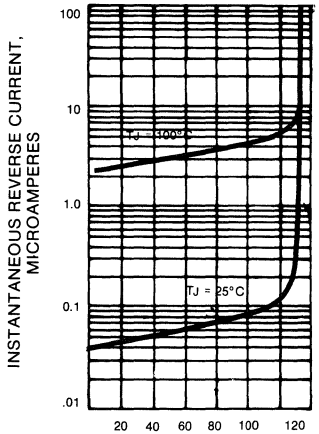


FIG. 5 — PEAK SURGE CURRENT VS. CYCLES

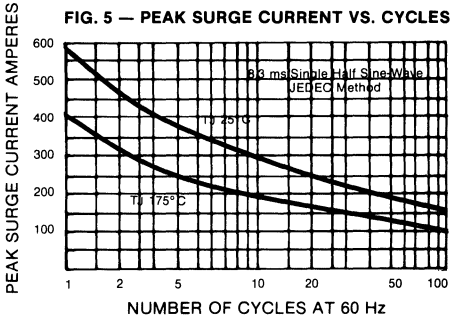
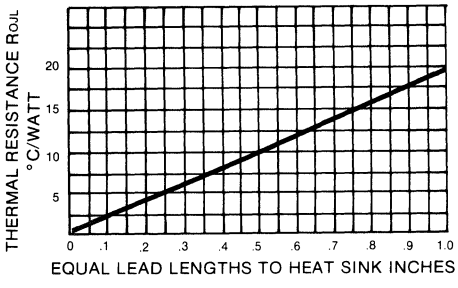


FIG. 6 — TYPICAL THERMAL RESISTANCE VS LEAD LENGTH

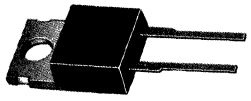


PLASTIC RECTIFIERS 8.0 AMPERES TO 30 AMPERES 50 TO 100 VOLTS

NS8AT THRU NS8MT

8 AMPERE SILICON RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts

CURRENT
8.0 Amperes

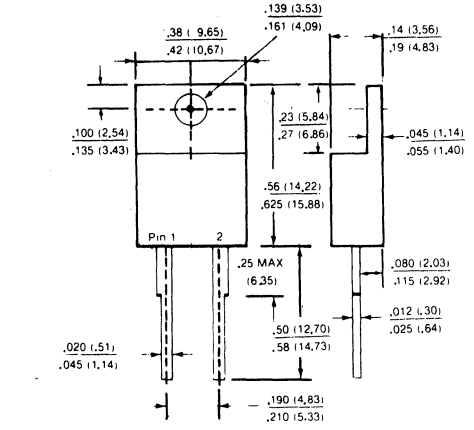
FEATURES

- Plastic package has Underwriters Laboratory mability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500
- High current capability
- High surge capacity
- Low forward voltage
- Glass passivated junction

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

TO-220



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	NS8AT	NS8BT	NS8DT	NS8GT	NS8JT	NS8KT	NS8MT	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at Tc = 100°C	8.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	175							A
Maximum Instantaneous Forward Voltage at 8.0A	1.1							V
Maximum Average Reverse Current at Peak Reverse Voltage Tc = 25°C Tc = 100°C	10 100							μA μA
Typical Thermal Resistance RΘJC (Note 1)	3.0							°C/W
Typical Junction Capacitance (Note 2)	55							pF
Storage and Operating Temperature Range Tc, TSTG	-65 to +150							°C

NOTES:
1. Thermal Resistance Junction to CASE.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING CHARACTERISTIC CURVES
NS8AT THRU NS8MT

Fig. 1—FORWARD CURRENT DERATING CURVE

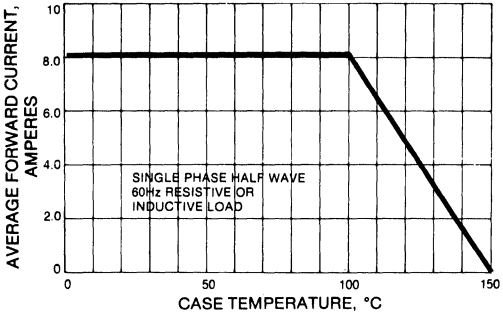


Fig. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

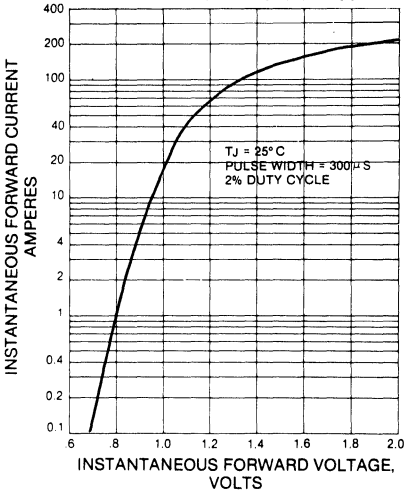


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

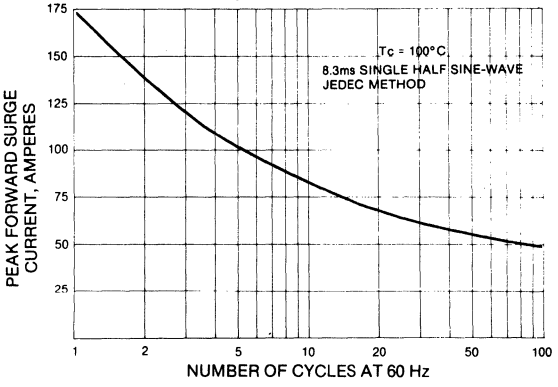


Fig. 4—TYPICAL REVERSE CHARACTERISTICS

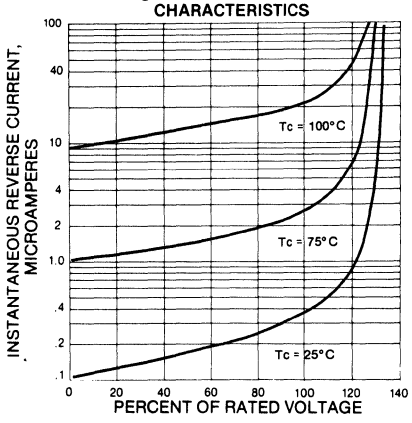
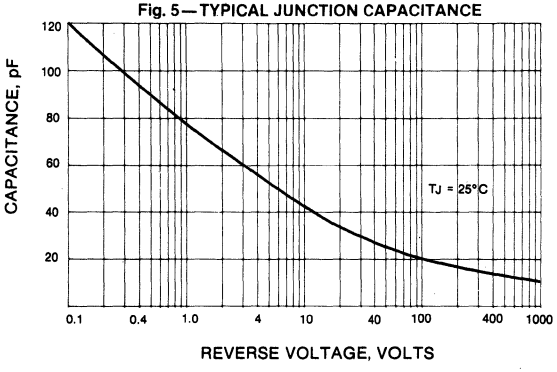


Fig. 5—TYPICAL JUNCTION CAPACITANCE



NP16AT THRU NP16MT

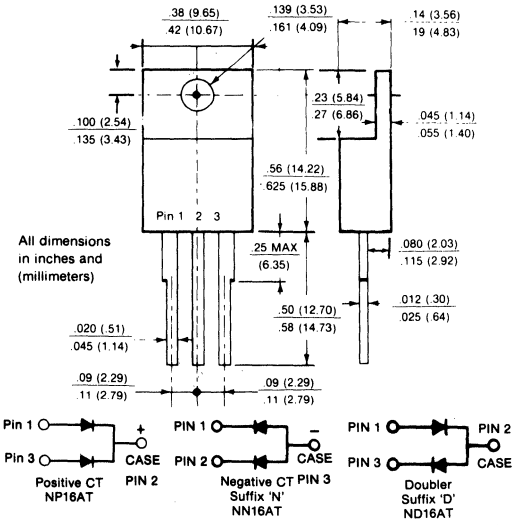
16 AMPERE SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
16.0 Amperes

TO-220



FEATURES

- Plastic package has Underwriters Laboratory Flammbility Classification 94V-0.
- Exceeds environomental standards of MIL-STD-19500.
- High current capability
- High surge capacity
- Low forward voltage

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	NP16AT	NP16BT	NP16DT	NP16GT	NP16JT	NP16KT	NP16MT	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at Tc = 100°C	16.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300							A
Maximum Instantaneous Forward Voltage at 8A	1.1							V
Maximum Reverse Current at Rated DC Blocking Reverse Voltage Tc = 25°C Per Element Tc = 100°C	10 100							μA μA
Typical Thermal Resistance RθJC (Note 1)	3.0							°C/W
Typical Junction Capacitance (Note 2)	55							pF
Storage and Operating Temperature Range Tc, TSTG	-65 to +150							°C

NOTES:
1. Thermal resistance for each junction to case
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

RATING CHARACTERISTIC CURVES
NP16AT THRU NP16MT

Fig. 1 — FORWARD CURRENT DERATING CURVE

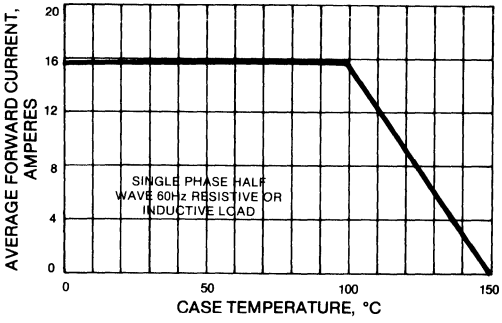


Fig. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

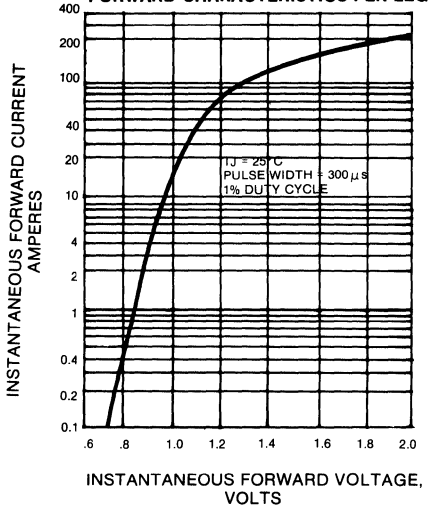


FIG. 3 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

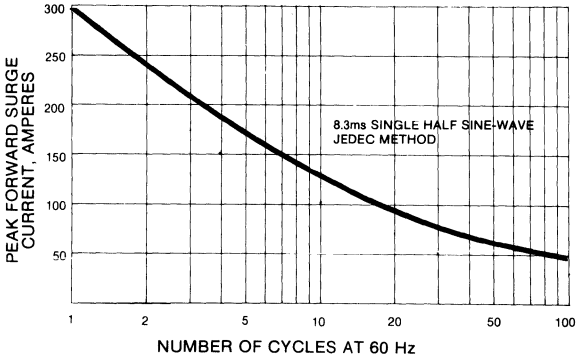


FIG. 4—TYPICAL REVERSE CHARACTERISTICS PER LEG

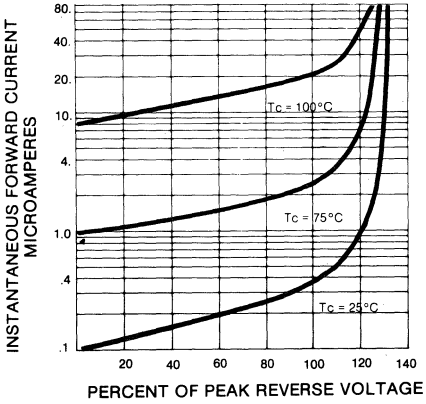
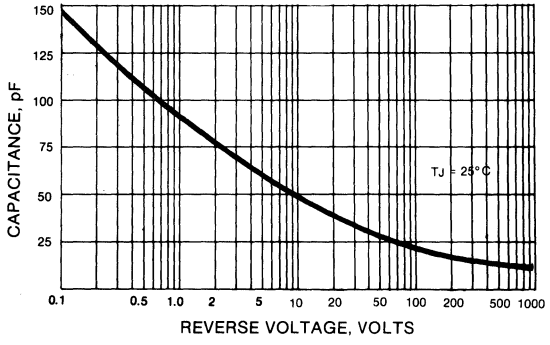


FIG. 5—TYPICAL JUNCTION CAPACITANCE



ARS25/AR25 SERIES

HIGH CURRENT PLASTIC SILICON RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

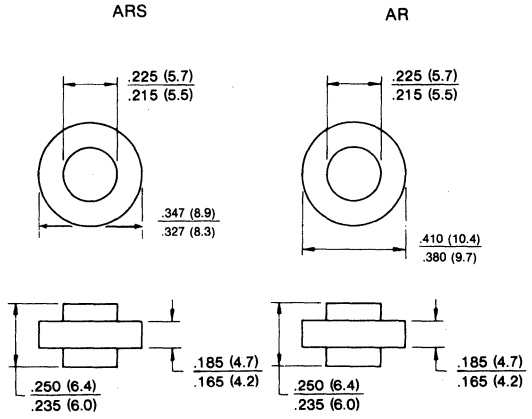
CURRENT
25 Amperes

FEATURES

- High current capability
- Plastic material carries U/L recognition 94V-0. It is General Instrument's proprietary 4B Flame-retardant epoxy molding compound.
- High surge current capability
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed: 250°C/ 10 seconds
- Low Cost
- Easily Cleaned with Freon, Alcohol, Chlorothene and Similar Solvents

MECHANICAL DATA

Case: Transfer molded plastic
Terminals: Tin plated copper
Polarity: Color band denotes cathode and indicates voltage type.
Weight: 0.07 ounce, 1.8 grams



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60 Hz.
For capactivie load derate current by 20%.

	ARS25A AR25A	ARS25B AR25B	ARS25D AR25D	ARS25G AR25G	ARS25J AR25J	ARS25K AR25K	ARS25M AR25M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current @ Tc = 150°C	25							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	400							A
Maximum Forward Voltage at 25A	1.0							V
Maximum Reverse Current at Tc = 25°C Rated DC Blocking Voltage Tc = 100°C	25 250							μA μA
Typical Junction Capacitance (Note 1)	300							pF
Typical Reverse Recovery Time (Note 2)	3.0							μS
Operating and Storage Temperature Range T_J	-65 to +175							°C
Polarity Color Band	Red	Yellow	Silver	Orange	Green	Blue	Violet	

NOTES:
1. Measured at 1MHz and applied reverse voltage of 4.0 volts
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A

FIG. 1 — MAXINUM DERATING CURVE FORWARD CURRENT

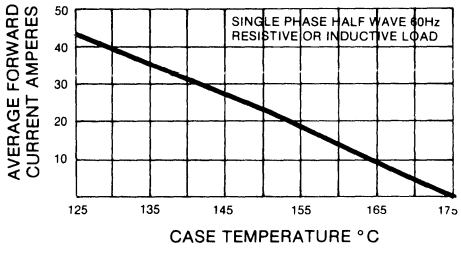


FIG. 2 — MAXIMUM PEAK FORWARD SURGE CURRENT

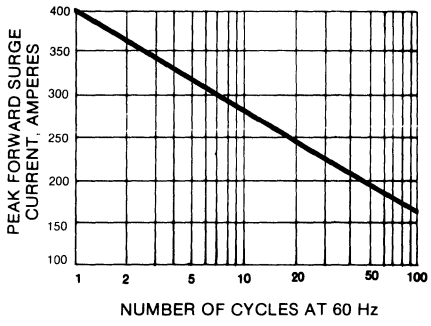


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

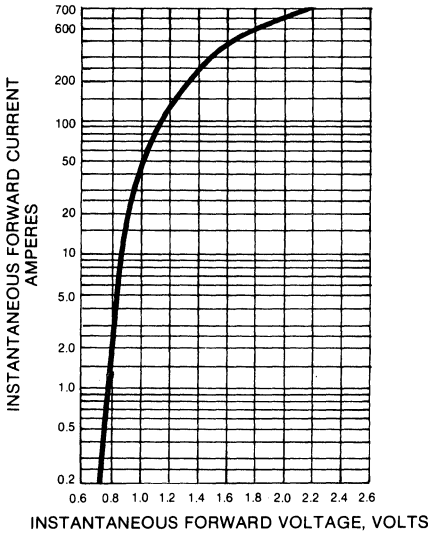
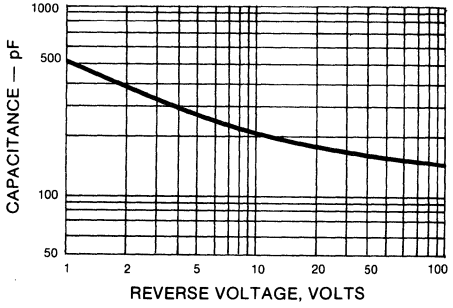


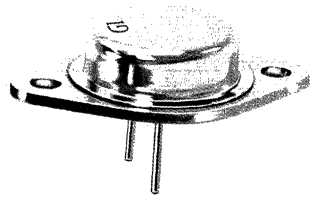
FIG. 4 — TYPICAL JUNCTION CAPACITANCE VS. REVERSE VOLTAGE



NP30AM THRU NP30MM

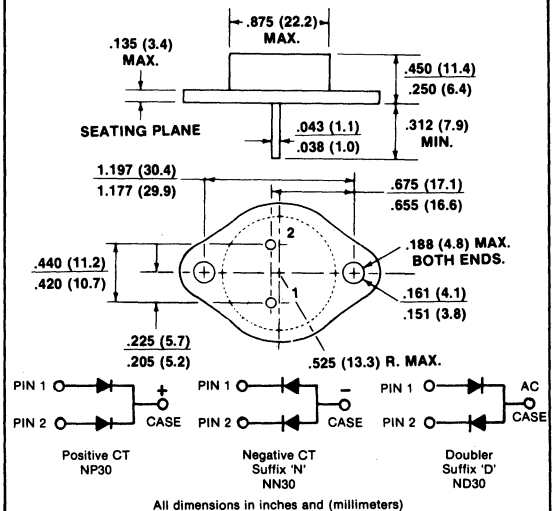
30 AMPERES SILICON RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts
CURRENT
30 Amperes

TO-3



All dimensions in inches and (millimeters)

FEATURES

- Dual rectifier construction, positive center-tap
- Convenient, mechanically rugged, hermetically sealed package
- Exceeds environmental standards of MIL-STD-19500
- High surge capability
- High current capability
- Low forward voltage

MECHANICAL DATA

Case: TO-3 metal
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .47 ounces, 13.2 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherewise speicifed.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	NP30AM	NP30BM	NP30DM	NP30GM	NP30JM	NP30KM	NP30MM	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at Tc = 100°C	30.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300							A
Maximum Instantaneous Forward Voltage at 15A	1.1							V
Maximum Average Reverse Current at Rated DC Blocking Voltage per element Tc = 25°C Tc = 100°C	10 100							μA μA
Typical Thermal Resistance $R_{\theta JC}$ (Note 1)	1.4							°C/W
Typical Junction Capacitance (Note 2)	160							pF
Storage and Operating Temperture Range Tc, T_{STG}	-65 to +150							°C

NOTES:
1. Thermal Resistance Junction to CASE
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

RATING CHARACTERISTIC CURVES
NP30AM THRU NP30MM

Fig. 1—FORWARD CURRENT DERATING CURVE

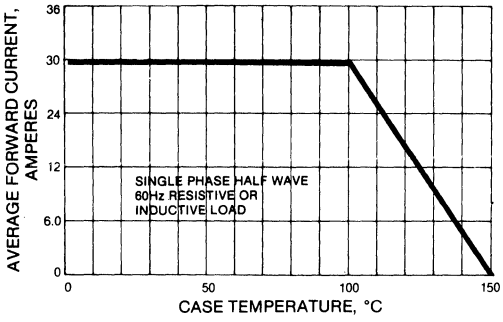


Fig. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

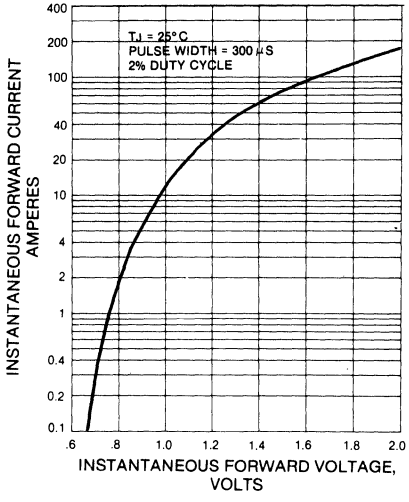


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

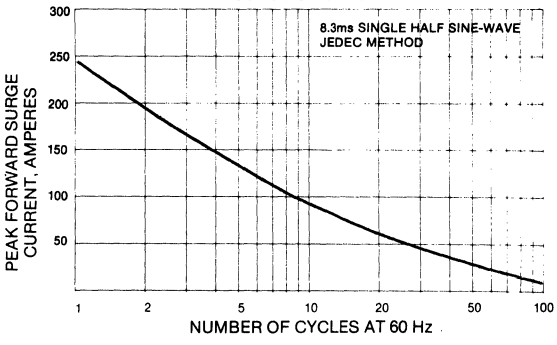


Fig. 4—TYPICAL REVERSE CHARACTERISTICS

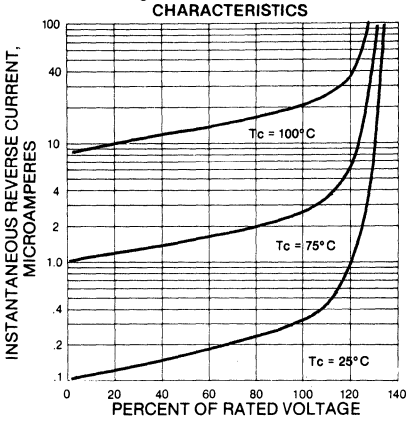
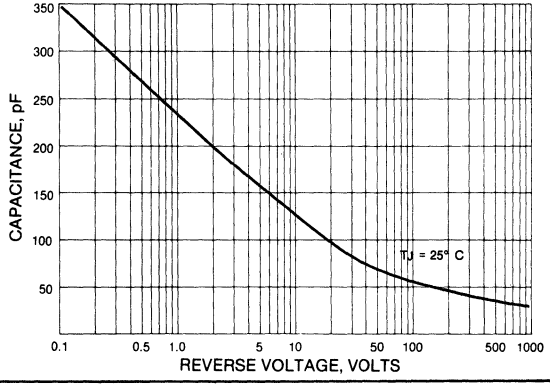


Fig. 5—TYPICAL JUNCTION CAPACITANCE



FAST RECOVERY PLASTIC RECTIFIERS 1.0 AMPERE TO 6.0 AMPERES 50 VOLTS TO 800 VOLTS

1N4933 THRU 1N4937

MINIATURE PLASTIC FAST SWITCHING RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 600 Volts

CURRENT
1.0 Ampere

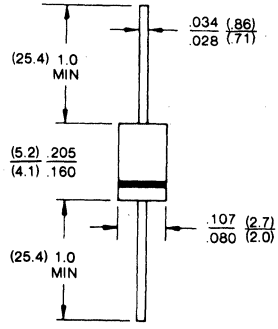
FEATURES

- Low cost
- Plastic Package has Underwriters Laboratory Flammability Classification 94V-0.
- Fast switching for high efficiency.
- Exceeds environmental standards of MIL-STD-19500
- 1 Ampere operation at T_A = 75°C with no thermal runaway.
- High Temperature soldering Guaranteed 300°C/ 10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension.

MECHANICAL DATA

Case: JEDEC DO-41, molded case
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting Position: Any
Weight: 0.012 ounce, 0.34 gram

DO-41



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	1N4933	1N4934	1N4935	1N4936	1N4937	UNITS
* Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	V
* Maximum RMS Voltage	35	70	145	280	420	V
* Maximum DC Blocking Voltage	50	100	200	400	600	V
* Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 75°C	1.0					A
* Peak Forward Surge Current 8.3ms single half sine-wave at T_A = 75°C superimposed on rated load (JEDEC method)	30					A
* Maximum Instantaneous Forward Voltage at 1.0A T_A = 75°C	1.2					V
* Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 100°C	5.0 100					μA
* Maximum Reverse Recovery Time (Note 1)	200					ns
Typical Junction Capacitance (Note 2)	15					pF
* Operating Temperature Range T_J	-65 to +150					°C
Storage Temperature Range, T_{STG}	-65 to +175					°C

NOTES:
1. Reverse Recovery Test Conditions: IF = 1.0A, VR = 30V.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC.
* JEDEC registered values.

RATING AND CHARACTERISTIC CURVES
1N4933 THRU 1N4937 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

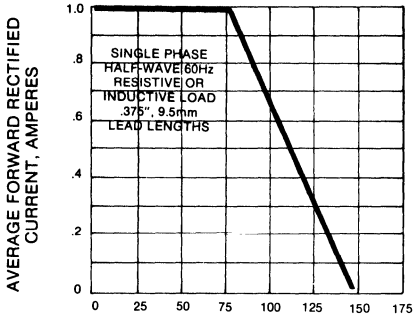


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK SURGE CURRENT

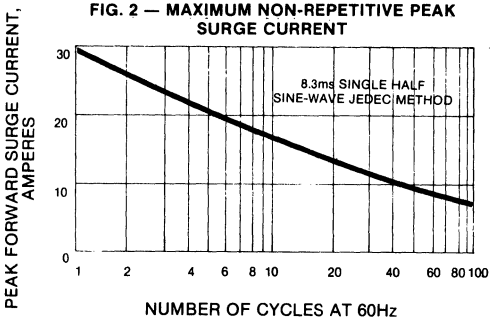


FIG. 3 — TYPICAL JUNCTION CAPACITANCE

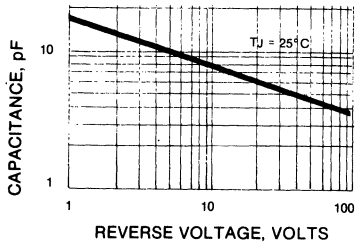


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

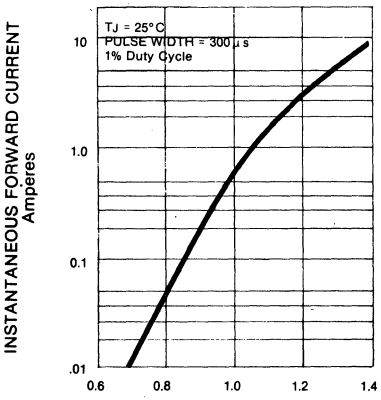
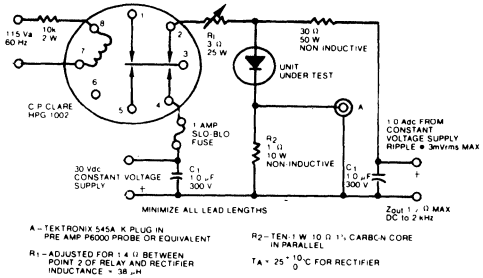
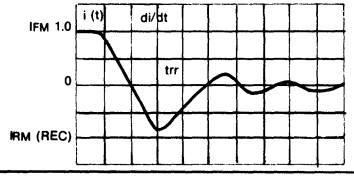


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM





SRP100 SERIES

SOFT-RECOVERY, FAST SWITCHING PLASTIC RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 800 Volts

CURRENT
1.0 Amperes

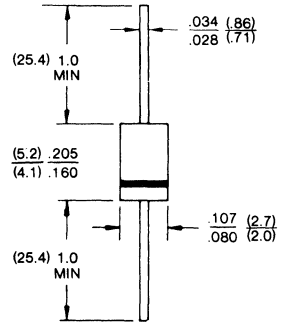
FEATURES

- High surge current capability
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Void-free plastic in a DO-41 package
- 1.0 ampere operation at T_A = 55°C with no thermal runaway
- Fast switching for high efficiency
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 250°C/10 seconds/.375" (9.5mm) lead length/5 lbs. (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: 0.012 ounce, 0.3 gram

DO-41



Dimensions in inches and millimeters

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SRP100A	SRP100B	SRP100D	SRP100G	SRP100J	SRP100K	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	V
Maximum RMS Voltage	35	70	140	280	420	560	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	1.0						A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30						A
Maximum Instantaneous Forward Voltage at 1.0A	1.3						V
Maximum Reverse Current at rated DC Blocking Voltage T_A = 25°C T_A = 100°C	10.0 200						μA
Typical Junction Capacitance (Note 1)	12						pF
Maximum Reverse Recovery Time (Note 2)	100	100	100	100	200	200	ns
Operating Temperature Range, T_J	-65 to +125						°C
Storage Temperature Range T_{STG}	-65 to +150						°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
SRP100 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

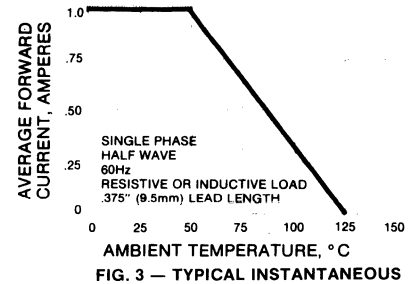


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

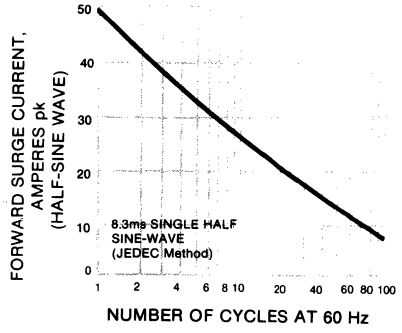


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

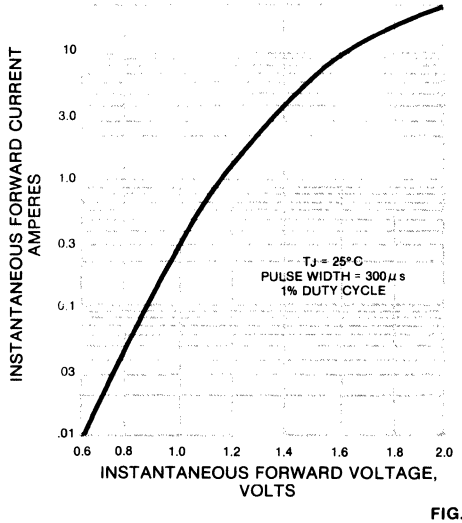


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

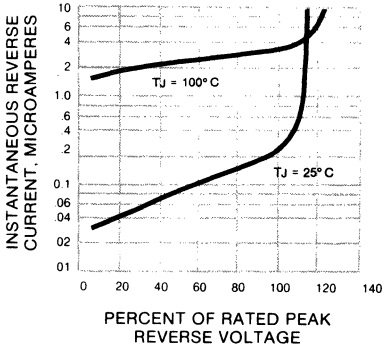


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

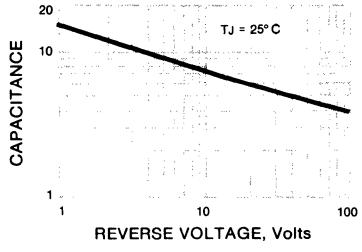
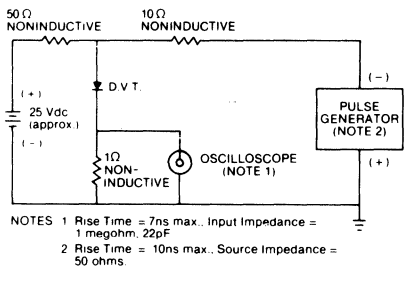
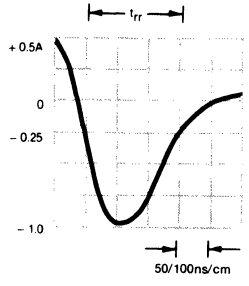


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM





GI910 SERIES

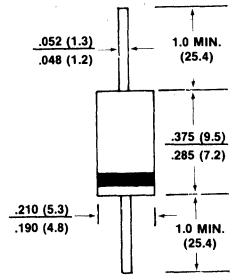
SOFT RECOVERY MEDIUM-SWITCING PLASTIC RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts PRV

CURRENT
3.0 Amperes

DO-201AD



Dimensions in inches and (millimeters)

FEATURES

- High surge current capability
- Plastic material has Underwriters Laboratory Flammability Classification 94V-0
- Void-free plastic package
- High current operation Amperes at T_A = 90° C
- Fast switching for high efficiency
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 250° C/10 seconds/.375, (9.5mm) lead length/5 lbs., (2.3 kg) tension

MECHANICAL DATA

Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting position: Any
Weight: .04 ounce, 1.1 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI910	GI911	GI912	GI914	GI916	GI917	GI918	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", 9.5mm Lead Lengths at T_A = 90° C	3.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	100							A
Maximum Instantaneous Forward Voltage at 3.0A T_J = 25° C	1.25							V
9.4A T_J = 175° C	1.1							V
Maximum Reverse Current, at Rated DC Blocking Voltage T_A = 25° C	10.0							μA
T_A = 100° C	300							
Typical Junction Capacitance (Note 1)	28.0							pF
Maximum Reverse Recovery Time I_F = 1.0A to V_R = 30V	750							ns
Maximum Reverse Recovery Curent I_{RM}	2.0							Apk
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +150							° C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES
GI910 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

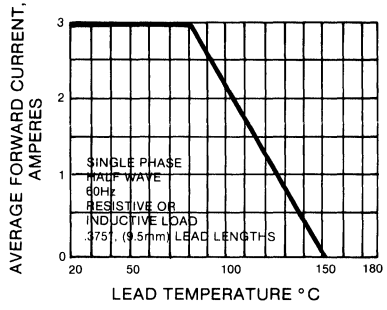


FIG. 2 — MAXIMUM FORWARD SURGE CURRENT

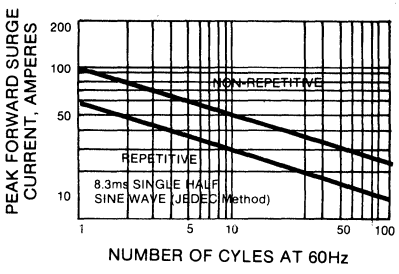


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

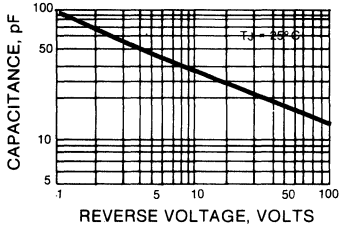


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS T_J=25°C

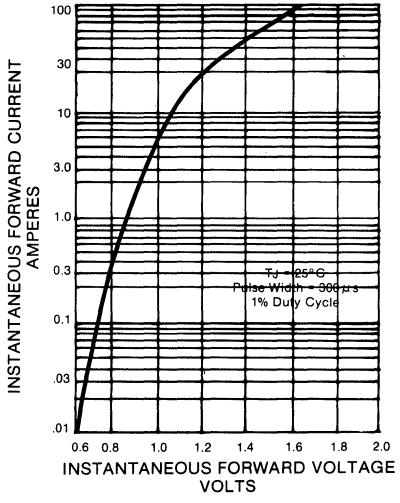
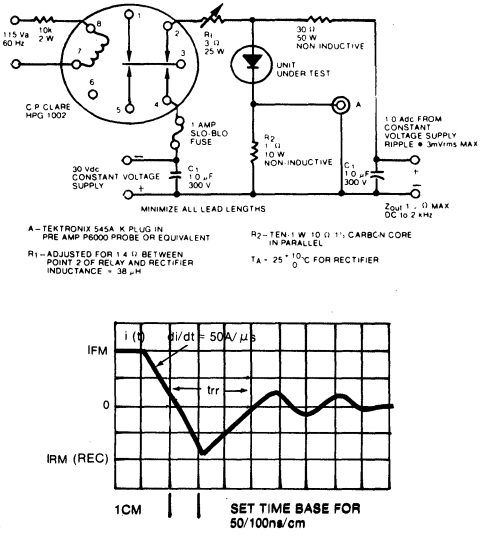


FIG. 5 — $_{rr}$ REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



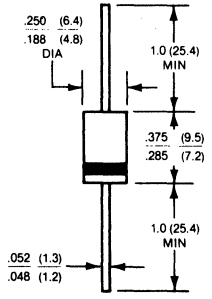
GI850 SERIES

SOFT RECOVERY, FAST SWITCHING PLASTIC RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 600 Volts
CURRENT
3.0 Amperes

DO-201-AD



Dimensions in inches and (millimeters)

FEATURES

- High surge current capability
- Plastic material carries U/L recognition 94V-0. It is General Instrument's proprietary 4B Flame-retardant epoxy molding compound.
- Void-free plastic package
- High current operation 3 amperes at T_A = 90°C
- Fast switching for high efficiency
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 300°C/10 seconds/.375", 9.5mm lead length/5 lbs., 11 kg tension

MECHANICAL DATA

Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: .04 ounce, 1.1 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single-phase, half-wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI850	GI851	GI852	GI854	GI856	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	V
Maximum RMS Voltage	35	70	140	280	420	V
Maximum DC Blocking Voltage	50	100	200	400	600	V
Maximum Average Forward Rectified Current at .375", 9.5mm lead length T_A = 90°C	3.0					A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	100					A
Maximum Forward Voltage at 3A T_J = 25°C	1.25					V
at 9.4A T_J = 175°C	1.1					V
Maximum Reverse Current, at Rated DC T_J = 25°C	10.0					
Blocking Voltage T_J = 100°C	150	150	200	250	300	μA
Typical Junction Capacitance at V_R = 4V, T_J = 25°C	28.0					pF
Maximum Reverse Recovery Time at I_F = 1.0A to V_R = 30V	200					ns
Reverse Recovery Current I_{RM}	2.0					A_{pk}
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175					°C

FIG. 1 — FORWARD CURRENT DERATING CURVE

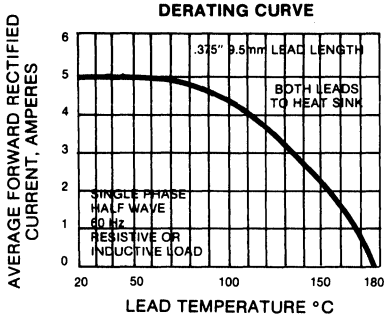


FIG. 2 — FORWARD CURRENT DERATING CURVE

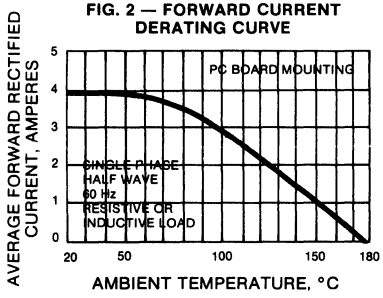


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

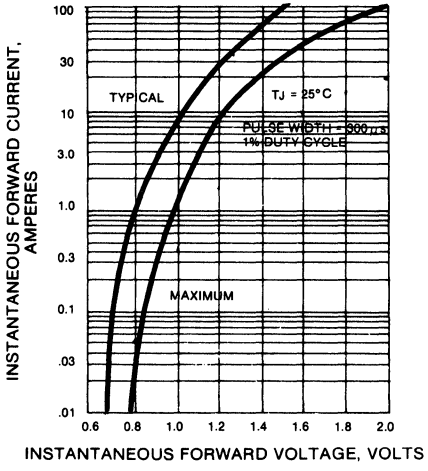


FIG. 4 — MAXIMUM PEAK FORWARD SURGE CURRENT

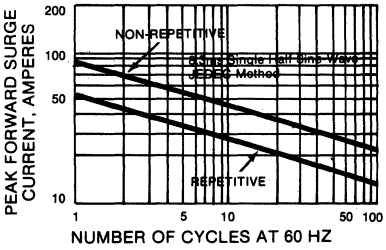
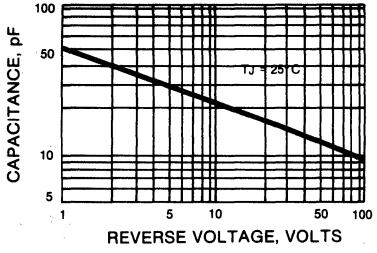


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



SRP300 SERIES

SOFT-RECOVERY, FAST SWITCHING PLASTIC RECTIFIER

GENERAL INSTRUMENT

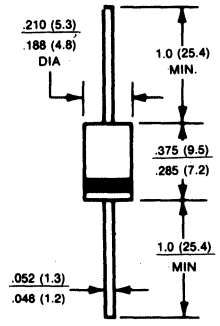
VOLTAGE RANGE
50 to 800 Volts

CURRENT
3.0 Amperes

FEATURES
- High surge current capability
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Void-free plastic in a DO-241AD package
- 3.0 ampere operation at T_A = 55°C with no thermal runaway
- Fast switching for high efficency
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 300°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANCIAL DATA
Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Band denotes cathode
Mounting Position: Any
Weight: .04 ounce, 1.1 grams

DO-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SRP300A	SRP300B	SRP300D	SRP300G	SRP300J	SRP300K	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	V
Maximum RMS Voltage	35	70	140	280	420	560	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length at T_A = 55°C	3.0						A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	150						A
Maximum Instantaneous Forward Voltage at 3.0A	1.3						V
Maximum Reverse Current T_A = 25°C	10.0						μA
at rated DC Blocking Voltage T_A = 100°C	200			300	400	500	μA
Typcial Junction Capacitance (Note 1)	60.0						pF
Maximum Reverse Recovery Time (Note 2)	100	100	150	150	200	200	ns
Storage and Operating Temperature Range, T_J, T_{STG}	-65 to +175						

NOTES:
1. Measured at 1MHz and applied reverse voltage of 4.0 Volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
SRP300 SERIES

FIG. 1—FORWARD CURRENT DERATING CURVE

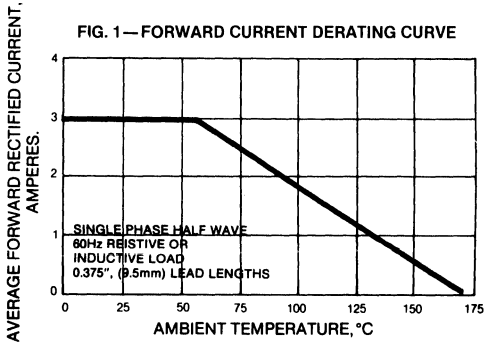


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

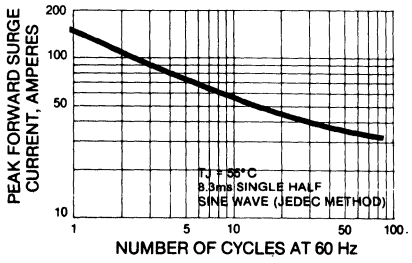


FIG. 3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

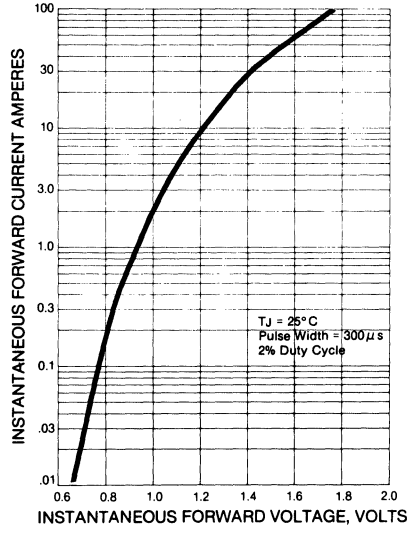


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

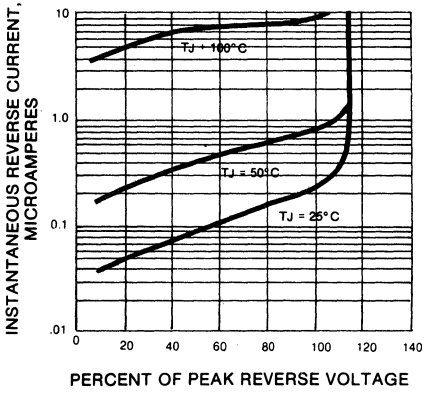


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

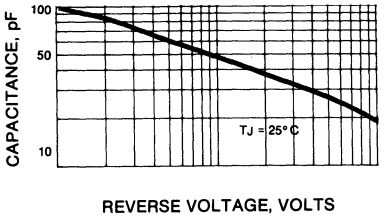
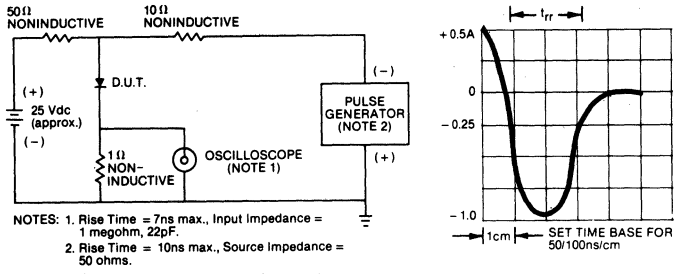


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

GI820 SERIES

HIGH CURRENT FAST-SWITCHING PLASTIC RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 600 Volts

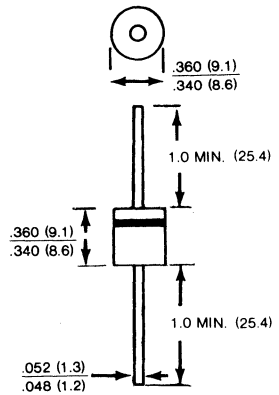
CURRENT
5.0 Amperes

FEATURES

- High Current Lead
- Diffused Junction
- High Surge Capability
- Completely Insulated Case
- Uniform Molded Body
- The plastic material has Underwriters Laboratory Flammability Classification 94V-0
- Fast Switching for high efficiency
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 350° C/10 seconds/.375" (9.5mm) lead lengths/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded Plastic
Terminals: Axial leads solderable per MIL-STD-202 Method 208
Polarity: Band Denotes Cathode
Mounting Position: Any
Weight: 0.07 ounce, 2.1 grams



Dimensions in inches (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	GI820	GI821	GI822	GI824	GI826	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	V
Maximum RMS Voltage	35	70	140	280	420	V
Maximum DC Blocking Voltage	50	100	200	400	600	V
Maximum Average Forward Rectified Current .375", 9.5mm Lead Lengths at T_A = 55° C	5.0					A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	300					A
Maximum Instantaneous Forward Voltage at 5.0A	1.0					V
Maximum Reverse Recovery Time I_F = 1.0A to V_R = 30V	200					ns
Maximum Reverse Recovery Current, I_{RM}	2.0					APK
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J = 25° C T_J = 100° C	.025 1.0					mA mA
Typical Thermal Resistance $R\Theta JL$ at 0.5", 12.7mm lead length	10.0					°C/W
Operating and Storage Temperature Range T_J, T_{STG}	-65° to +175					°C

RATING AND CHARACTERISTIC CURVES
GI820 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

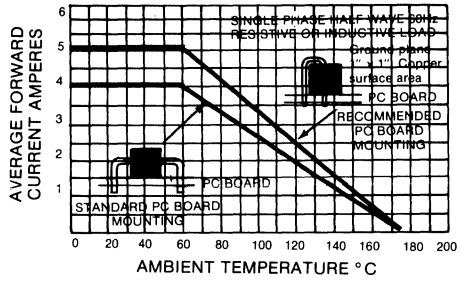


FIG. 2 — FORWARD CURRENT DERATING CURVE

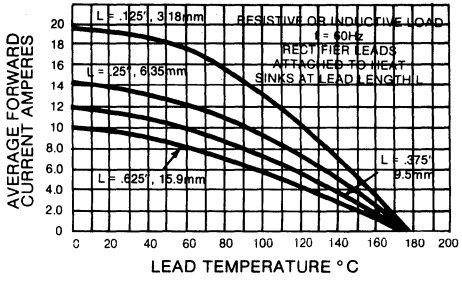


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

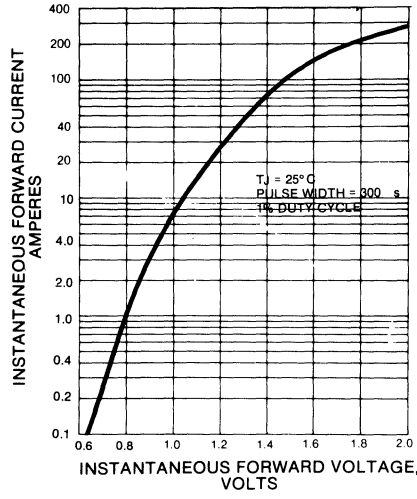


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

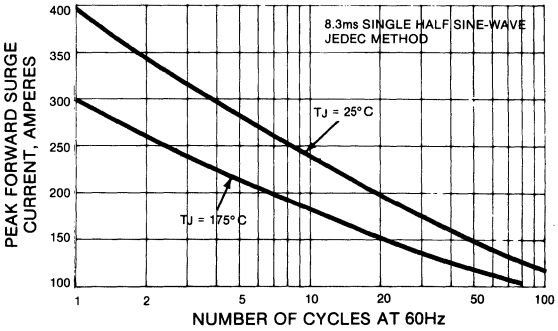


FIG. 5 — TYPICAL THERMAL RESISTANCE

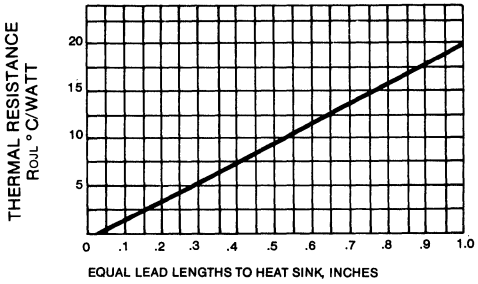
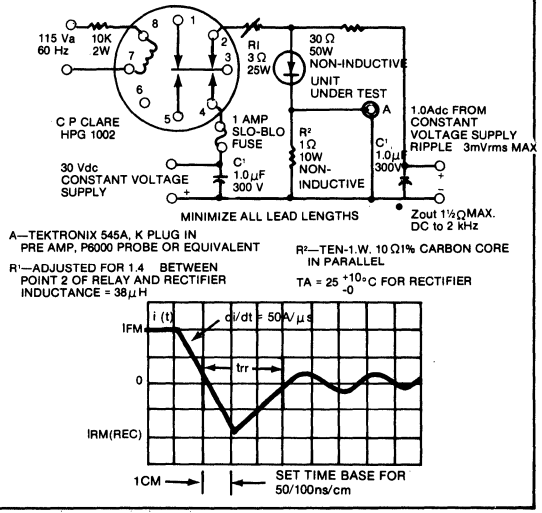


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



SRP600 SERIES

HIGH CURRENT SOFT RECOVERY FAST-SWITCHING PLASTIC RECTIFIER

GENERAL INSTRUMENT

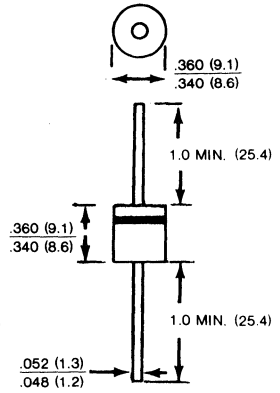
VOLTAGE RANGE
50 to 800 Volts
CURRENT
6.0 Amperes

FEATURES

- High surge current capability
- Plastic material carries U/L recognition 94V-0.
- High current operation
- Fast switching for high efficiency
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 300°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Mounting position: Any
Weight: 0.07 ounce, 2.1 grams



Dimensions in inches (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase half sine-wave 60 Hz resistive or inductive load.
For capacitive load derate current by 20%.

	SRP600A	SRP600B	SRP600D	SRP600G	SRP600J	SRP600K	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	V
Maximum RMS Voltage	35	70	140	280	420	560	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	V
Maximum Average Forward Rectified Current .375" (9.5mm) lead lengths @ T_A = 55°C	6.0						A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300						A
Maximum Instantaneous Forward Voltage at 6.0A	1.3						V
Maximum Reverse Recovery Time (Note 1)	100	100	150	150	200	200	ns
Typical Junction Capacitance (Note 2)	300						pf
Maximum DC Reverse Current at Rated DC Blocking Voltage T_J = 25°C T_J = 100°C	.025 1.0						mA
Typical Thermal Resistance $R_{\theta JL}$ at 0.5" (12.7mm) lead length	10.0						°C/W
Operating Temperature Range, T_J	-65 to +125						°C
Storage Temperature Range, T_{STG}	-65 to +150						°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A
2. Measured at 1MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES
SRP600 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

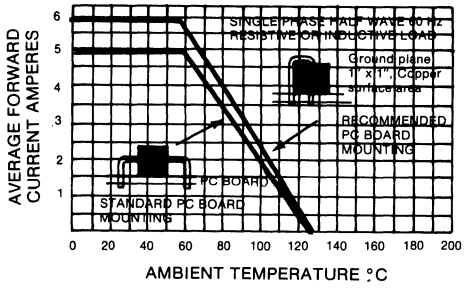


FIG. 2 — FORWARD CURRENT DERATING CURVE

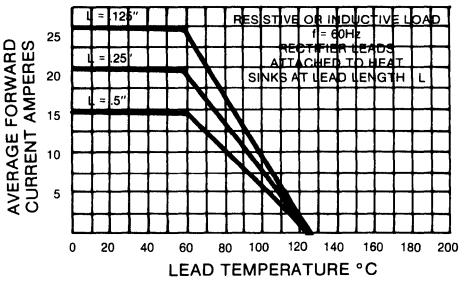


FIG. 3 — TYPICAL FORWARD CHARACTERISTICS

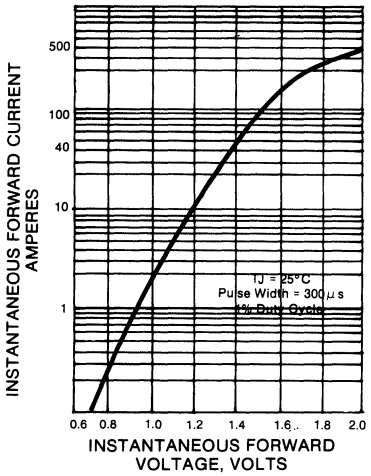
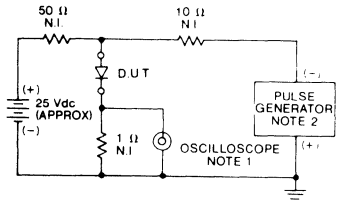


FIG. 4 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES:
1. RISE TIME - 7ns MAX, INPUT IMPEDANCE - 1 MEGOHM, 22pF
2. RISE TIME - 10ns MAX, SOURCE IMPEDANCE - 50 OHM

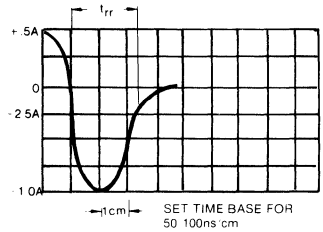
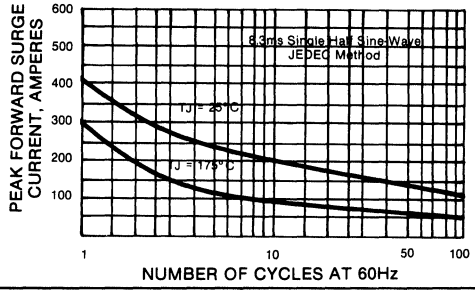


FIG. 5 — PEAK SURGE CURRENT VS. CYCLES

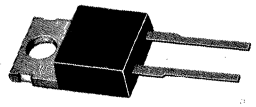


FAST RECOVERY RECTIFIERS 8.0 AMPERES TO 30 AMPERES 50 TO 1000 VOLTS

RS8AT THRU RS8MT

8 AMPERE FAST RECOVERY RECTIFIER

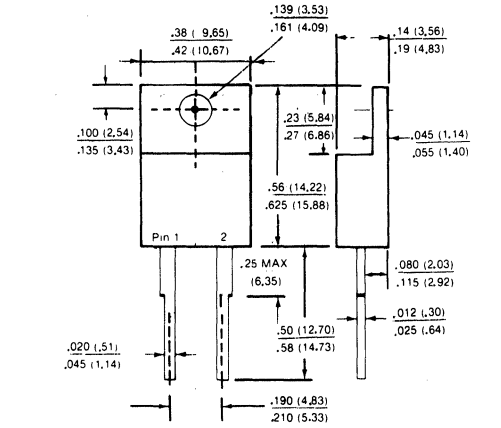
GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts

CURRENT
8.0 Amperes

TO-220



All dimensions in inches and (millimeters)

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500
- High current capability
- High surge capacity
- Low forward voltage
- Fast switching for high efficiency
- Glass passivated junction

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RS8AT	RS8BT	RS8DT	RS8GT	RS8JT	RS8KT	RS8MT	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at Tc = 100°C	8.0							A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	150							A
Maximum Instantaneous Forward Voltage at 8.0A	1.3							V
Maximum Average Reverse Current at Rated DC Block Voltage Tc = 25°C Tc = 100°C	25 250							μA μA
Typical Junction Capacitance (Note 1)	55							pF
Maximum Reverse Recovery Time (Note 2)	150			200	250		500	ns
Typical Thermal Resistance RΘJC (Note 3)	3.0							°C/W
Storage and Operating Temperature Range Tc, TSTG	-65 to + 150							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
3. Thermal Resistance Junction to CASE.

RATING CHARACTERISTIC CURVES
RS8AT THRU RS8MT

Fig. 1—FORWARD CURRENT DERATING CURVE

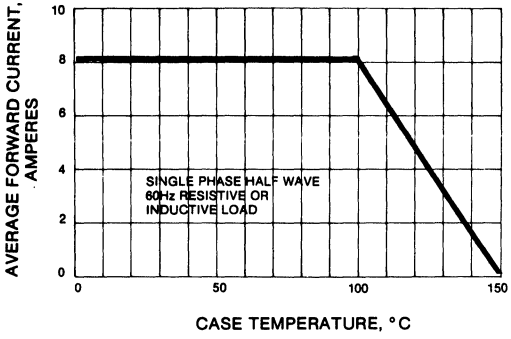


Fig. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

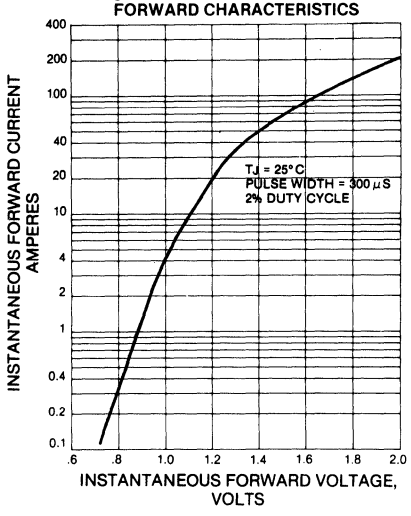


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

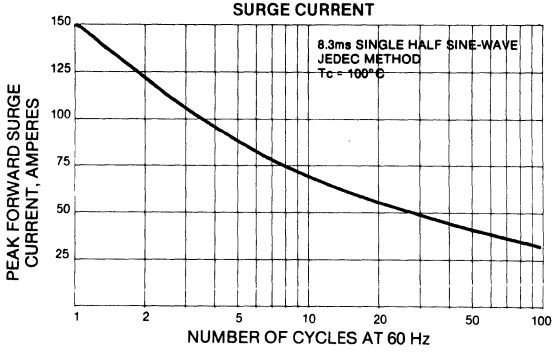


Fig. 4—TYPICAL REVERSE CHARACTERISTICS

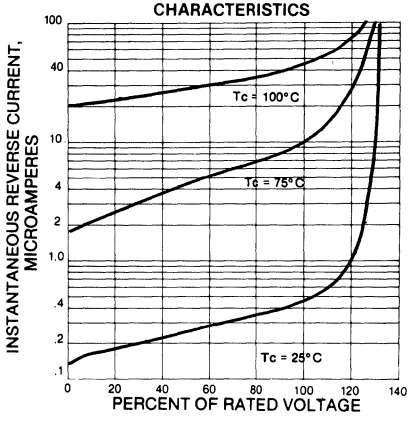
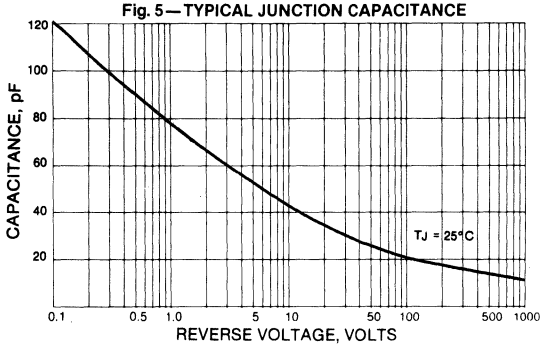


Fig. 5—TYPICAL JUNCTION CAPACITANCE



RP16AT THRU RP16KT

16 AMPERE FAST-RECOVERY RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
16 Amperes

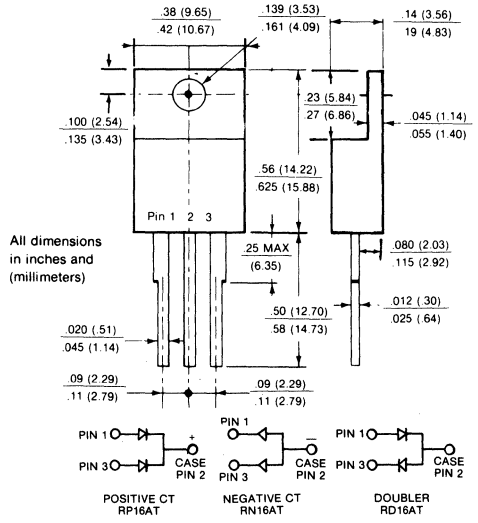
FEATURES

- Dual rectifier construction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500.
- High current capability
- High surge capacity
- Low forward voltage
- Fast switching for high efficiency

MECHANICAL DATA

Case: TO-220 molded plastic
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .08 ounces, 2.24 grams

TO-220 CT



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phas,e half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RP16AT	RP16BT	RP16DT	RP16GT	RP16JT	RP16KT	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	V
Maximum RMS Voltage	35	70	140	280	420	560	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	V
Maximum Average Forward Rectified Current at Tc = 100° C	16.0						A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	200						A
Maximum Forward Voltage at 8.0A per element	1.2			1.3			V
Maximum Average Reverse Current At Peak Reverse Voltage Tc = 25° C Tc = 100° C	25 250						μA μA
Typical Junction Capacitance (Note 1)	30						pF
Maximum Reverse Recovery Time (Note 2)	150			200	250		ns
Typical Thermal Resistance RθJC (Note 3)	3.0						°C/W
Storage and Operating Temperature Range TJ	-65 to +150						°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A
3. Thermal Resistance for each junction to case.

RATING CHARACTERISTIC CURVES
RP16AT THRU RP16KT

FIG. 1—FORWARD CURRENT DERATING CURVE

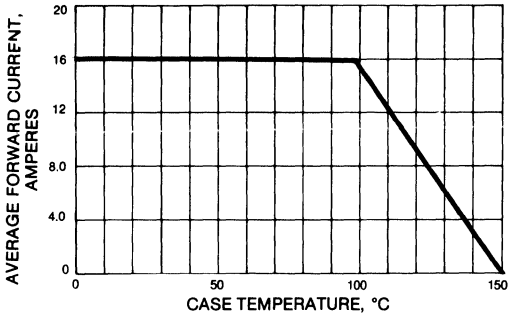


FIG. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

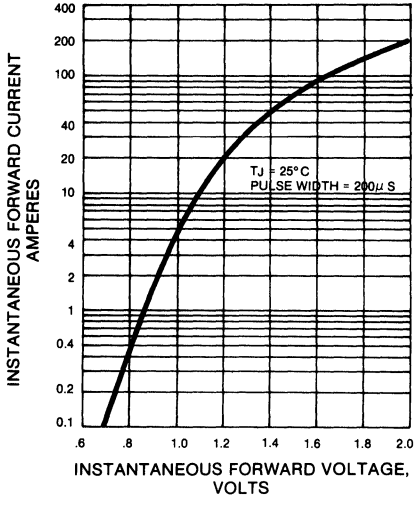


FIG. 3—MAXIMUM NON-REPETITVE SURGE CURRENT

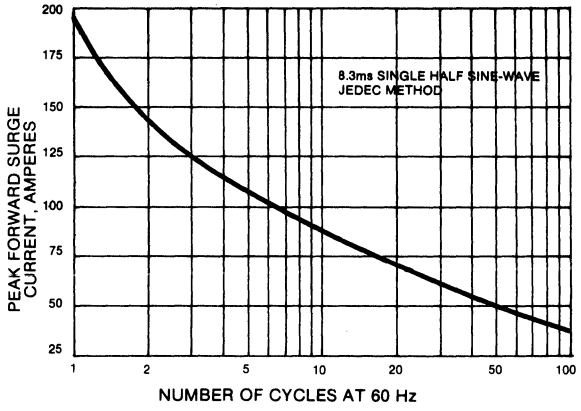


FIG. 4—TYPICAL REVERSE CHARACTERISTICS

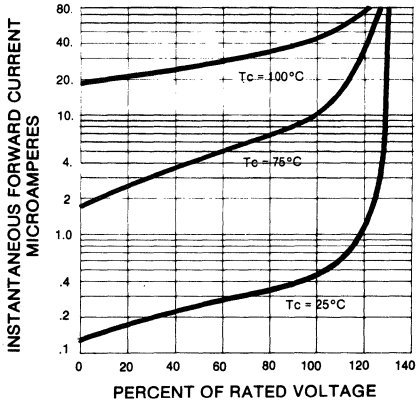
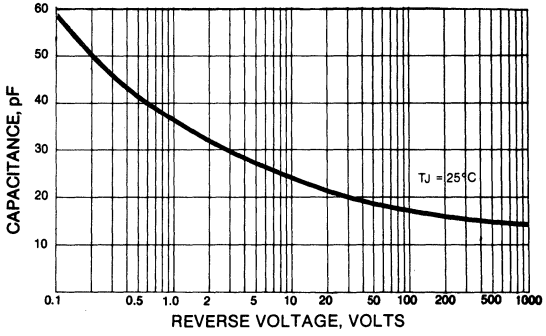


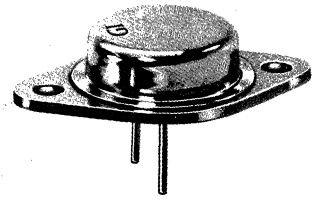
FIG. 5—TYPICAL JUNCTION CAPACITANCE



RP30AM THRU RP30MM

30 AMPERE FAST RECOVERY RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts

CURRENT
30 Amperes

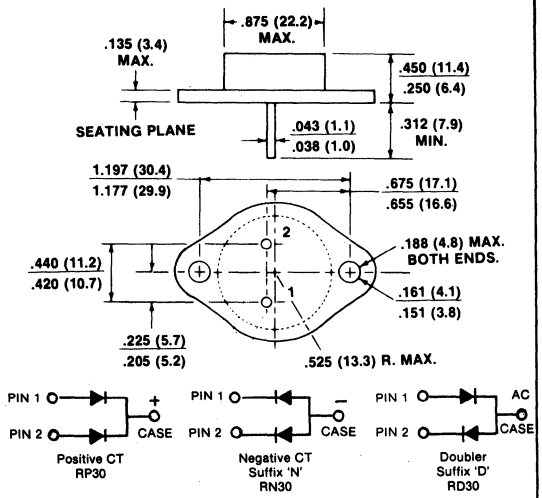
FEATURES

- Dual rectifier construction, positive center-tap
- Convenient, mechanically rugged, hermetically sealed package
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- High surge capability
- High current capability

MECHANICAL DATA

Case: TO-3 metal
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: As marked
Mounting position: Any
Weight: .47 ounces, 13.2 grams

TO-3



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RP30AM	RP30BM	RP30DM	RP30GM	RP30JM	RP30KM	RP30MM	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at Tc = 100°C	30.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	200							A
Maximum Instantaneous Forward Voltage at 15A	1.3				1.4			V
Maximum DC Reverse Current at Rated DC Blocking Voltage per element Tc = 25°C Tc = 100°C	25 250							μA μA
Typical Junction Capacitance (Note 1)	160							pF
Maximum Reverse Recovery Time (Note 2)	150				200	250	500	ns
Typical Thermal Resistance RΘJC (Note 3)	1.4							°C/W
Storage and Operating Temperature Range Tc, TSTG	-65 to + 150							°C

NOTES:
1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
2. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
3. Thermal Resistance Junction to CASE.

RATING CHARACTERISTIC CURVES
RP30AM THRU RP30MM

Fig. 1—FORWARD CURRENT DERATING CURVE

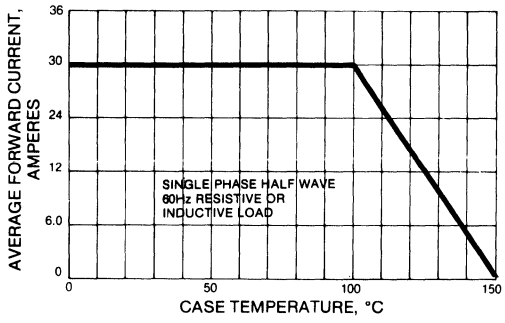


Fig. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

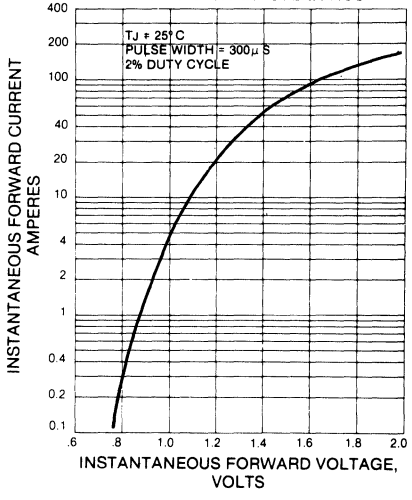


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

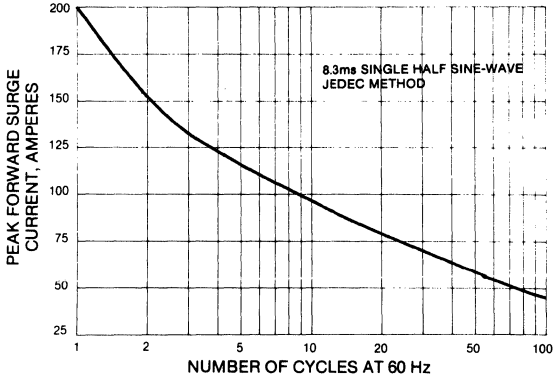


Fig. 4—TYPICAL REVERSE CHARACTERISTICS

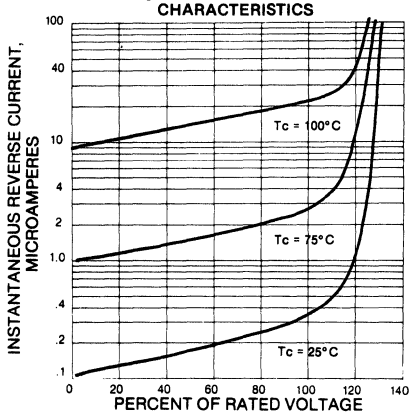
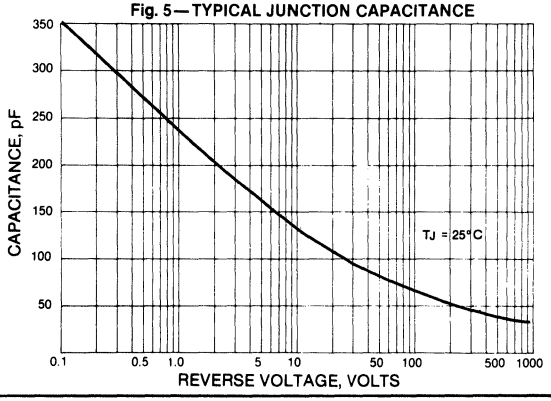


Fig. 5—TYPICAL JUNCTION CAPACITANCE



BRIDGE RECTEFIERS 1.0 AMPERE TO 35 AMPERES 50 VOLTS TO 1000 VOLTS

Families of General Instrument Bridge Rectifiers

All types of rectifier cells, which are produced by GENERAL INSTRUMENT, are available in bridge configurations, molded in various plastic and metal packages.

The basic types of packages are
- Round Plastic Package (Fig. 1)
- IN-LINE Plastic Package (Fig. 2)
- DUAL-IN-LINE Plastic Package (Fig. 3)
- Square Plastic/Metal Package for Chassis Mounting (Fig. 4)

These bridge families are available with different terminals, such as wire leads, FASTON or soldering lugs.

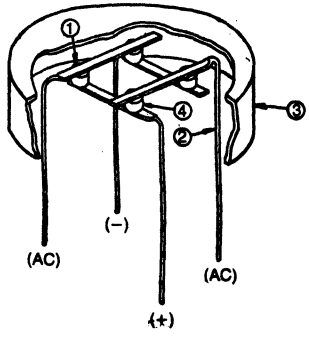


Fig. 1 **Round Bridge**

ITEM	DESCRIPTION
1	Solder Preforms
2	Formed Leads
3	Case
4	Cell

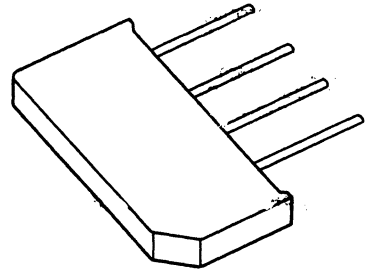


Fig. 2 **IN-LINE Bridge**

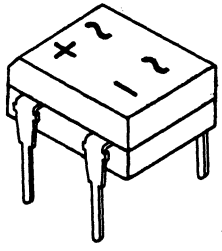


Fig. 3 **DUAL-IN-LINE Bridge**

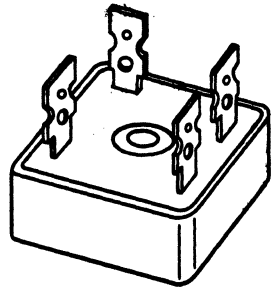


Fig. 4 **Chassis Mounted Bridge**

GENERAL INSTRUMENT

FAMILIES OF GENERAL INSTRUMENT BRIDGE RECTIFIERS

Dual-In-Line Single Phase Bridge Rectifiers 1.0 AMPERE

Types:

DF005M thru DF10M
RDF005M thru RDF08M
(Fast Recovery)

Features:

- Surge Overload Rating 50 Amperes Peak
- Ideal for Printed Circuit Board
- Reliable Low Cost Construction
- Tinned Copper Leads Solderable to MIL-STD-202 Method 208
- Glass Passivated Junction
- Plastic Package has Underwriters Laboratory Classification 94V-0

Miniature Single-Phase Bridge Rectifiers 1.5 to 2 AMPERES

Types:

W005M thru W10M
2W005M thru 2W10M

Features:

- Surge Overload Rating 50 and 60 Amperes Peak
- Ideal for Printed Circuit Board
- Reliable Low Cost Construction
- Leads are Solderable to MIL-STD-202 Method 208
- Available in Avalance and Fast Recovery Characteristics
- Plastic Package has Underwriters Laboratory Classification 94V-0

In-Line Single Phase Bridge Rectifiers 1.5 to 8.0 AMPERES

Types:

KBP005 thru KBP10
2KBP005 thru 2KBP10
KBU4A thru KBU4M
KBL005 thru KBL10
KBU6A thru KBU6M
KBU8A thru KBU8M

Features:

- Surge Overload Rating from 50 to 300 Amperes Peak
- Ideal for Printed Circuit Board
- Reliable Low Cost Construction utilizing molded Plastic
- Available in Avalanche and Fast Recovery Characteristics
- Leads are Solderable to MIL-STD-202 Method 208
- Plastic Package has Underwriters Laboratory Classification 94V-0

High Current Single Phase Bridge Rectifiers 3.0 to 35 AMPERES

Types:

KBPC1005 thru KBPC110
SUPERECTIFIER Construction
KBPC6005 thru KBPC610
KBPC8005 thru KBPC810
SUPERECTIFIER Construction
KBPC10-005 thru KBPC10 -10
KBPC15-005 thru KBPC15 -10
KBPC25-005 thru KBPC25 -10
KBPC35-005 thru KBPC35 -10
GIB2500 thru GIB2510
GIB3500 thru GIB3510

Features:

- High Capability of Surge Overload Rating
- Insulated Case for Maximum Heat Dissipation
- Low Forward Voltage Drop
- Tinned Copper Leads or Faston Terminals
- Simple Installation thru Screw hole for NBR6 Screw
- Available in Avalanche and Fast Recovery Characteristics
- For all kinds of DC Motors
- Leads or Terminals are Solderable to MIL-STD-202 Method 208
- Plastic Package has Underwriters Laboratory Classification 94V-0

GENERAL INSTRUMENT

QUICK GUIDE TO BRIDGE RECTIFIERS

I_o (A)	1.0	1.5	1.5	1.0	2.0	2.0	2.0	4.0	4.0	6.0	8.0	I_o (A)
@T_A (°C)	40	25	50	75	25	50	55	50	65	40	100T_C	@T_A (°C)
SURGE (A)	50	50	50	30	60	60	60	200	200	250	300	SURGE (A)
V_R = 50 (V)	DF005M*	W005M*	KBP005*	3N246	2W005M*	2KBP005*	3N253	KBL005*	KBU4A*	KBU6A*	KBU8A*	V_R = 50 (V)
V_R = 100 (V)	DF011M*	W01M*	KBP01*	3N247	2W01M*	2KBP01*	3N254	KBL01*	KBU4B*	KBU6B*	KBU8B*	V_R = 100 (V)
V_R = 200 (V)	DF02M*	W02M*	KBP02*	3N248	2W02M*	2KBP02*	3N255	KBL02*	KBU4D*	KBU6D*	KBU8D*	V_R = 200 (V)
V_R = 400 (V)	DF04M*	W04M*	KBP04*	3N249	2W04M*	2KBP04*	3N256	KBL04*	KBU4G*	KBU6G*	KBU8G*	V_R = 400 (V)
V_R = 600 (V)	DF06M*	W06M*	KBP06*	3N250	2W06M*	2KBP06*	3N257	KBL06*	KBU4J*	KBU6J*	KBU8J*	V_R = 600 (V)
V_R = 800 (V)	DF08M*	W08M*	KBP08*	3N251	2W08M*	2KBP08*	3N258	KBL08*	KBU4K*	KBU6K	KBU8K	V_R = 800 (V)
V_R = 1000 (V)	DF10M*	W10M*	KBP10*	3N252	2W10M*	2KBP10*	3N259	KBL10*	KBU4M*	KBU6M	KBU8M	V_R = 1000 (V)
Page	318	320	324	326	328	330	332	338	340	342	350	Page

*Also available in Avalanche and Fast Recovery Characteristics

GENERAL INSTRUMENT

QUICK GUIDE TO BRIDGE RECTIFIERS

I_o (A)	3.0	6.0	8.0	10	15	25	25	35	35	I_o (A)
@T_A (°C)	50	100	50	55	55	55	55	55	55	@T_A (°C)
SURGE (A)	50	200	125	200	300	300	400	400	400	SURGE (A)
V_R = 50 (V)	*KBPC1005■	*KBPC6005	*KBPC8005■	*KBPC10-005	*KBPC25-005	*KBPC25-005	*GIB2500	*KBPC35-005	*GIB3500	V_R = 50 (V)
V_R = 100 (V)	*KBPC101■	*KBPC601	*KBPC801■	*KBPC10-01	*KBPC15-01	*KBPC25-01	*GIB2501	*KBPC35-01	*GIB3501	V_R = 100 (V)
V_R = 200 (V)	*KBPC102■	*KBPC602	*KBPC802■	*KBPC10-02	*KBPC15-02	*KBPC25-02	*GIB2502	*KBPC35-02	*GIB3502	V_R = 200 (V)
V_R = 400 (V)	*KBPC104■	*KBPC604	*KBPC804■	*KBPC10-04	*KBPC15-04	*KBPC25-04	*GIB2504	*KBPC35-04	*GIB3504	V_R = 400 (V)
V_R = 600 (V)	*KBPC106■	*KBPC606	*KBPC806■	*KBPC10-06	*KBPC15-06	*KBPC25-06	*GIB2506	*KBPC35-06	*GIB3506	V_R = 600 (V)
V_R = 800 (V)	*KBPC108■	*KBPC608	*KBPC808■	KBPC10-08	KBPC15-08	KBPC25-08	GIB2508	KBPC35-08	GIB3508	V_R = 800 (V)
V_R = 1000 (V)	*KBPC110■	*KBPC610	*KBPC810■	*KBPC10-10	KBPC15-10	KBPC25-10	GIB2510	KBPC35-10	GIB3510	V_R = 1000 (V)
Page	334	344	348	352	352	352	356	352	358	Page

■ SUPERECTIFIER construction

*Also available in Avalanche and Fast Recovery Characteristics

DF-M SERIES

MINIATURE GLASS PASSIVATED SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

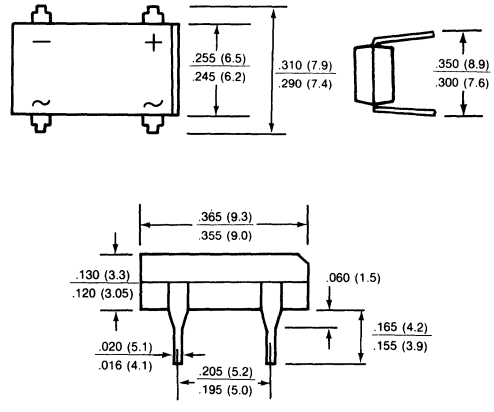
CURRENT
1.0 Ampere

FEATURES

- Plastic material used carries Underwriters Laboratory recognition.
- Glass passivated junctions.
- Surge overload rating—50 amperes peak.
- Ideal for printed circuit board.
- Exceeds environmental standards of MIL-STD-19500.
- High Temperature soldering guaranteed 300°C/ 10 seconds at 5 lbs., (2.3kg) tension.

MECHANICAL DATA

Case: Reliable low cost construction utilizing molded plastic technique results in inexpensive product
Terminals: Lead solderable per MIL-STD-202. Method 208
Polarity: Polarity symbols molded on body
Mounting Position: Any
Weight: 0.04 ounce 1.0 gram



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	DF005M	DF01M	DF02M	DF04M	DF06M	DF08M	DF10M	Units
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Output Rectified Current at T_A = 40°C	1.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50.0							A
I^2t Rating for fusing (t<8.35ms)	10.0							A^2t
Maximum Instantaneous Forward Voltage Drop per Bridge Element at 1.0A	1.1							V
Maximum Reverse Current at rated T_A = 25°C DC Blocking Voltage per element T_A = 125°C	10 0.5							μA mA
Typical Junction Capacitance per element (Note 1)	25							pF
Operating Temperature Range T_J	-55 to +150							°C
Storage Temperature Range T_{STG}	-55 to +150							°C

NOTE:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES
DF-M SERIES

FIG. 1— DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

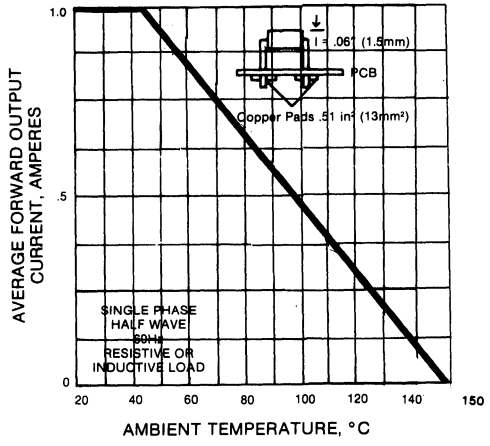


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

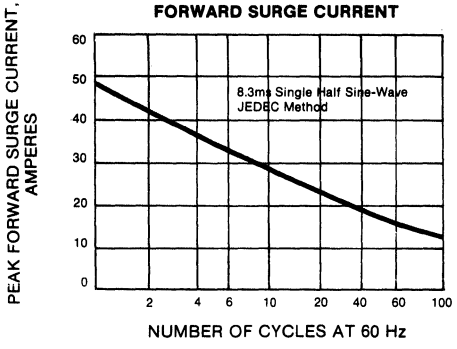


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS PER BRIDGE ELEMENT

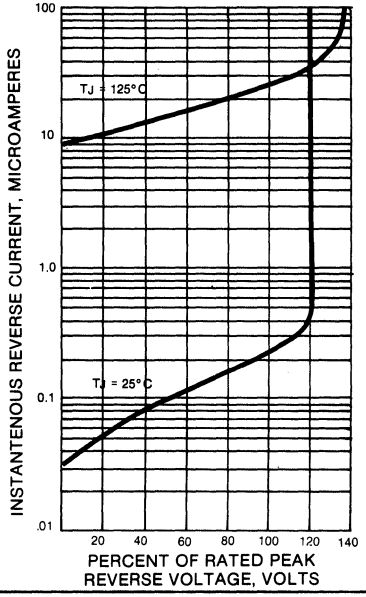


FIG. 4 — TYPICAL FORWARD CHARACTERISTICS PER BRIDGE ELEMENT

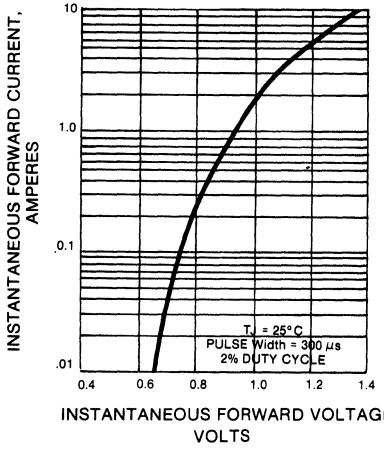
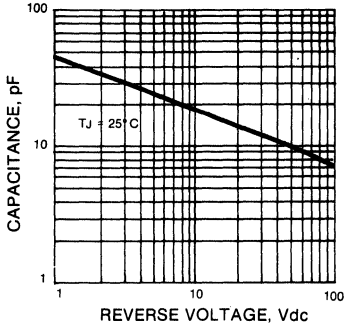


FIG. 5 — TYPICAL JUNCTION CAPACITANCE PER BRIDGE ELEMENT



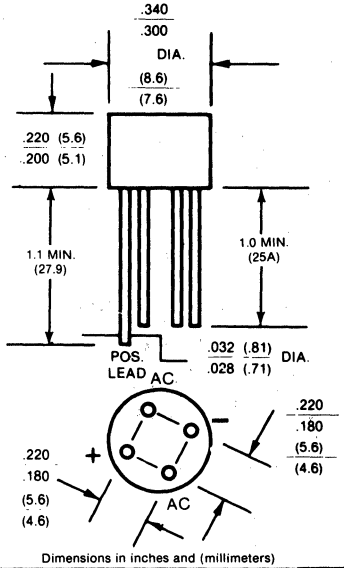
W005M THRU W10M SERIES

1.5 AMPERE MINIATURE SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT

VOLTAGE
50 to 1000 Volts PRV

CURRENT
1.5 Amperes



Dimensions in inches and (millimeters)

FEATURES
- Plastic material used carried Underwriters Laboratory recognition.
- High case dielectric strength
- Typical I_R less than 1 μ A
- Exceeds environmental standards of MIL-STD-19500
- Ideal for printed circuit board
- High temperature soldering guaranteeed: 250°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA
Case: Reliable low cost construction utilizing molded plastic technique
Terminals: Leads solderable per MIL-STD-202, Method 208
Mounting Position: Any
Weight: 0.05 ounce, 1.3 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	W005M	W01M	W02M	W04M	W06M	W08M	W10M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", 9.5mm lead lengths at T_A = 25° C	1.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50.0							A
I^2t Rating for fusing (t≤ .00835)	5.0							A^2s
Maximum Instantaneous Forward Voltage Drop per element at 1.0A	1.0							V
Maximum Reverse Current at Rated DC Blocking Voltage per element T_A = 25° C	10.0							μA
T_A = 100° C	1.0							mA
Typical Junction Capacitance per Bridge element	24.0							pF
Operating Temperature Range T_A	-55 to +125							°C
Storage Temperature Range T_{STG}	-55 to +150							°C

NOTE: 1. Measured at 1.0 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES
W005M THRU W10M

FIG. 1 — DERATING CURVE
OUTPUT RECTIFIED CURRENT

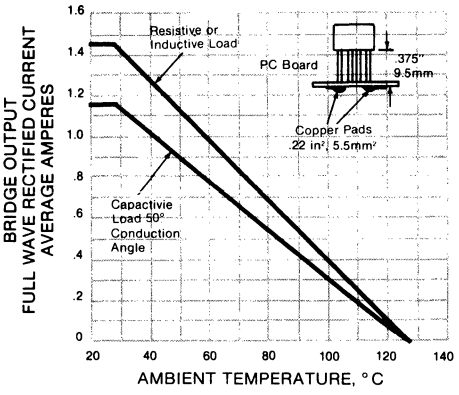


FIG. 2 — MAXIMUM NON-REPETITIVE
PEAK FORWARD CURRENT

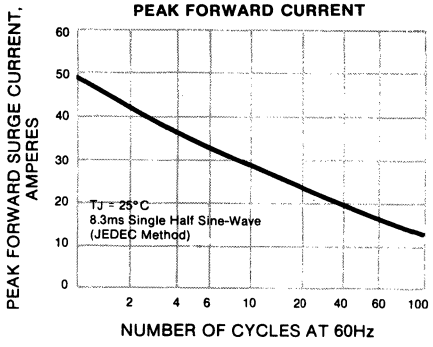


FIG. 3 — TYPICAL FORWARD
CHARACTERISTICS

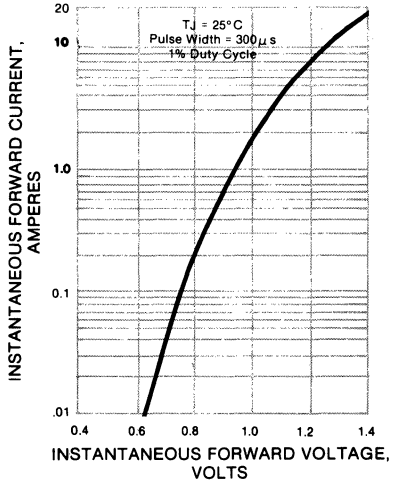


FIG. 4 — TYPICAL
REVERSE CHARACTERISTICS

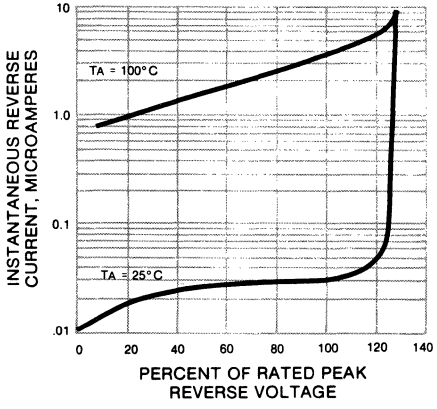
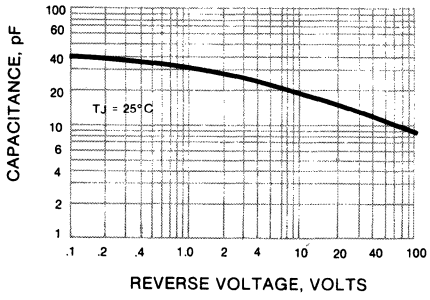


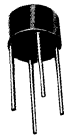
FIG. 5 — TYPICAL JUNCTION CAPACITANCE
PER BRIDGE ELEMENT



AWO-M SERIES

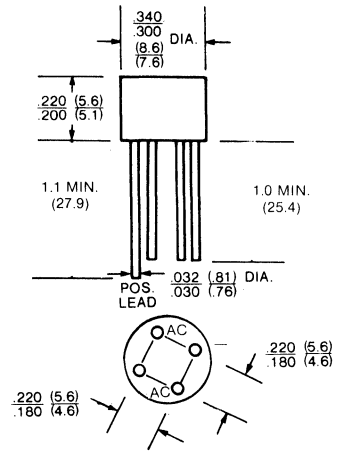
MINIATURE CONTROLLED AVALANCHE SILICON BRIDGE

GENERAL INSTRUMENT



VOLTAGE RANGE
200 to 800 Volts

CURRENT
1.5 Amperes



Dimensions in inches and (millimeters)

FEATURES
- Plastic material used carries Underwriters Laboratory recognition
- High case dielectric strength
- Typcial I_R less than 1 μ A
- Exceeds environmental standards of MIL-STD-19500
- Ideal for printed circuit board
- Controlled Avalanche Series
- 200 Watts Avalanche Power Dissipation for 100 μ s
- High temperature soldering guaranteed: 250°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA
Case: Reliable low cost construction utilizing molded plastic technique
Terminals: Leads solderable per MIL-STD-202, Method 208
Mounting Position: Any
Weight: 0.05 ounce, 1.3 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	AWO2M	AW04M	AWO6M	AWO8M	UNITS
Maximum Recurrent Peak Reverse Voltage	200	400	600	800	V
Maximum RMS Bridge Input Voltage	140	280	420	560	V
Maximum DC Blocking Voltage	200	400	600	800	V
Minimum Avalanche Breakdown Voltage at 100 μ A	250	450	650	850	V
Maximum Avalanche Breakdown Voltage at 100 μ A	700	900	1100	1300	V
Maximum Average Forward Output Current .375", 9.5mm lead lengths at T_A = 25°C	1.5				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50.0				A
I^2t Rating for fusing (t < .00835)	5.0				A^2t
Maximum Instantaneous Forward Voltage Drop per Bridge Element at 1.0A	1.0				V
Maximum Reverse DC Current at T_A = 25°C Rated DC Blocking Voltage T_A = 100°C	10.0 1.0				μA mA
Typical Junction Capacitance (Note 1)	24.0				pF
Operating Temperature Range T_A	-55 to +125				°C
Storage Temperature Range T_{STG}	-55 to +150				°C

NOTE: 1. Measured at 1.0 MHz and applied reverse voltage of 4.0 volts.

RATINGS AND CHARACTERISTIC CURVES
AWO-M SERIES

FIG. 1 — DERATING CURVE
OUTPUT RECTIFIED CURRENT

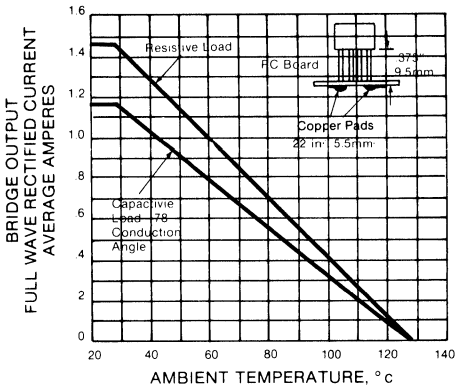


FIG. 2 — MAXIMUM NON-REPETITIVE
PEAK FORWARD CURRENT

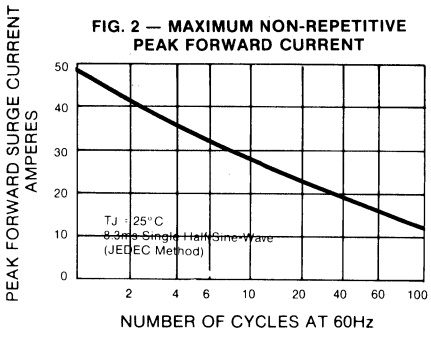


FIG. 3 — TYPICAL FORWARD
CHARACTERISTICS

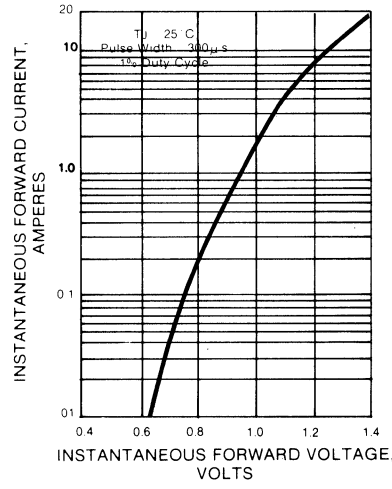


FIG. 4 — TYPICAL
REVERSE CHARACTERISTICS

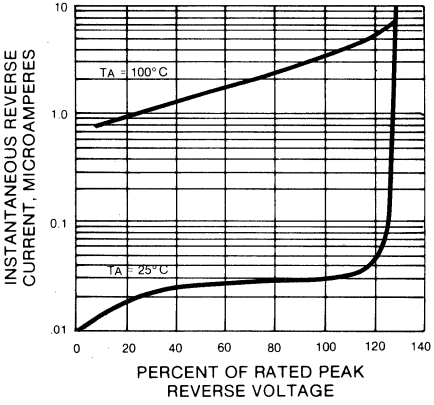
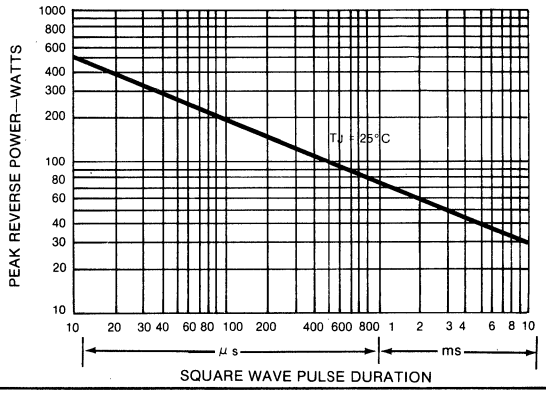


FIG. 5 — MAXIMUM NON-REPETITIVE AVALANCHE
SURGE POWER



KBP SERIES

MINIATURE SINGLE PHASE SILICON BRIDGE

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts PRV

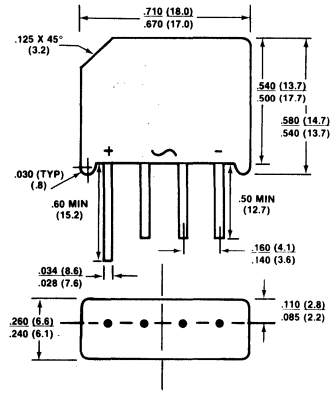
CURRENT
1.5 Amperes

FEATURES

- Plastic material used carries Underwriters Laboratory recognition.
- Ideal for printed circuit board.
- Typical I_R less than 1 μA.
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed: 300°C/ 10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL

Case: Reliable low cost construction utilizing molded plastic technique.
Terminals: Leads solderable per MIL-STD-202, Method 208
Mounting position: Any
Weight: 0.13 ounce, 3.6 grams



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz.
For capacitive load, derate current by 20%.

	KBP005	KBP01	KBP02	KBP04	KBP06	KBP08	KBP10	Units
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Output Current at 50°T_A	1.5							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	50							A
Maximum Instantaneous Forward Voltage Drop per Bridge Element at 1.0A	1.0							V
Maximum Reverse DC Current at Rated DC Blocking Voltage (Total Bridge) T_A = 25°C	10.0							μA
T_A = 100°C	1.0							mA
Operating Temperature Range T_A	-55 to +125							°C
Storage Temperature T_{STG}	-55 to +150							°C

RATINGS AND CHARACTERISTIC CURVES
KBP SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

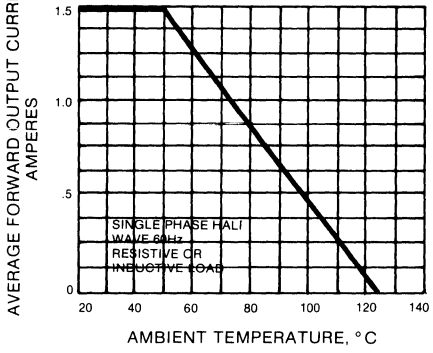


FIG. 2 — TYPICAL FORWARD CHARACTERISTICS

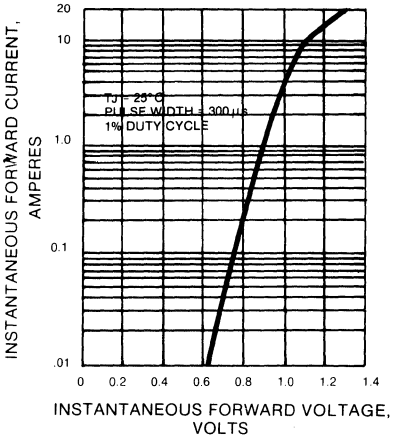


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

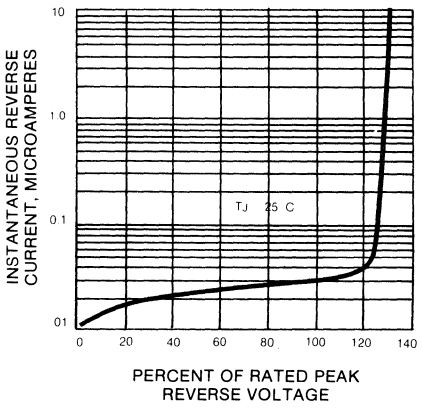
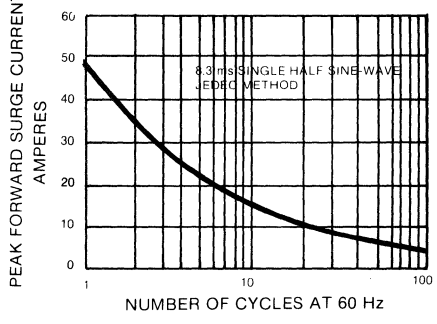


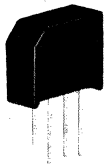
FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT



3N246 thru 3N252 SERIES

MINIATURE SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts

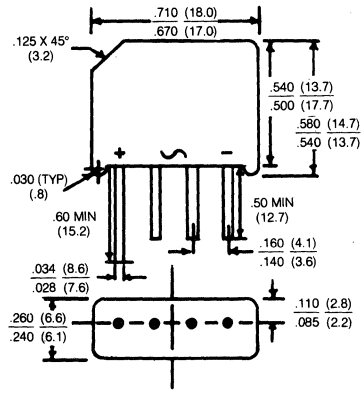
CURRENT
1.0 Amperes

FEATURES

- Built-In Printed Circuit Board Stand-Offs.
- Plastic material used carries Underwriters Laboratory recognition.
- High case dielectric strength.
- Typical I_R less than 1μA.
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed: 300°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3 kg) tension.

MECHANICAL DATA

Case: Reliable low cost construction utilizing molded plastic technique.
Terminals: Leads solderable per MIL-STD-202, Method 208.
Mounting Position: Any
Weight: 0.13 ounce, 3.6 grams



Dimensions in inches and (millimeters)

MAXIMUM RATING AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz.
For capacitive load, derate current by 20%.

	3N246	3N247	3N248	3N249	3N250	3N251	3N252	Units
*Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
*Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
*Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
*Maximum Average Forward Rectified Output Current at T_A = 75°C	1.0							A
*Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load at T_A = 75°C (JEDEC method)	30							A
*Maximum Instantaneous Forward Voltage Drop per Bridge Element at 1.57A	1.3							V
Maximum Reverse DC Current at Rated DC Blocking Voltage * T_A= 25°C T_A=100°C	10.0 1.0							μA mA
Typical Junction Capacitance per Bridge Element (Note 1)	24							pF
*Operating and Storage Temperature Range T_J, T_{STG}	−55 to +150°C							°C

NOTES: 1. Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
*JEDEC registered values

RATINGS AND CHARACTERISTIC CURVES
3N246 Thru 3N252

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

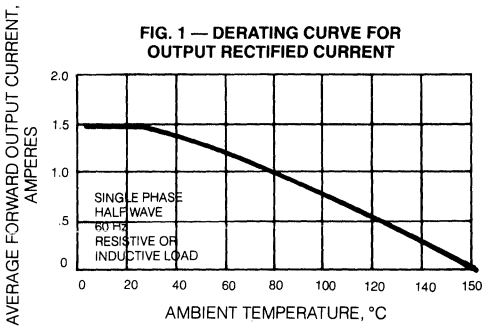


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

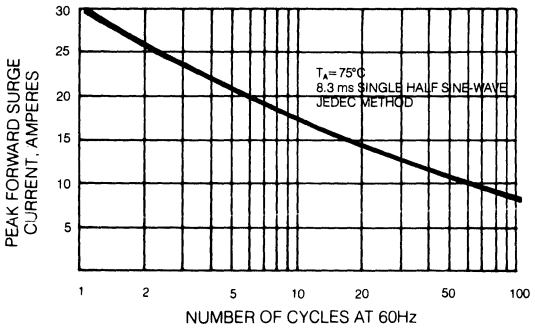


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

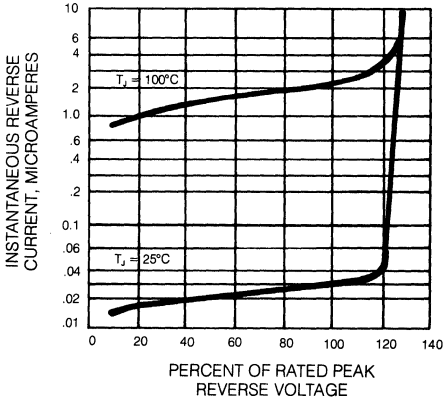


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

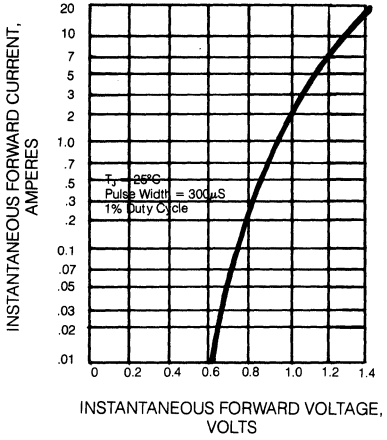
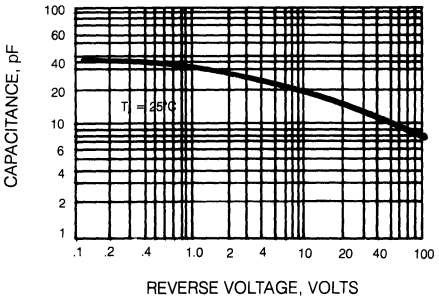


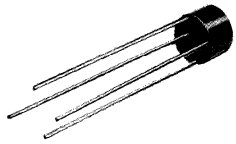
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



2W005M thru 2W10M SERIES

MINIATURE SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts

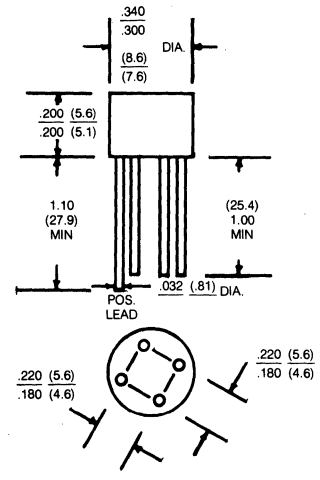
CURRENT
2.0 Amperes

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500.
- Ratings to 1000V PRV
- High surge current capability
- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique results in inexpensive product
- High temperature soldering guaranteed: 300°C/ 10 seconds/.375", (9.5mm) lead length/5 lbs. (2.3 kg) tension

MECHANICAL DATA

Case: Void-free plastic package
Leads: Solderable per MIL-STD-202, method 208
Mounting Position: Any
Handling precautions: None
Weight: 0.05 ounce, 1.3 grams



Dimensions in inches and (millimeters)

MAXIMUM RATING AND ELECTRICAL CHARACTERISTICS

Inductive or Resistive Load, 60 Hz.
All temperatures are 25°C ambient unless otherwise specified.
For capacitive load derate current by 20%.

	2W005M	2W01M	2W02M	2W04M	2W06M	2W08M	2W10M	Units
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Output Current .375" (9.5mm) Lead Lengths at T_A = 25'C	2.0							A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	60							A
I2t Rating for fusing (t < .00835)	7.5							A^2t
Maximum Instantaneous Forward Voltage per Bridge Element at 2.0A	1.1							V
Maximum Reverse DC Current at Rated T_A= 25°C DC Blocking Voltage per Bridge Element at T_A=100°C	10.0 1.0							μA mA
Typical Junction Capacitance per Bridge Element (Note 1)	30							pF
Operating Temperature Range T_A	−55 to 125							°C
Storage Temperature Range T_{STG}	−55 to 150							°C

NOTES
1. Measured at 1.0 MHz and applied reverse voltage of 4.0 V_{DC}

RATINGS AND CHARACTERISTIC CURVES
2W-M SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

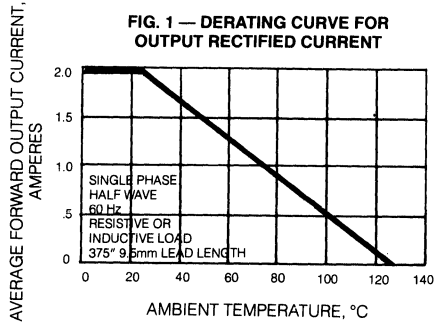


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK SURGE CURRENT

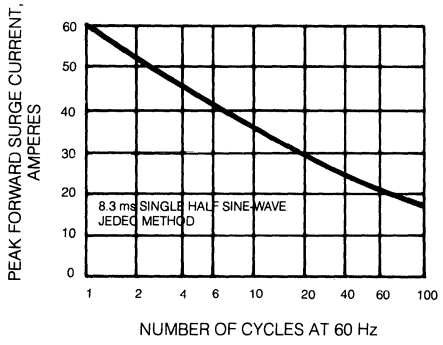


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

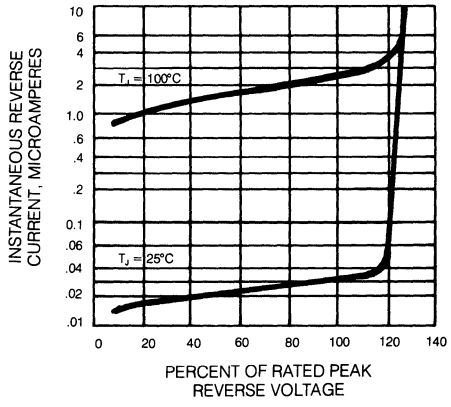


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

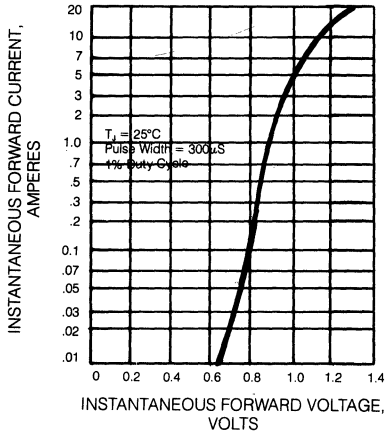
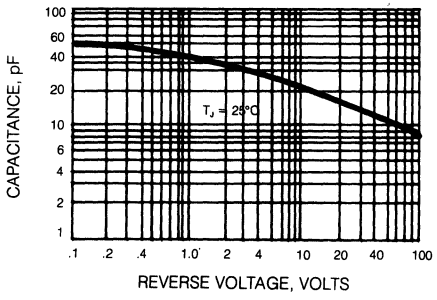


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



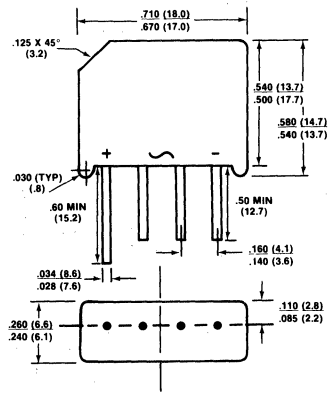
2KBP SERIES

MINIATURE SINGLE PHASE SILICON BRIDGE

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts PRV

CURRENT
2.0 Amperes



Dimensions in inches and (millimeters)

FEATURES

- Plastic material used carries Underwriters Laboratory recognition.
- Ideal for printed circuit board.
- Typical I_R less than 1 μA.
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed: 300°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL

Case: Reliable low cost construction utilizing molded plastic tehcnique.
Terminals: Leads solderable per MIL-STD-202, Methode 208.
Mounting position: Any
Weight: 0.13 ounce, 3.6 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz.
For capactivie load, derate current by 20%.

	2KBP005	2KBP01	2KBP02	2KBP04	2KBP06	2KBP08	2KBP10	Units
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Output Current at T_A = 50°C	2.0							A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load	60							A
Maximum Instantaneous Forward Voltage Drop per Bridge Element at 1.0 ADC	1.0							V
Maximum Reverse DC Current at Rated DC Blocking Voltage (Total Bridge) T_A = 25°C	10.0							μA
T_A = 100°C	1.0							mA
Operating Temperature Range T_J	-55 to +125							°C
Storage Temperature Range T_{STG}	-55 to +150							°C

RATING AND CHARACTERISTIC CURVES
2KBP SERIES

FIG. 1 — DERATING CURVE FOR RECTIFIED OUTPUT CURRENT

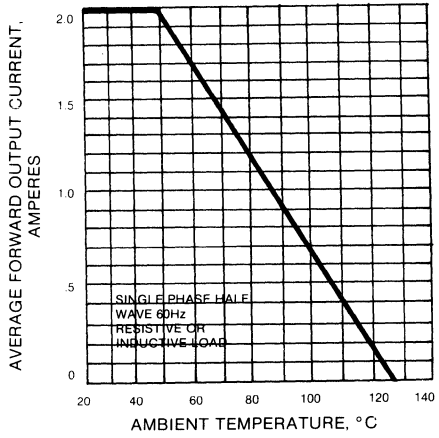


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS PER BRIDGE ELEMENT

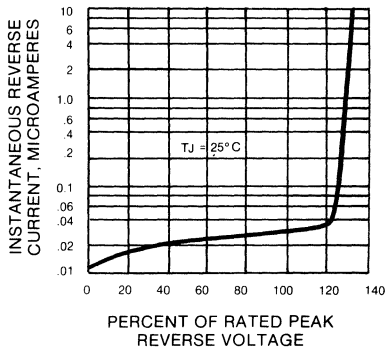


FIG. 3 — TYPICAL FORWARD CHARACTERISTICS PER BRIDGE ELEMENT

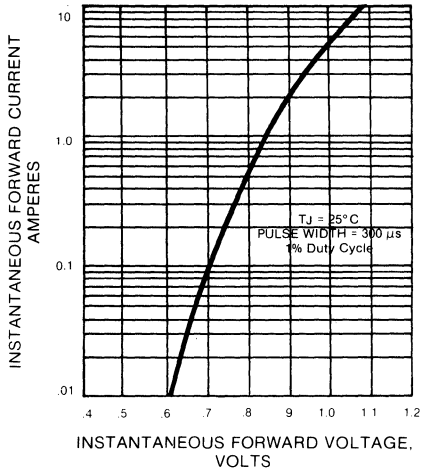
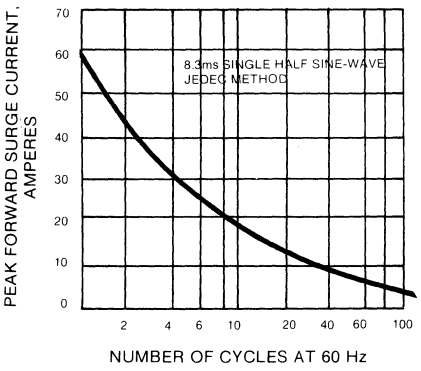


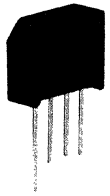
FIG. 4 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



3N253 thru 3N259 SERIES

MINIATURE SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT



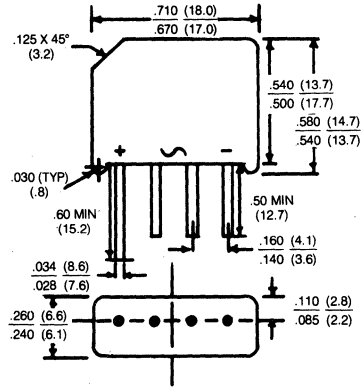
VOLTAGE RANGE
50 to 1000 Volts
CURRENT
2.0 Amperes

FEATURES

- Built-In Printed Circuit Board stand-offs.
- Plastic material used carries Underwriters Laboratory recognition.
- High case dielectric strength.
- Typical I_R less than 1μA.
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed: 300°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3 kg) tension.

MECHANICAL DATA

Case: Reliable low cost construction utilizing molded plastic technique.
Terminals: Leads solderable per MIL-STD-202, Method 208.
Mounting Position: Any
Weight: 0.13 ounce, 3.6 grams



Dimensions in inches and (millimeters)

MAXIMUM RATING AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz.
For capacitive load, derate current by 20%.

	3N253	3N254	3N255	3N256	3N257	3N258	3N259	Units
* Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
* Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
* Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
* Maximum Average Forward Rectified Output Current at T_A = 55°C	2.0							A
* Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load at T_A = 55°C (JEDEC method)	60							A
* Maximum Instantaneous Forward Voltage Drop per Bridge Element at 3.14A	1.1							V
Maximum Reverse DC Current at Rated DC Blocking Voltage * T_A= 25°C T_A=100°C	10.0 1.0							μA mA
Typical Junction Capacitance per Bridge Element (Note 1)	30							pF
*Operating and Storage Temperature Range T_J, T_{STG}	−55 to +165°C							°C

NOTES: 1. Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
* JEDEC registered values

RATING AND CHARACTERISTIC CURVES
3N253 Thru 3N259

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

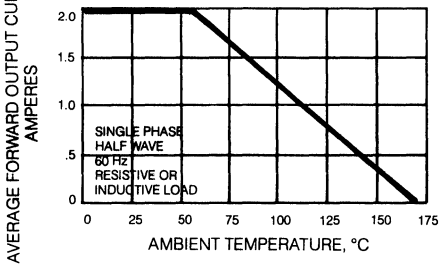


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK SURGE CURRENT

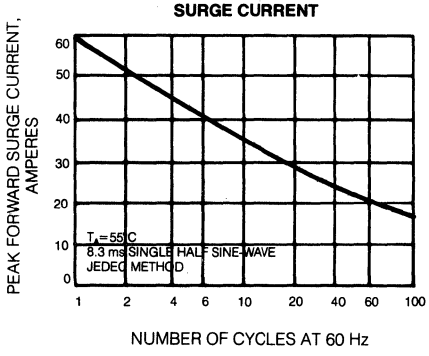


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

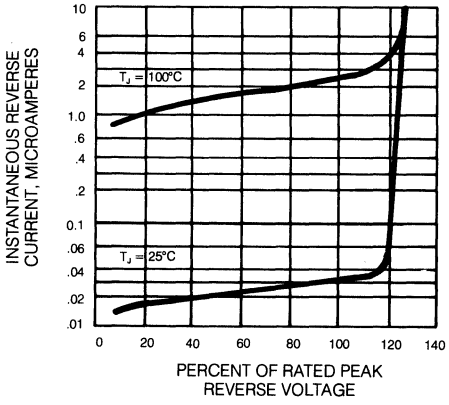


FIG. 4 — TYPICAL FORWARD CHARACTERISTICS

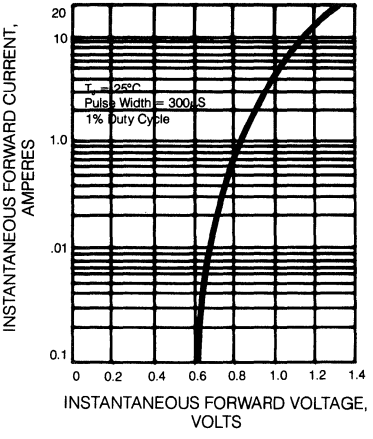
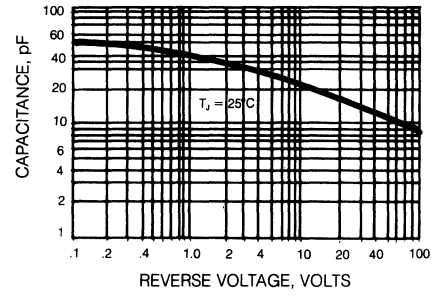


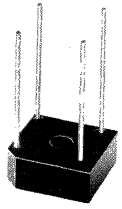
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



KBPC1 SERIES

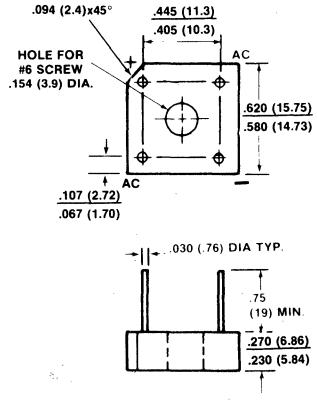
SINGLE PHASE SILICON BRIDGE

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts PRV

CURRENT
3.0 Amperes



Polarity shown on side of case;
positive lead by beveled corner.

Dimensions in inches and (millimeters)

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed internal rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 250°C/10 seconds/.375", (9.5mm) lead length at 5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Void-free plastic package
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Mounting: Thru hole for #6 screw
Mounting Position: Any
Weight: 0.2 ounces, 5.5 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	KBPC 1005	KBPC 101	KBPC 102	KBPC 104	KBPC 106	KBPC 108	KBPC 110	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum Average Forward Rectified Output Current at T_C = 50°C (Note 1)				3.0				A
Maximum Average Forward Rectified Output Current at T_A = 50°C (Note 2)				2.0				A
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC Method)				50.0				A
Maximum Instantaneous Forward Voltage Drop per element at 1.5A				1.1				V
Typical Junction Capacitance per Element (Note 3)				20				pF
Maximum Reverse Leakage at rated DC Blocking Voltage per element T_A = 25°C				10.0				μA
Maximum Reverse Leakage at rated DC Blocking Voltage per element T_A = 100°C				1.0				mA
Typical Thermal Resistance $R\Theta JA$ (Note 1)				22				°C/W
Operating Temperature Range T_C				-55 to +150				°C
Storage Temperature Range T_{STG}				-55 to +150				°C

NOTES:
1. Unit mounted on 2.0" sq. by .06" thick (50mm² by 1.5mm) copper plate.
2. Unit mounted on P.C. board .375", (9.5mm) lead lengths.
3. Measured at 1.0 MHz and applied reverse voltage of 4.0 volts.

RATING AND CHARACTERISTIC CURVES
KBPC1 SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

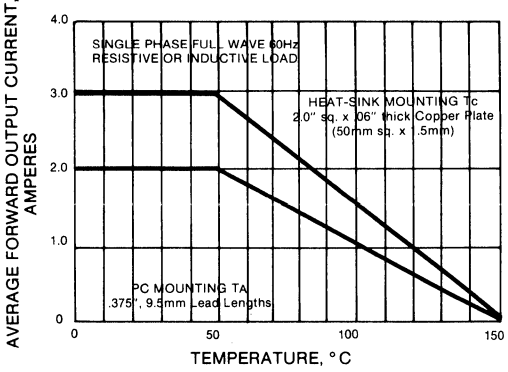


FIG. 2 — MAXIMUM NON-REPETITIVE SURGE CURRENT

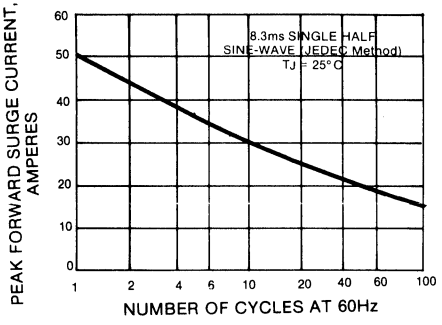


FIG. 3 — TYPICAL FORWARD CHARACTERISTICS

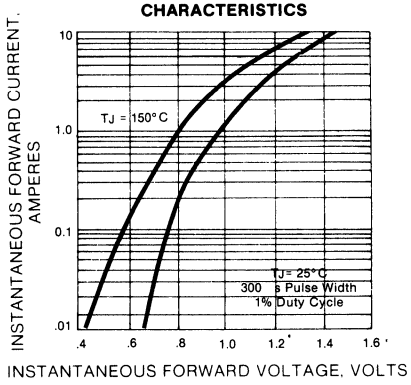


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

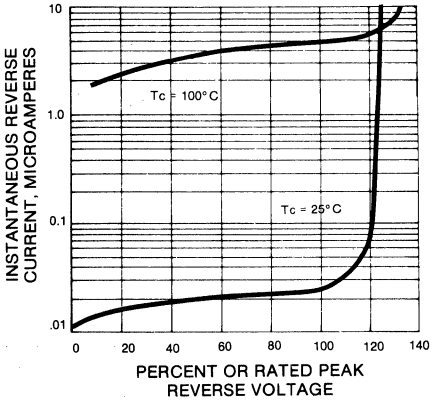


FIG. 5 — TYPICAL JUNCTION CAPACITANCE PER ELEMENT

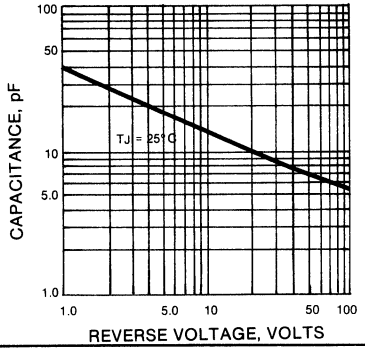
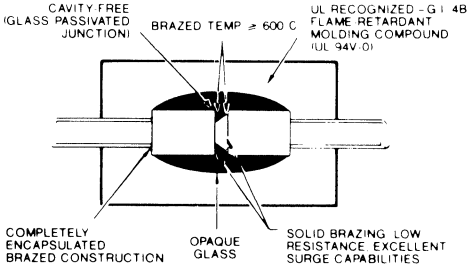


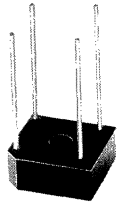
FIG. 6 — SUPERECTIFIER JUNCTION FOR INTERNAL DEVICES



AKBPC1 SERIES

CONTROLLED AVALANCHE SILICON BRIDGE

GENERAL INSTRUMENT

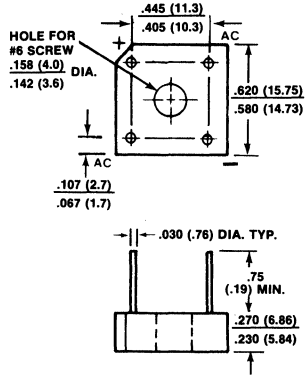


VOLTAGE RANGE
200 to 800 Volts PRV
CURRENT
3.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed internal rectifiers.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junctions in molded epoxy case
- Controlled avalanche series
- 200 watt avalanche power dissipation for 100 μs
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 300° C/10 seconds/.375" (9.5mm) lead length at 5 lbs. (2.3kg) tension

Case: Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Mounting position: Any
Weight: 0.012 ounce, 3.5 gram



Polarity shown on side of case: positive lead by beveled corner.

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	AKBPC102	AKBPC104	AKBPC106	AKBPC108	UNITS
Maximum Recurrent Peak Reverse Voltage	200	400	600	800	V
Maximum RMS Bridge Input Voltage	140	280	420	560	V
Minimum Avalanche Breakdown Voltage at 50 μ A	250	450	650	850	V
Maximum Avalanche Breakdown Voltage at 50 μ A	700	900	1100	1300	V
Maximum average Forward T_C = 50° C (Note 1) Rectified Output Current at: T_A = 50° C (Note 2)	3.0 2.0				A A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC	50				A
Maximum Instantaneous Forward Voltage Drop per element at 1.5A	1.1				V
Maximum Reverse Current at Rated DC Blocking Voltage per element T_A = 25° C T_C = 100° C	10.0 100				μA μA
Operating Temperature Range Tc	-55 to +150				°C
Storage Temperature Range T_{STG}	-55 to +150				°C

NOTES:
1. Unit mounted on 2" sq. x .06" thick (50mm² x 1.5mm) copper plate.
2. Unit mounted on P.C. board with .375", 9.5mm lead lengths.

RATINGS AND CHARACTERISTIC CURVES
AKBPC1 SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

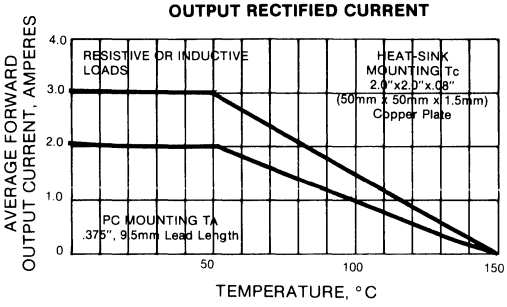


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

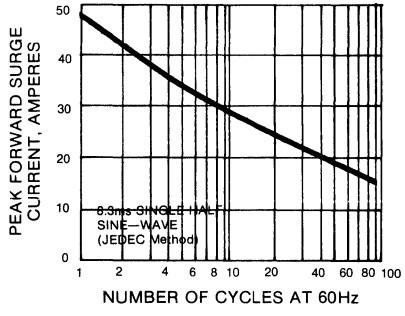


FIG. 3 — TYPICAL FORWARD CHARACTERISTICS PER ELEMENT

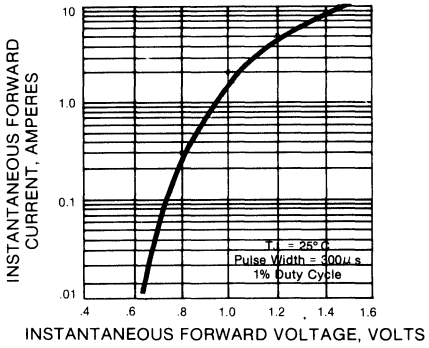


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

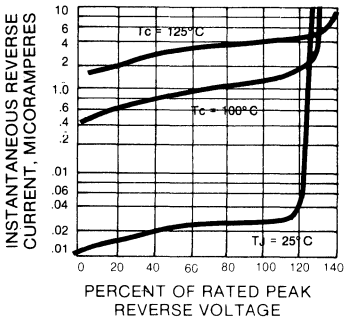


FIG. 5 — TYPICAL JUNCTION CAPACITANCE PER ELEMENT

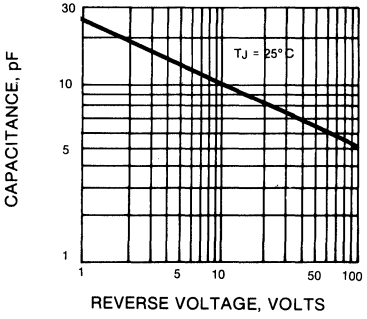
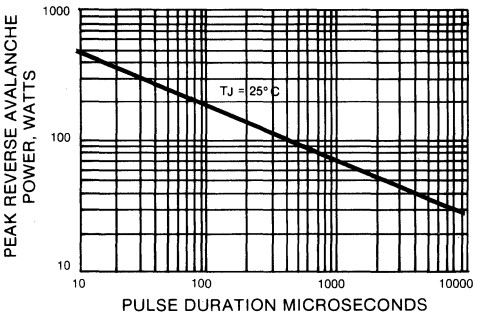


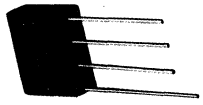
FIG. 6 — MAXIMUM NON-REPETITIVE REVERSE AVALANCHE POWER



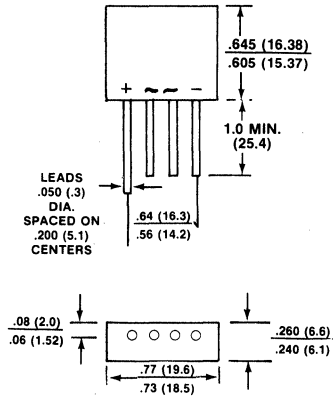
KBL SERIES

SILICON SINGLE-PHASE BRIDGE RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts
CURRENT
4.0 Amperes



Dimensions in inches and (millimeters)

FEATURES

- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- Surge overload rating: 200 amperes peak
- Mounting position: Any
- Leads: Solderable per MIL-STD-202, Method 208
- Weight: 0.2 ounce, 5.6 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	KBL005	KBL01	KBL02	KBL04	KBL06	KBL08	KBL10	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Output Current at T_A = 50°C	4.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	200							A
Maximum Instantaneous Forward Voltage Drop per Bridge Element at 4.0A	1.1							V
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_C = 150°C	10.0 1.0							μA mA
Maximum Thermal Resistance RθJC (Note 2)	20							°C/W
Operating and Storage Temperature Range, T_J, T_{STG}	-55 to +150							°C

NOTES:
1. Mounting conditions, 0.5" (1.27mm) lead length.
2. Thermal Resistance Junction to case per diode with .5" (1.27mm) lead lengths.

RATINGS AND CHARACTERISTIC CURVES
KBL SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

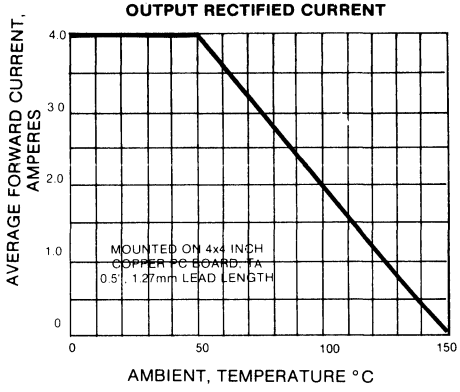


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

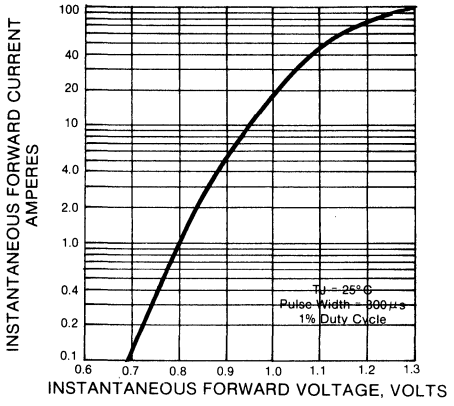


FIG. 3 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

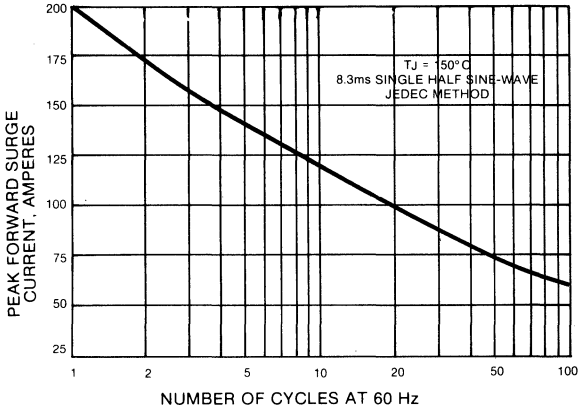


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

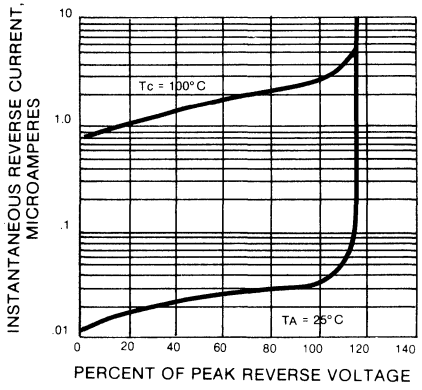
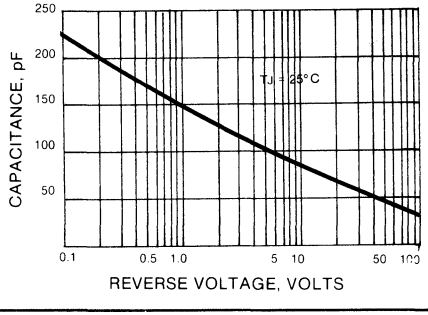


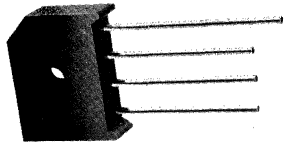
FIG. 5 — TYPICAL JUNCTION CAPACITANCE PER ELEMENT



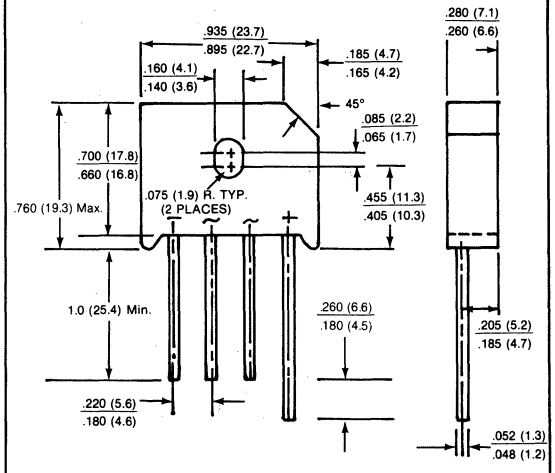
KBU4 SERIES

SILICON SINGLE-PHASE BRIDGE RECTIFIERS

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts
CURRENT
4.0 Amperes



All dimension in inches and (millimeters)

FEATURES

- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has Underwriters Laboratory Flammibility Classification 94V-0
- Surge overload rating: 200 amperes peak
- Mounting position: Any
- Weight: 0.3 ounces, 8.0 grams
- Mounting Torgue: 5 In. lb. max

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless specified. Resistive or inductive load, 60 Hz.
For capacitance load derate current by 20%.

	KBU4A	KBU4B	KBU4D	KBU4G	KBU4J	KBU4K	KBU4M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Output Current at Tc = 100°C TA = 65°C				4.0 4.0				A A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)				200				A
Maximum Instantanous Forward Voltage Drop per element at 4.0A				1.0				V
Maximum Reverse Leakage at rated DC Blocking Voltage per element TA = 25°C Tc = 100°C				10 100				μA μA
Maximum Thermal Resistance RΘJC (Note 1)				14.0				°C/W
Operating and Storage Temperature Range, TJ, TSTG				-65 to +150				°C

NOTE:
1. Thermal Resistance Junction to Case per diode.

RATING AND CHARACTERISTICS CURVE
KBU4 SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

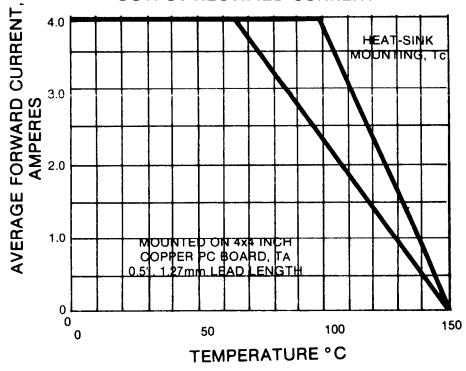


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

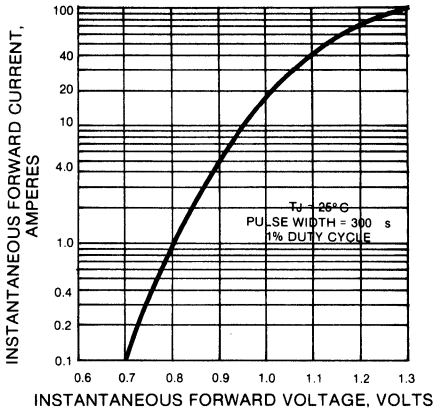


FIG. 3 — MAXIMUN NON-REPETITIVE PEAK FORWARD SURGE CURRENT

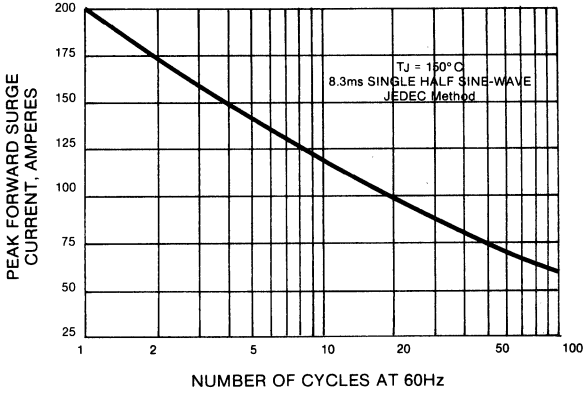


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

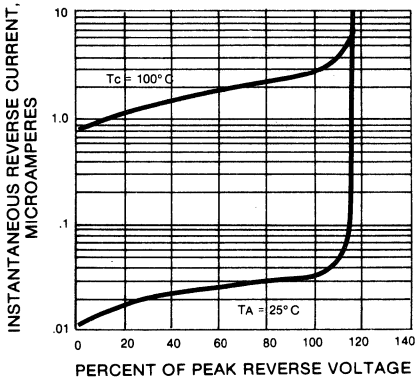
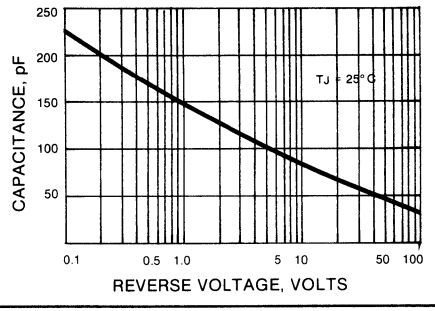


FIG. 5 — TYPICAL JUNCTION CAPACITANCE PER ELEMENT

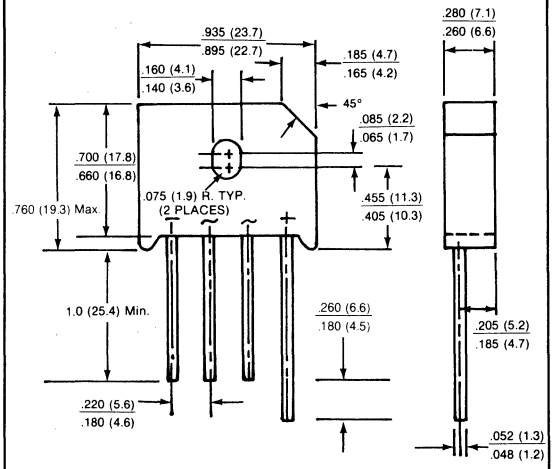


KBU6 SERIES

SILICON SINGLE-PHASE BRIDGE RECTIFIERS

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts
CURRENT
6.0 Amperes



All dimensions in inches and (millimeters)

FEATURES

- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has Underwriters Laboratory Flammability Classification 94V-0.
- Surge overload rating: 250 amperes peak
- Mounting position: Any
- Weight: 0.3 ounces, 8.0 grams
- Mounting Torgue: 5 in. lb. max.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60 Hz.
For capacitive load derate current by 20%.

	KBU6A	KBU6B	KBU6D	KBU6G	KBU6J	KBU6K	KBU6M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Output Current at T_C = 100°C				6.0				A
Maximum Average Forward Rectified Output Current at T_A = 40°C				6.0				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)				250				A
Maximum Instantaneous Forward Voltage Drop per element at 6.0A				1.0				V
Maximum Reverse Leakage at rated DC Blocking Voltage per element T_A = 25°C				10				μA
Maximum Reverse Leakage at rated DC Blocking Voltage per element T_C = 100°C				200				μA
Thermal Resistance RΘJC (Note 1)				10.0				°C/W
Operating and Storage Temperature Range, T_J, T_{STG}				-65 to +150				°C

NOTE:
1. Thermal Resistance Junction to Case per diode.

KBU6 SERIES
RATING AND CHARACTERISTIC CURVES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

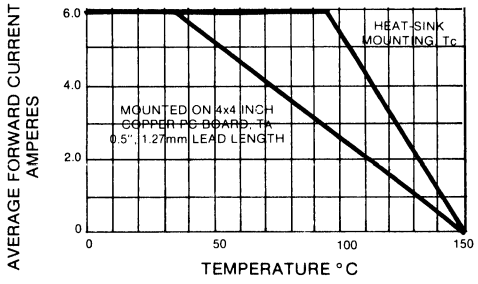


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

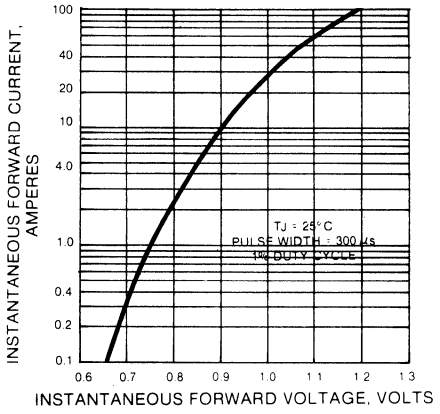


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

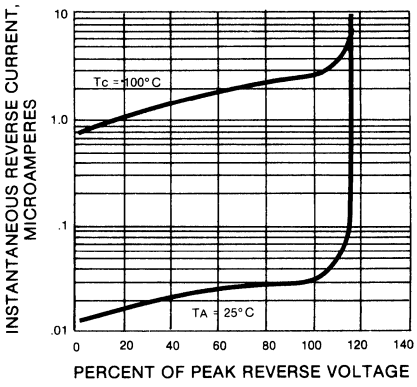


FIG. 4 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

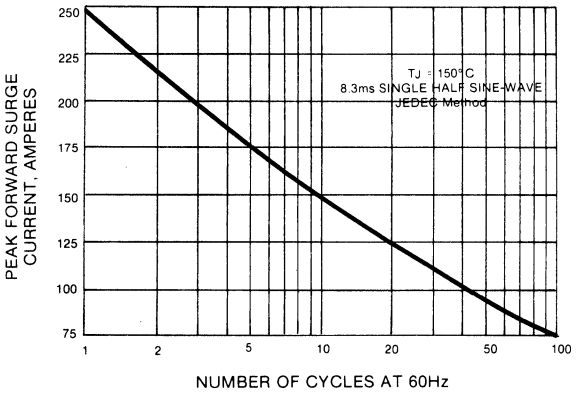
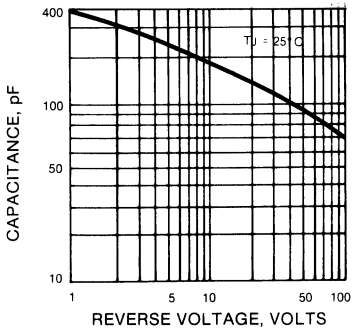


FIG. 5 — TYPICAL JUNCTION CAPACITANCE PER ELEMENT

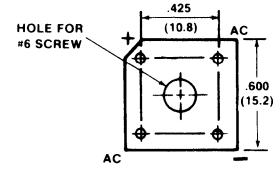


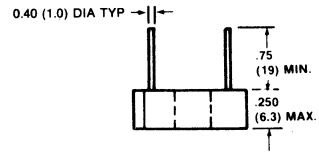
KBPC6 SERIES

6 AMPERE/8 AMPERE SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts
CURRENT
6 and 8 Amperes





Polarity shown on side of case;
positive lead by beveled corner.

FEATURES
- Surge overload rating — 125 Amperes peak
- Low forward voltage drop
- Mounting position: Any
- Small size, simple installation
- Leads solderable per MIL-STD-202, Method 208
- Weight: 0.2 ounce, 5.5 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified, resistive or inductive load at 60Hz.
For capactive load, derate current by 20%.

	KBPC 6005	KBPC 601	KBPC 602	KBPC 604	KBPC 606	KBPC 608	KBPC 610	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum Average Forward Rectified Output Current at: T_C = 50°C*	8.0							A
T_C = 100°C*	6.0							A
T_A = 50°C**	6.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load	125							A
Maximum Forward Voltage Drop per element at 3.0A	1.2							V
Maximum Reverse Current at Rated DC Blocking Voltage per element T_A = 25°C	10.0							μA
T_A = 100°C	1.0							mA
Operating Temperature Range T_J	-55 to +125							°C
Storage Temperature Range T_{STG}	-55 to +150							°C

NOTES:
* Unit mounted on metal chassis
** Unit mounted on P.C. board

FIG. 1 — MAXIMUM FORWARD SURGE CURRENT

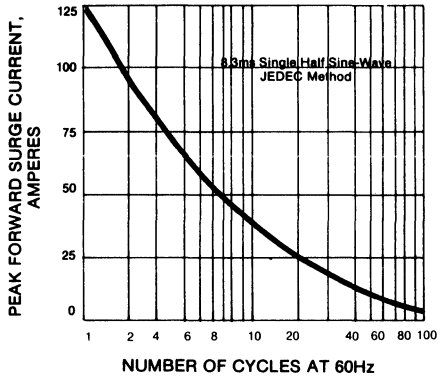


FIG. 2 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

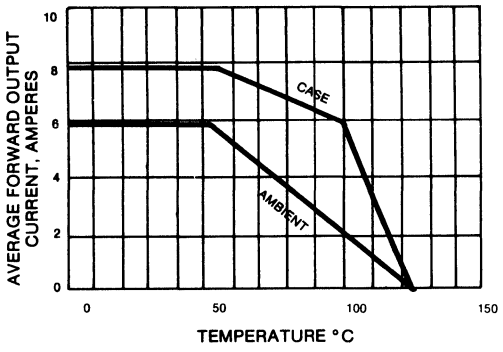


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

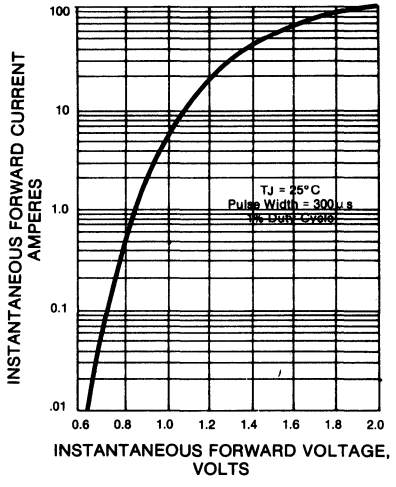
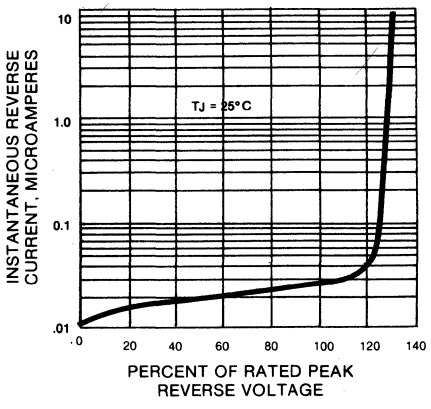


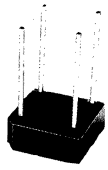
FIG. 4 — TYPICAL REVERSE CHARACTERISTICS



AKBPC6 SERIES

6 AMPERE/8 AMPERE CONTROLLED AVALANCHE SILICON BRIDGE

GENERAL INSTRUMENT



VOLTAGE RANGE
200 to 800 Volts

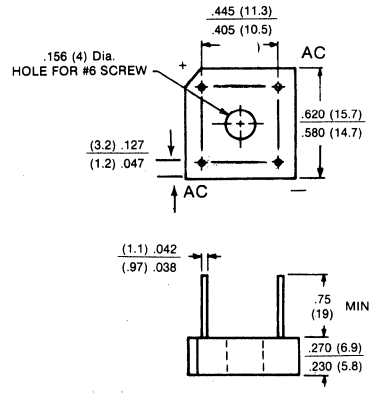
CURRENT
6 Amperes

FEATURES

- Plastic material used carries Underwriters Laboratory recognition
- High surge current capability
- Avalanche type diodes
- Ideal for printed circuit board
- Typical I_R less than 1μA
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed: 300°C/10 seconds/.385", 9.5mm lead length/5 lbs., 11 kg tension.

MECHANICAL DATA

Case: Reliable low cost construction utilizing molded plastic technique
Terminals: Leads solderable per MIL-STD-202, method 208
Mounting Position: Any
Weight: 0.2 ounce, 5.5 grams



Polarity shown on side of case; positive lead by beveled corner.
Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz. For capacitive load, derate current by 20%.

	AKBPC602	AKBPC604	AKBPC606	AKBPC608	UNITS
Maximum Recurrent Peak Reverse Voltage	200	400	600	800	V
Maximum RMS Input Voltage	140	280	420	560	Vp
Minimum Avalanche Breakdown Voltage @ 100μA	250	450	650	850	V
Maximum Avalanche Breakdown voltage @ 100μA	700	900	1100	1300	V
Maximum Average Forward Rectified Output Current at T_C = 50°C T_C = 100°C	8.0 6.0				A
Maximum Instantaneous Forward Voltage Drop per element at 3.0A	1.2				V
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125				A
Maximum Continuous Power Dissipation in the avalanche region at T_C = 50°C	2.0				W
Maximum Peak Power Dissipation in the avalanche region for 20μs Pulse	400				W
Maximum Reverse Current at Rated DC Blocking Voltage per total Bridge T_A = 25°C T_A = 100°C	10.0 1.0				μA mA
Operating Temperature Range, T_J	-55 to +125				°C
Storage Temperature Range T_{STG}	-55 to +150				°C

NOTES: *Unit mounted on metal chassis, 4 in² x .06" thick (100mm²x1.5mm).

RATING AND CHARACTERISTIC CURVES
AKBPC6 SERIES

FIG. 1 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

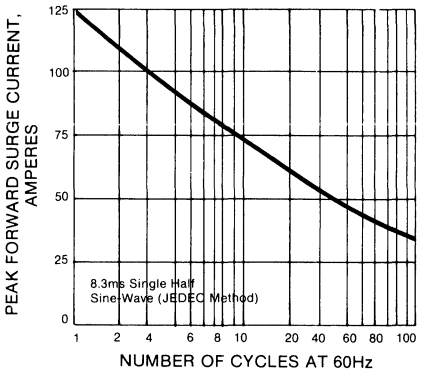


FIG. 2—DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

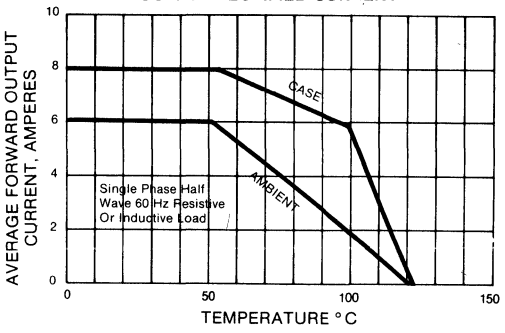


FIG. 3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

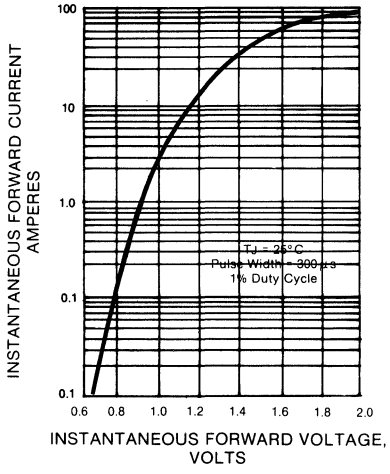


FIG. 4—CONTINUOUS REVERSE AVALANCHE DERATING CURVE

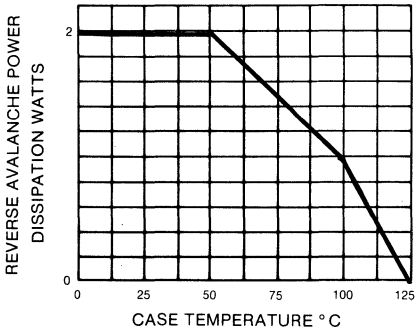
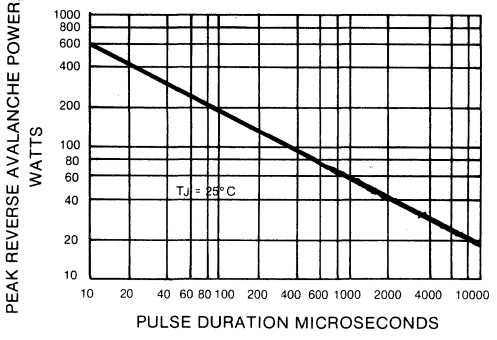


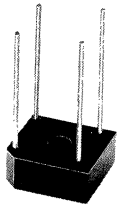
FIG. 5—MAXIMUM NON-REPETITVE REVERSE AVALANCHE POWER



KBPC8 SERIES

6 AMPERE/8 AMPERE SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts

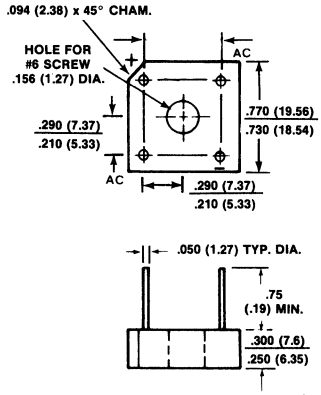
CURRENT
8.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contact as found in diode-constructed internal rectifiers
- Glass passivated junctions over molded epoxy case
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 250°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Void-free plastic package
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Mounting: Thru hole for #6 screw
Mounting position: Any
Weight: .024 ounce, 6.9 grams



Polarity shown on side of case; positive lead by beveled corner.

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	KBPC 8005	KBPC 801	KBPC 802	KBPC 804	KBPC 806	KBPC 808	KBPC 810	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum Average Forward Rectified Output Current at: T_C = 50°C (Note 1)				8.0				A
T_A = 50°C (Note 2)				3.0				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)				125				A
Maximum Instantaneous Forward Voltage Drop per element at 3.0A				1.2				V
Maximum Reverse Current at Rated DC Blocking Voltage per element T_A = 25°C				10.0				μA
T_C = 100°C				1.0				mA
Maximum Thermal Resistance $R_{\theta JC}$ (Note 1)				10				°C/W
Operating and Storage Temperature Range T_C, T_{STG}				-55 to +150				°C

NOTES:
1. Unit mounted on 6.0" sq. x .06" thick (150mm²x1.5mm) copper plate.
2. Unit mounted on P.C. board at .375", 9.5mm lead lengths.

RATING AND CHARACTERISTIC CURVES
KBPC8 SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

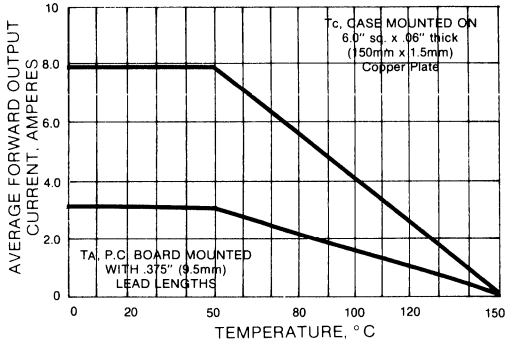


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

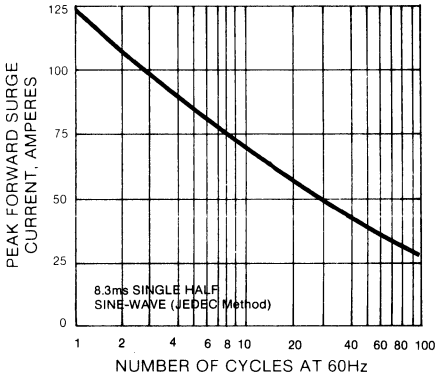


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER ELEMENT

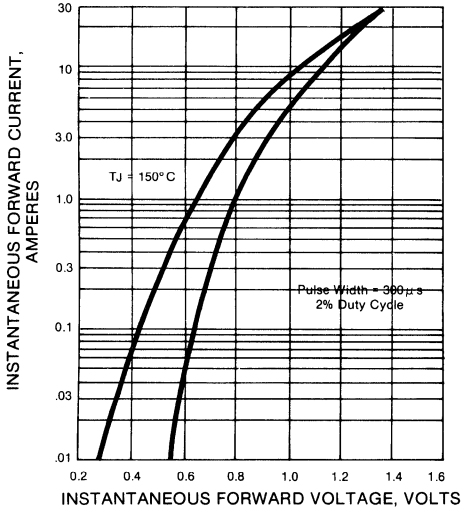


FIG. 4 — TYPICAL JUNCTION CAPACITANCE PER ELEMENT

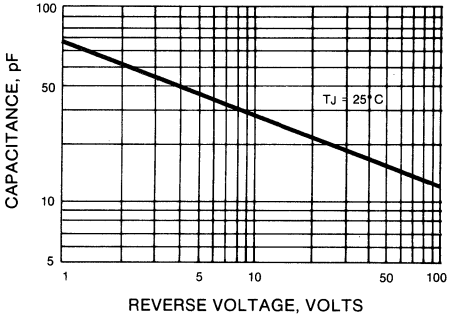
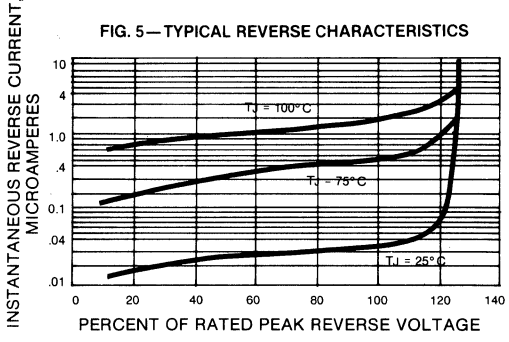


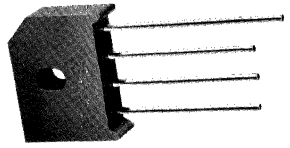
FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



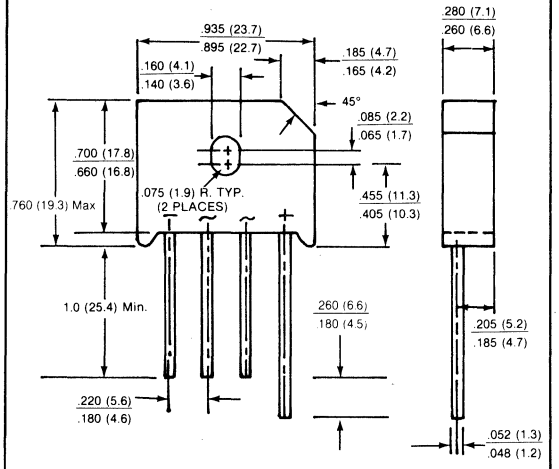
KBU8 SERIES

SILICON SINGLE-PHASE BRIDGE RECTIFIERS

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts
CURRENT
8.0 Amperes



All dimensions in inches and (millimeters)

FEATURES

- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has Underwriters Laboratory Flammability Classification 94V-0
- Surge overload rating: 300 amperes peak
- Mounting position: Any
- Weight: 0.3 ounces, 8.0 grams
- Mounting Torgue: 5 in. lb. max.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load 60 Hz.
For capacitive load derate current by 20%.

	KBU8A	KBU8B	KBU8D	KBU8G	KBU8J	KBU8K	KBU8M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Output Current at T_C = 100°C				8.0				A
Maximum Average Forward Rectified Output Current at T_A = 45°C				6.0				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)				300				A
Maximum Instantaneous Forward Voltage Drop per element at 8.0A				1.0				V
Maximum Reverse Leakage at rated DC Blocking Voltage per element T_A = 25°C				10				μA
Maximum Reverse Leakage at rated DC Blocking Voltage per element T_C = 100°C				300				μA
Thermal Resistance $R\Theta JC$ (Note 1)				8.0				°C/W
Operating and Storage Temperature Range, T_J, T_{STG}				-65 to +150				°C

NOTE:
1. Thermal Resistance Junction to Case per diode.

KBU8 SERIES
RATING AND CHARACTERISTIC CURVES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

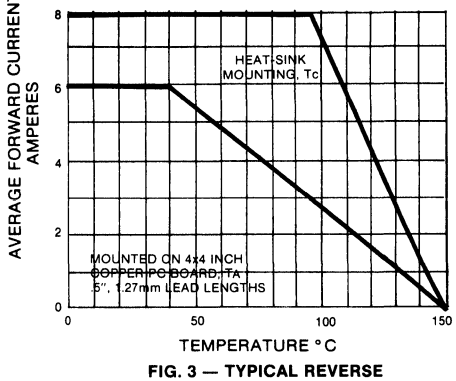


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

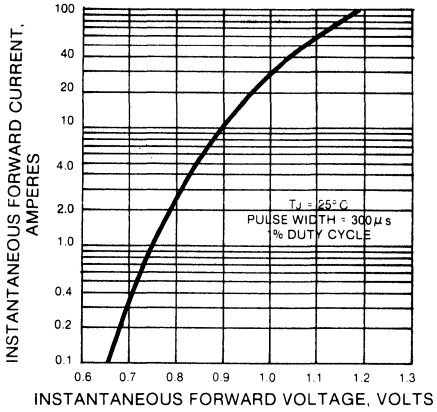


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

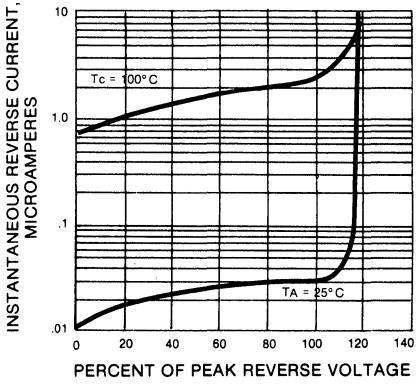


FIG. 4 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

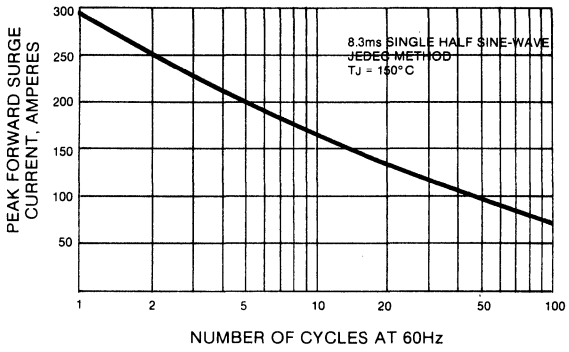
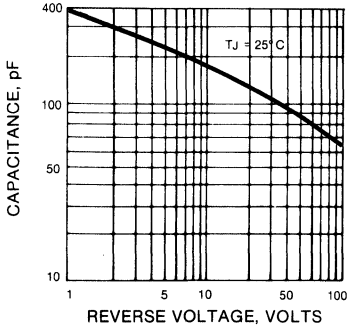


FIG. 5 — TYPICAL JUNCTION CAPACITANCE PER ELEMENT



KBPC10, 12, 15, 25, 35 SERIES

HIGH CURRENT SILICON BRIDGE RECTIFIERS

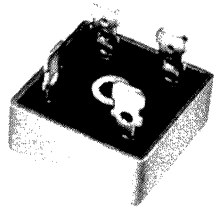
GENERAL INSTRUMENT

FEATURES

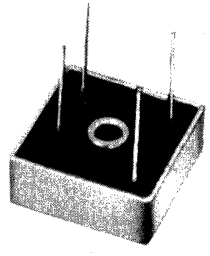
- Electrically isolated metal case for maximum heat dissipation
- Surge overload ratings to 400 amperes
- Terminals either universal .25" (6.35mm) FASTON or wire leads
- For extra creepage distance insulating coating is available
- These bridge are on the U/L Recognized Products List for current of 10, 15, 25 and 35 amperes
- High temperature soldering guaranteed: 300°C/10 seconds/ 5 lbs. (2.3kg) tension

MECHANICAL DATA

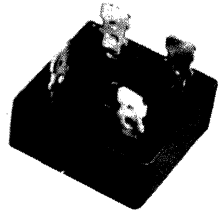
Case: Metal, electrically isolated. For extra creepage cover see Fig. 10 Suffix letter "D" added to indicate insulating coating.
Terminals: Either plated .25" (6.35mm) FASTON or plated copper leads .040" (1.02mm) diameter. Suffix letter "W" added to indicate leads.
Weight: 1.0 ounce, 30 grams
Mounting Position: Bolt down on heat-sink for maximum heat transfer efficiency.
Position lug (optional): .062" (1.57mm) diameter, 0.82" (2.08mm) high. Indicated by suffix letter "L"
Mounting Torque: 20 in. lb. max.



KBPC



KBPC-W



KBPC-D

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz. For capacitive load, derate current by 20%.

		-005	-01	-02	-04	-06	-08	-10	Units
Maximum Recurrent Peak Voltage		50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage		35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage		50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Output Current at Tc = 55°C	KBPC10	10.0							A
	KBPC12	12.0							A
	KBPC15	15.0							A
	KBPC25	25.0							A
	KBPC35	35.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	KBPC10	200							A
	KBPC12	300							A
	KBPC15	300							A
	KBPC25	300							A
	KBPC35	400							A
Maximum Instantaneous Forward voltage per Bridge Element at Specified Current	KBPC10 @ IF = 5A	1.2							V
	KBPC12 @ IF = 6.0A								
	KBPC15 @ IF = 7.5A								
	KBPC25 @ IF = 12.5A								
	KBPC35 @ IF = 17.5A								
Maximum Reverse DC Current at Rated DC Blocking Voltage per element		10							μA
Operating Temperature Range TJ Storage Temperature Range TSTG		-65 to +175							°C

RATING AND CHARACTERISTIC CURVES

FIG. 1

TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

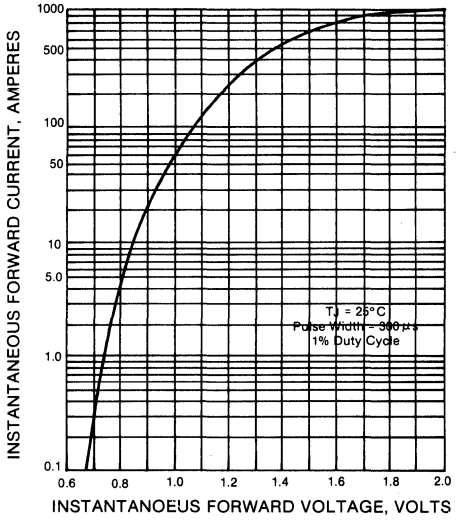


FIG. 2

MAXIMUM OUTPUT RECTIFIED CURRENT

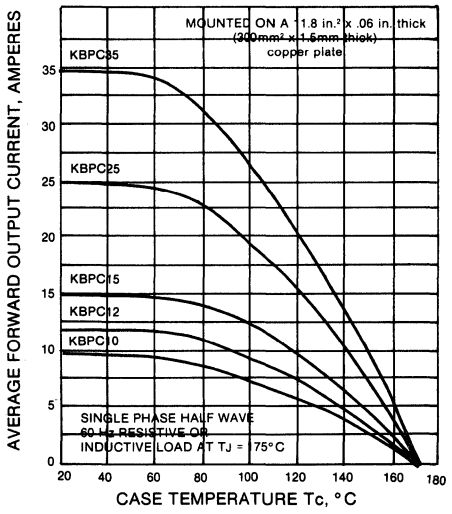


FIG. 3

MAXIMUM OUTPUT RECTIFIED CURRENT

BRIDGE MOUNTED ON AN 8"², (30.3cm²) ALUMINUM PLATE .25" (6.35mm) THICK

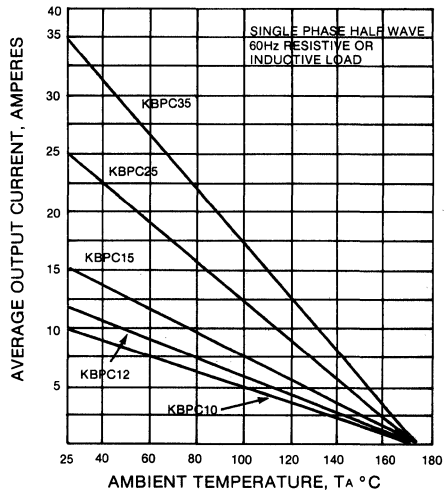


FIG. 4

MAXIMUM POWER DISSIPATION

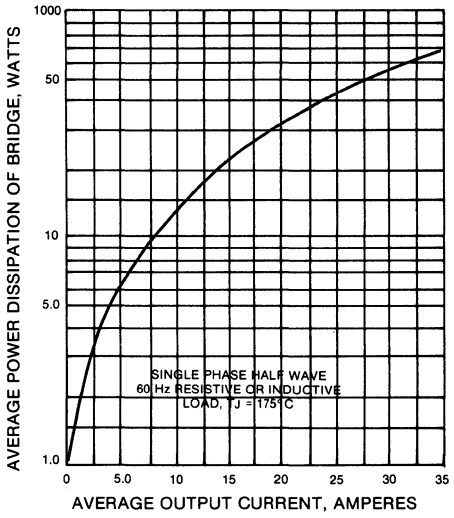


FIG. 5

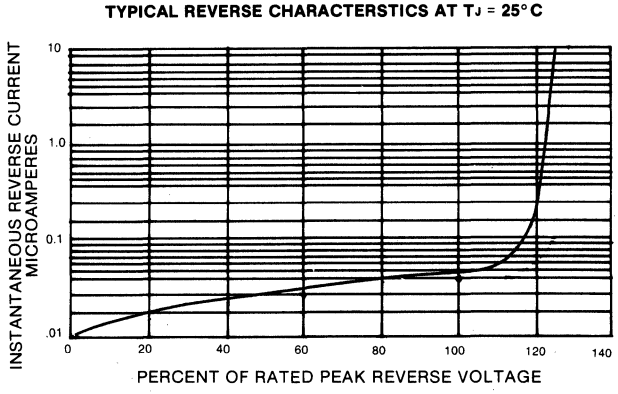


FIG. 6

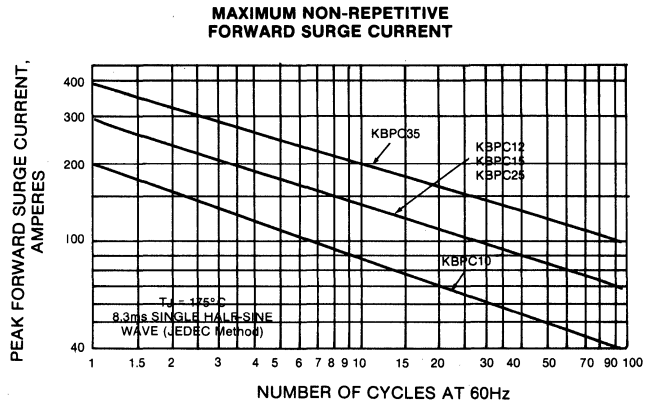


FIG. 7

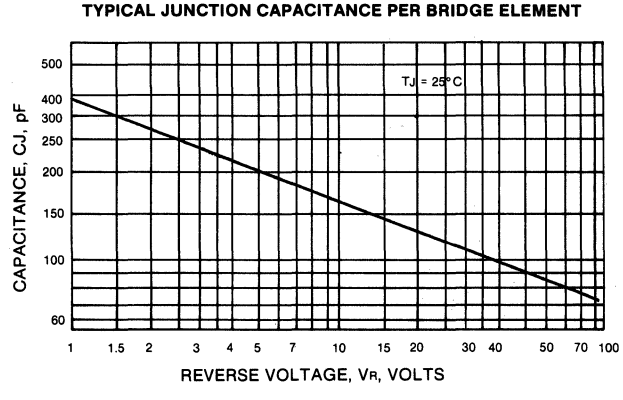


FIG. 8
KBPC

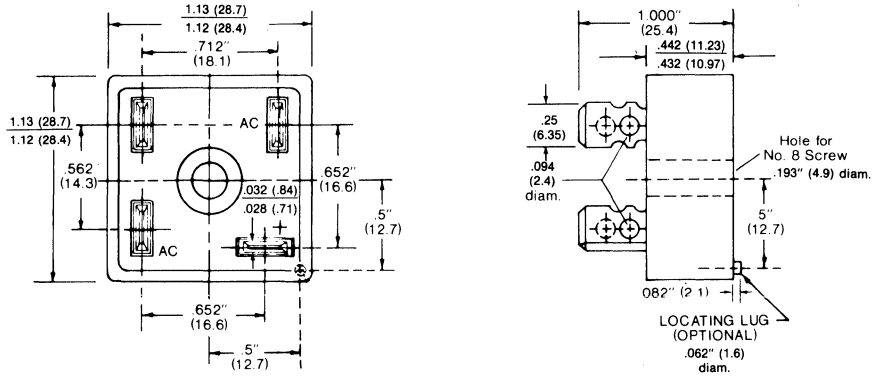


FIG. 9
KBPC-W

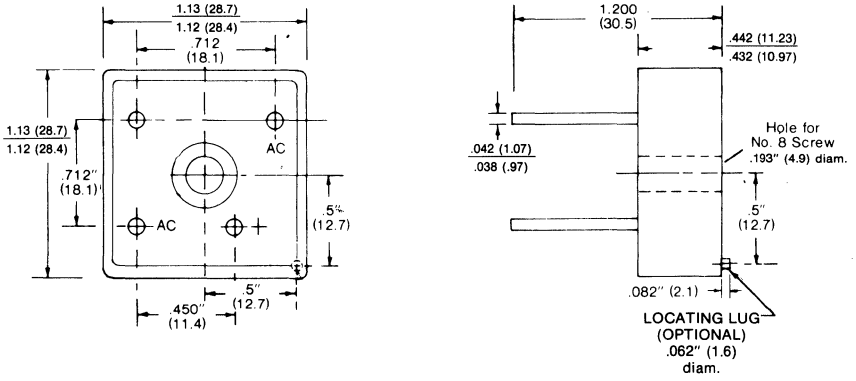
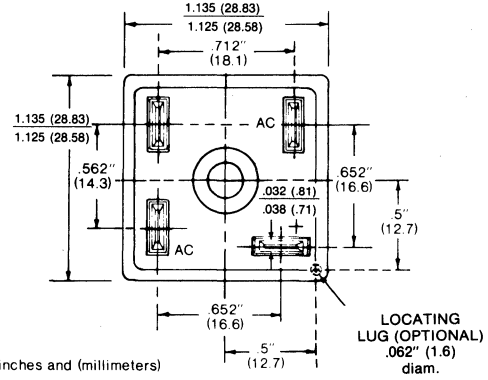
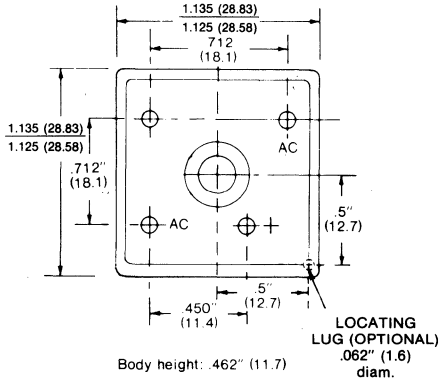


FIG. 10



Dimensions in inches and (millimeters)

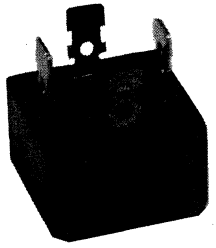
KBPC-D



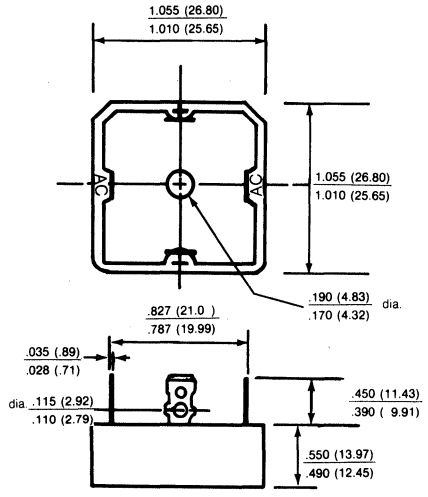
Body height: .462" (11.7)

KBPC-WD

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts PRV
CURRENT
25 Amperes



All dimensions in inches and (millimeters)

FEATURES

- Plastic case with an electrically isolated aluminum heatsink
- Electrically isolated base - 1800 volts
- 400 ampere surge capability
- Low forward voltage drop
- Solderable .25" FASTON terminals
- Polarity embossed on case
- Weight: 0.9 ounce, 25 grams
- Mounting Torgue: 20 in. lb. max.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz.
For capacitive load, derate current by 20%.

	GIB2500	GIB2501	GIB2502	GIB2504	GIB2506	GIB2508	GIB2510	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	
Maximum RMS Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Output Current at T_C = 55°C	25							A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	400							A
Maximum Forward Voltage per bridge element at 40A	1.05							V
Maximum DC Reverse Current at Rated DC Blocking Voltage per Bridge Element	10							μA
Thermal Resistance, $R\Theta JA$ per Diode (Note 1) per Total Bridge	10 2.8							°C/W
Operating and Storage Temperature Range, T_J	-65 to +175							°C

NOTES:
1. Thermal Resistance Junction to Case

RATING AND CHARACTERISTIC CURVES
GIB2500 SERIES

Fig. 1—FORWARD OUTPUT CURRENT DERATING CURVE

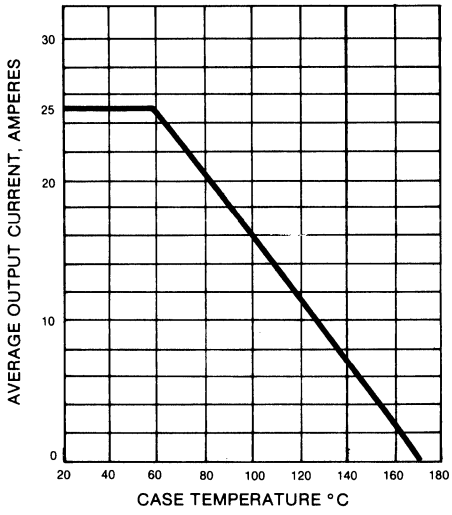


Fig. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

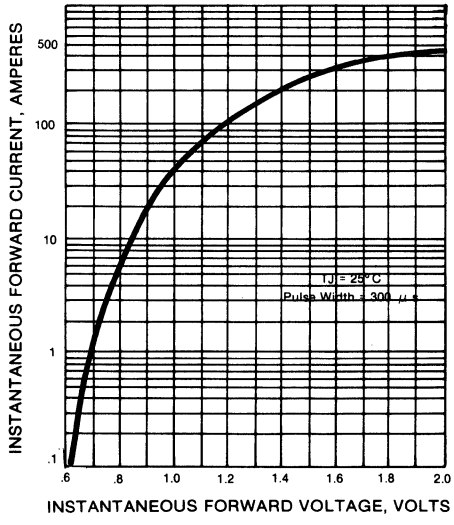


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

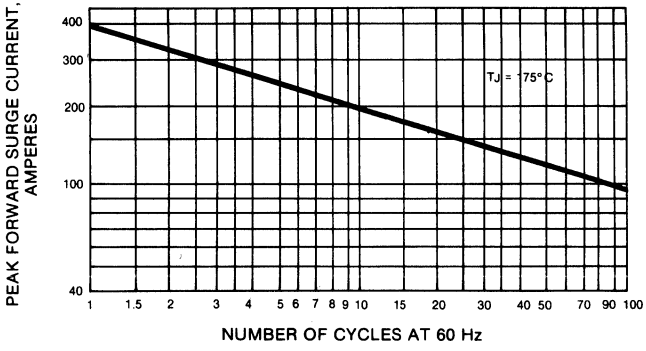


Fig. 4—TYPICAL REVERSE CHARACTERISTICS

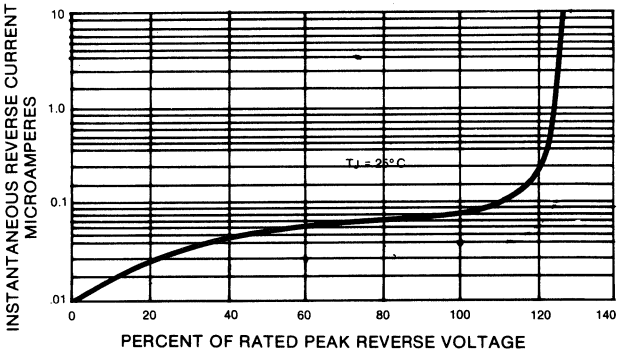
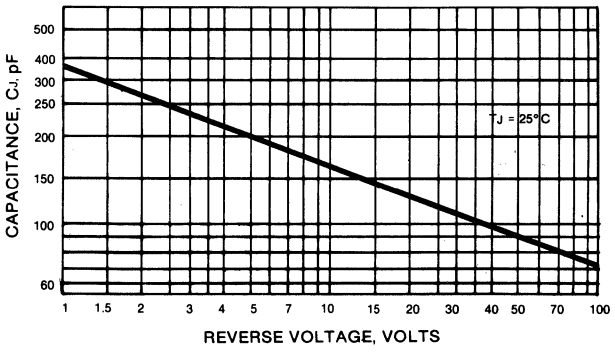


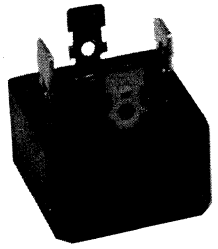
Fig. 5—TYPICAL JUNCTION CAPACITANCE



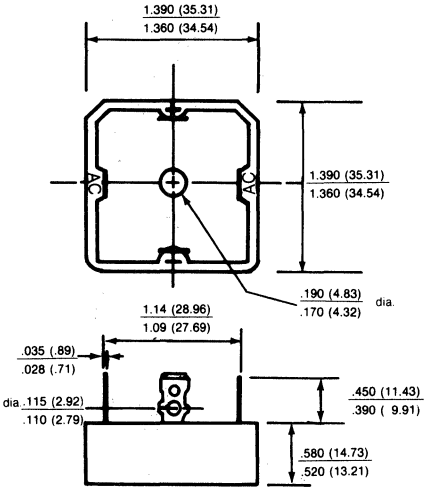
GIB3500 SERIES

HIGH CURRENT SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts PRV
CURRENT
35 Amperes



All dimensions in inches and (millimeters)

FEATURES

- Plastic case with an electrically isolated aluminum heatsink
- Electrically isolated base - 1800 volts
- 400 ampere surge capability
- Low forward voltage drop
- Solderable .25" FASTON terminals
- Polarity embossed on case
- Weight: 1.32 ounce, 37 grams
- Mounting Torque: 20 in. lb. max.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz.
For capacitive load, derate current by 20%.

	GIB3500	GIB3501	GIB3502	GIB3504	GIB3506	GIB3508	GIB3510	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Output Current at Tc = 55°C	35							A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	400							A
Maximum Forward Voltage per bridge element at 55A	1.1							V
Maximum DC Reverse Current at Rated DC Blocking Voltage per bridge element	10							μA
Thermal Resistance, $R\theta JC$ (Note 1)	1.87							°C/W
Operating and Storage Temperature Range	-65 to +175							°C

NOTE:
1. Thermal Resistance, Junction to Case for Total Bridge.

RATING AND CHARACTERISTIC CURVES
GIB3500 SERIES

Fig. 1—FORWARD OUTPUT CURRENT DERATING CURVE

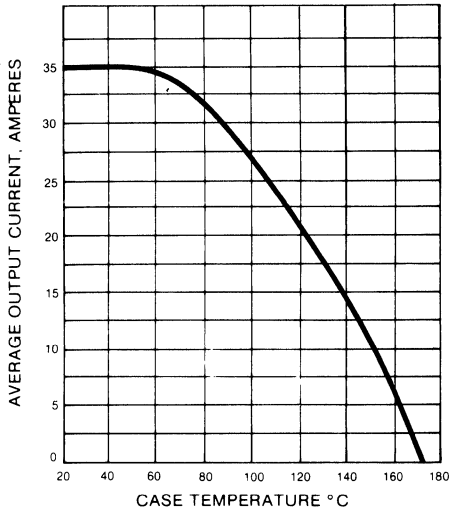


Fig. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

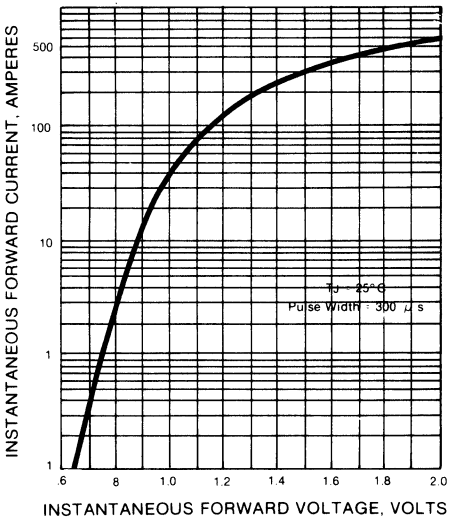


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

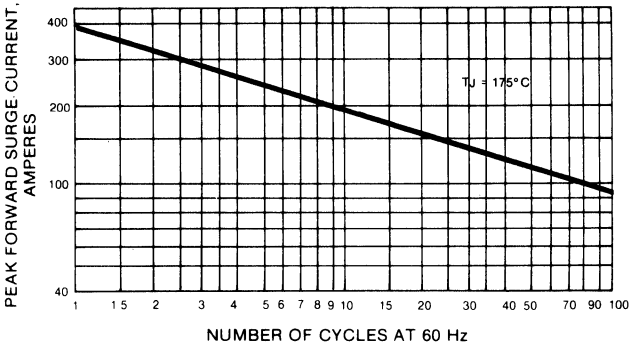


Fig. 4—TYPICAL REVERSE CHARACTERISTICS

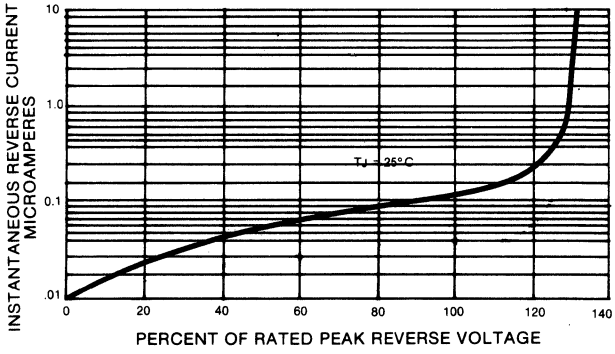
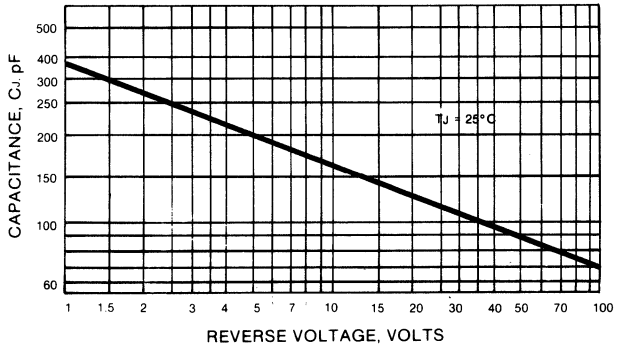


Fig. 5—TYPICAL JUNCTION CAPACITANCE



15IP, 15IN, 15ID SERIES

15 AMPERE SINGLE-PHASE CENTER TAP AND DOUBLER

GENERAL INSTRUMENT

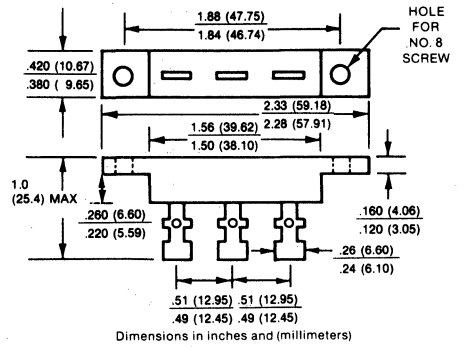
VOLTAGE RANGE
50 to 1000 Volts PRV
CURRENT
15 Amperes

FEATURES

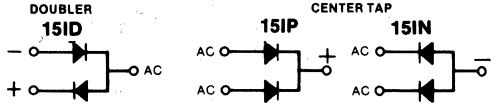
- Electrically isolated metal case for maximum heat dissipation
- Surge overload ratings to 300 amperes
- Low forward voltage drop
- All external surfaces corrosion resistant

MECHANICAL DATA

Terminals: Tinned plated .25", .030 Dia. Faston
Case: Metal, electrically isolated
Mounting Position: Any
Weight: 1 ounce, 30 grams



Dimensions in inches and (millimeters)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, halfwave 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	15IP-005	15IP-02	15IP-04	15IP-06	15IP-08	15IP-10	UNITS
Maximum Recurrent Peak Reverse Voltage	50	200	400	600	800	1000	V
Maximum RMS Voltage	35	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at Tc = 55°C	15						A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300						A
Maximum Forward Voltage per Element at 7.5A 3.0A	1.2 1.0						V V
Maximum Reverse Current at rated DC Blocking Voltage per element	10						μA
Typical Junction Capacitance (Note 1)	230						pF
Typical Reverse Recovery Time (Note 2)	2						μs
Operating Temperature Range T_J Storage Temperature Range T_{STG}	-65 to +150						°C

NOTES:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC.
2. Measured with IF = .5A, IR = 1A, Irr = .25A.
3. When ordering please specify complete part number as follows: Basic portion 15IP (positive), 15IN (negative), 15ID (doubler) Followed by voltage; e.g. 15IP005 (50 volt positive center-tap), 15ID-06 (600 volt doubler).

RATING AND CHARACTERISTIC CURVES
15IP, 15IN, 15ID SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

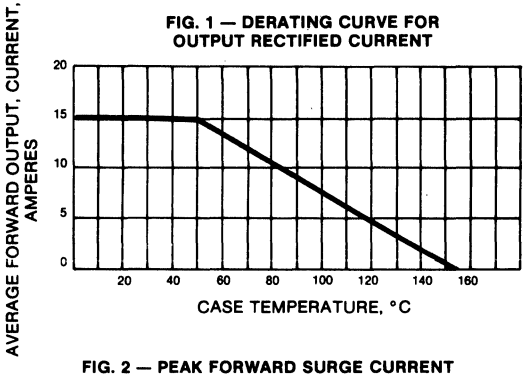


FIG. 2 — PEAK FORWARD SURGE CURRENT

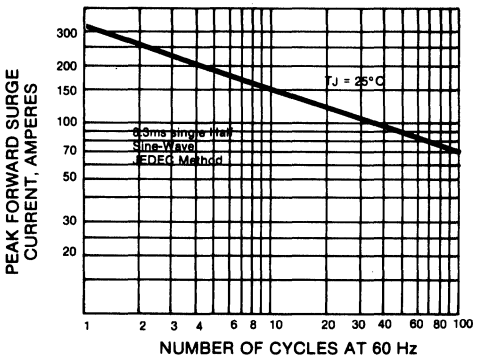


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

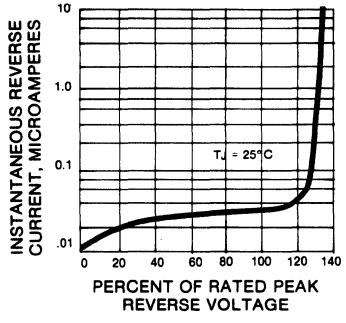


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

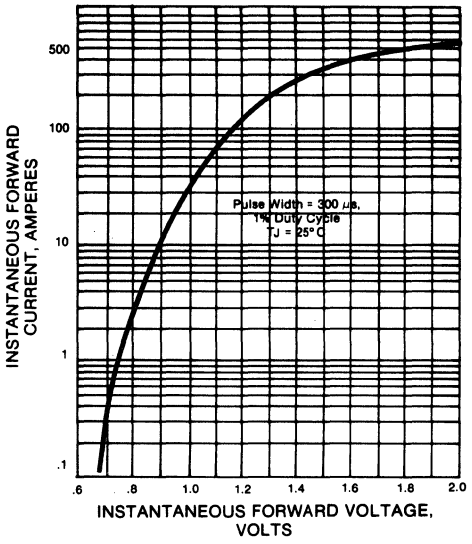
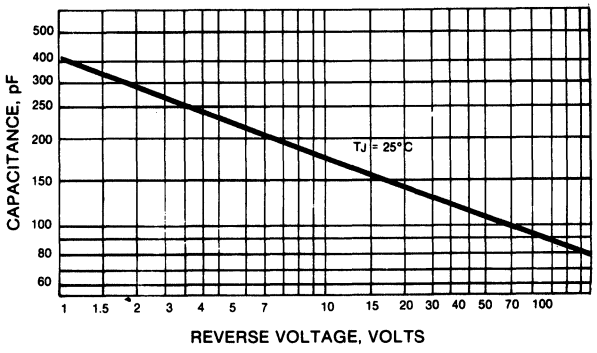


FIG. 5 — TYPICAL JUNCTION CAPACITANCE



FAST RECOVERY BRIDGE RECTIFIERS 1.0 AMPERE TO 35 AMPERES 50 VOLTS TO 1000 VOLTS

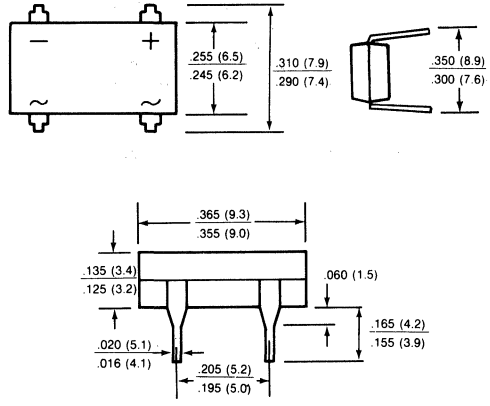
RDF-M SERIES

MINIATURE FAST RECOVERY GLASS PASSIVATED SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 800 Volts

CURRENT
1.0 Ampere



Dimensions in inches and (millimeters)

FEATURES

- Fast switching for high efficency
- Plastic material used carries Underwriters Laboratory recognition
- Glass passivated junctions
- Surge overload rating — 50 amperes peak
- Ideal for printed circuit board
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 300° C/10 seconds at 5 lbs. (2.2kg) tension

MECHANICAL DATA

Case: Reliable low cost construction utilizing molded plastic technique results in inexpensive product
Terminals: Lead solderable per MIL-STD-202, Method 208
Polarity: Polarity symbols molded on body
Mounting Position: Any
Weight: 0.04 ounce, 1.0 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RDF005M	RDF01M	RDF02M	RDF04M	RDF06M	RDF08M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	V
Maximum Average Forward Rectified Output Current T_A = 40° C	1.0						A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	50.0						A
I^2t Rating for fusing (t<8.35ms)	5.0						A^2t
Maximum Forward Voltage Drop per Bridge Element at 1.0A	1.3						V
Maximum Reverse Current at rated DC Blocking Voltage per element T_A = 25° C T_A = 100° C	10.0 1.0						μA mA
Maximum Reverse Recovery Time (Note 1)	200				350		ns
Operating Temperature Range, T_J	-55 to +150						°C
Storage Temperature Range, T_{STG}	-55 to +150						°C

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
RDF-M SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

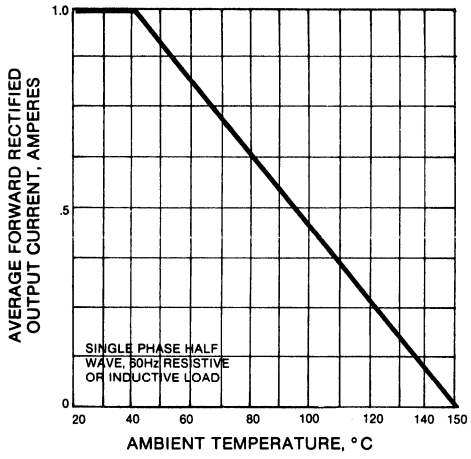


FIG. 2 — TYPICAL FORWARD CHARACTERISTICS

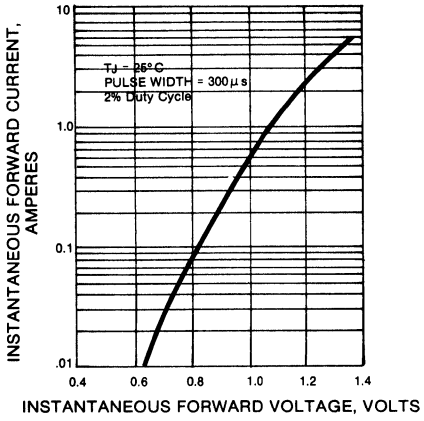


FIG. 3 — MAXIMUM FORWARD SURGE CURRENT

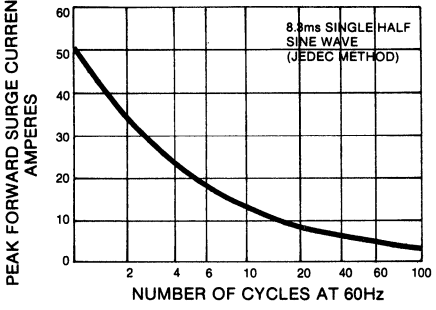


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

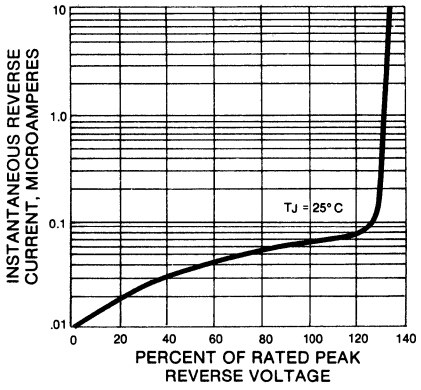
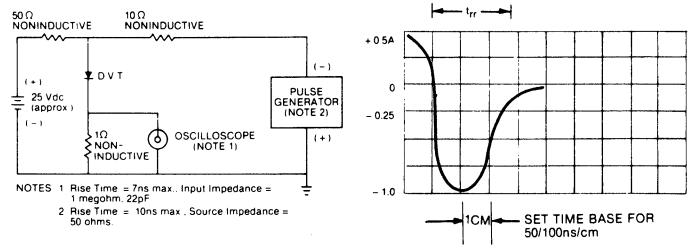


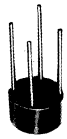
FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



RW005M THRU RW10M SERIES

1.5 AMPERE FAST-RECOVERY MINIATURE SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT

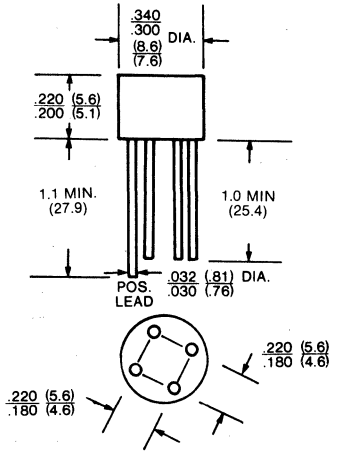


VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.5 Amperes

FEATURES

- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- High case dielectric strength
- Typical I_R less than 1 μA
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- Ideal for printed circuit board
- High temperature soldering guaranteed: 250°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Reliable low cost construction utilizing molded plastic technique
Terminals: Leads solderable per MIL-STD-202, Method 208
Mounting Position: Any
Weight: 0.05 ounce, 1.3 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RW005M	RW01M	RW02M	RW04M	RW06M	RW08M	RW10M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Output Current .375", 9.5mm lead lengths at T_A = 25°C	1.5							A
Maximum Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	50							A
I^2t Rating for fusing (t < .00835)	5.0							A^2t
Maximum Instantaneous Forward Voltage Drop per element at 1.0A	1.3							V
Maximum Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 100°C	10.0 1.0							μA mA
Maximum Reverse Recovery Time (Note 1)	200			350		350	500	ns
Typical Thermal Resistance $R\Theta JA$ (Note 2)	50							°C/W
Operating Temperature Range T_A	-55 to +125							°C
Storage Temperature Range T_{STG}	-55 to +150							°C

NOTES:
1. Reverse Recovery Test Conditions: I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A.
2. United mounted on P.C. board with .375", 9.5mm lead lengths.

RATING AND CHARACTERISTIC CURVES
RW005M THRU RW10M SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

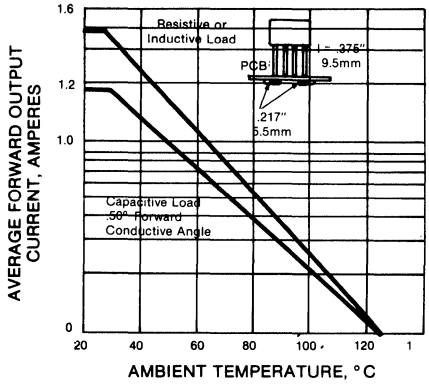


FIG. 2 — MAXIMUN NON-REPETITIVE FORWARD SURGE CURRENT

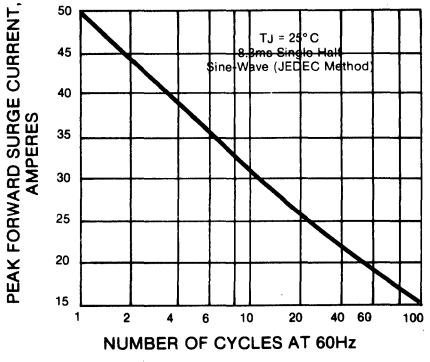


FIG. 3 — TYPICAL FORWARD CHARACTERISTICS

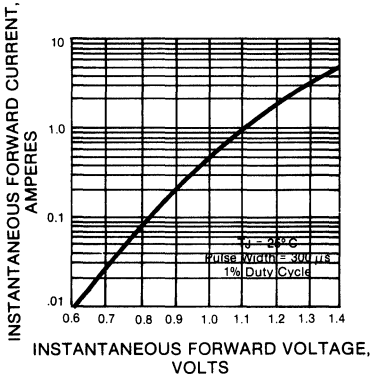


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS (25°C)

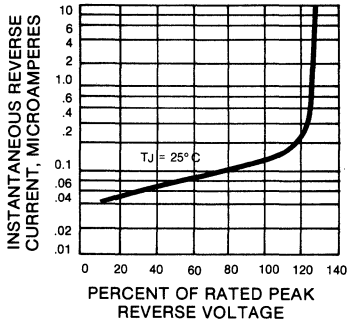
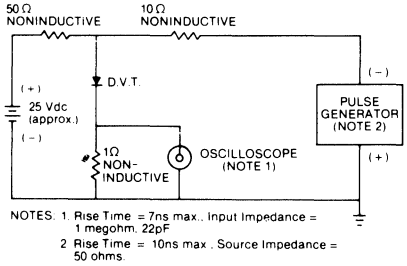
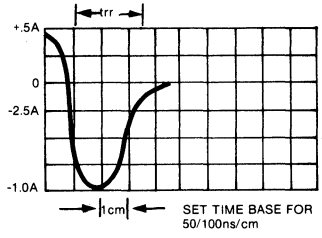


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM





RKBP SERIES

1.5 AMPERE FAST-RECOVERY MINIATURE SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

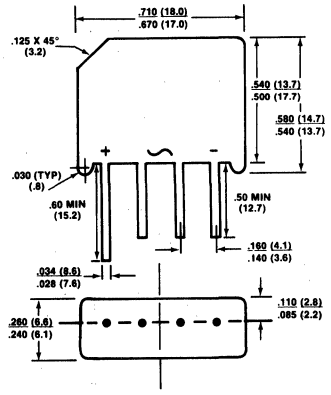
CURRENT
1.5 Amperes

FEATURES

- Plastic material used carries Underwriters Laboratory recognition.
- Fast switching for high efficiency.
- Ideal for printed circuit board.
- Typical I_R less than 1 μA.
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed: 300°C/ 10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL

Case: Reliable low cost construction utilizing molded plastic technique.
Terminals: Leads solderable per MIL-STD-202, Method 208
Mounting position: Any
Weight: 0.13 ounce, 3.6 grams



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz.
For capacitive load, derate current by 20%.

	RKBP005	RKBP01	RKBP02	RKBP04	RKBP06	RKBP08	RKBP10	Units
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Output Current at T_A = 50°C	1.5							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load	50.0							A
Maximum Instantaneous Forward Voltage Drop per element at 1.0A	1.3							V
Maximum Reverse Current at Rated DC Blocking Voltage per element	10.0							μA
Maximum Reverse Current at Rated DC Blocking Voltage (Total Bridge) T_A = 100°C	1.0							mA
Maximum Reverse Recovery Time (Note 1)	200				350	350	500	ns
Operating Temperature Range T_A	-55 to +125							°C
Storage Temperature Range T_{STG}	-55 to +150							°C

NOTE 1 — Reverse Recovery Test Conditions: IF = .5A, IR = 1A, irr = .25A

RATING AND CHARACTERISTIC CURVES
RKBP SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

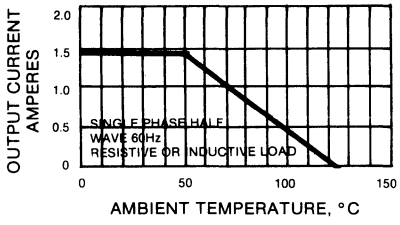


FIG 2 - TYPICAL FORWARD CHARACTERISTICS PER BRIDGE ELEMENT

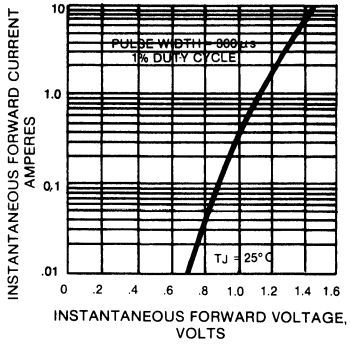


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS PER BRIDGE ELEMENT

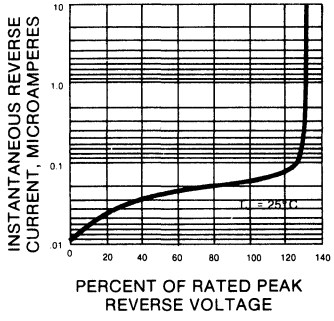


FIG. 4 — MAXIMUM NON-REPETITIVE SURGE CURRENT

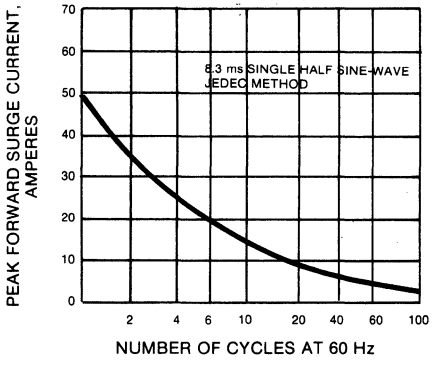
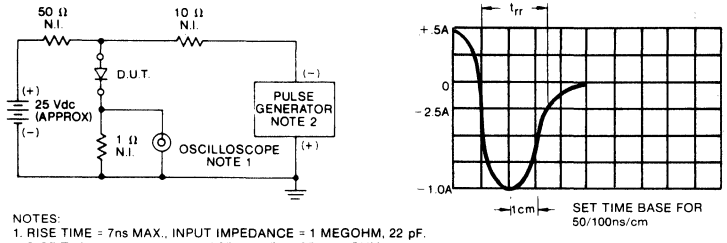


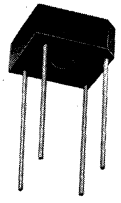
FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



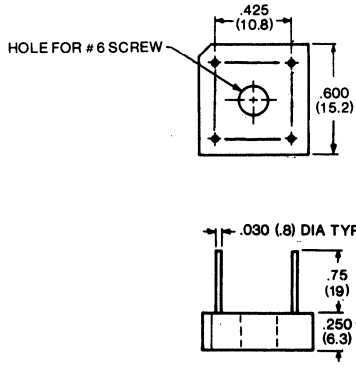
NOTES:
1. RISE TIME = 7ns MAX., INPUT IMPEDANCE = 1 MEGOHM, 22 pF.
2. RISE TIME = 10ns MAX., SOURCE IMPEDANCE = 50 OHM.

RKBPC1 SERIES

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts PRV
CURRENT
2 and 3 Amperes



Polarity shown on side of case; positive lead by beveled corner.
Dimensions in inches and (millimeters)

FEATURES

- Glass passivated junctions
- Surge overload rating—50 amperes peak
- Fast switching
- Low forward voltage drop
- Small size; simple installation
- Tinned copper leads
- Mounting position: Any
- Weight: 0.2 ounce, 5.5 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz.
For capacitive load, derate current by 20%.

	RKBPC1005	RKBPC102	RKBPC104	RKBPC106	RKBPC108	RKBPC110	UNITS
Maximum Recurrent Peak Reverse Voltage	50	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	140	280	420	560	700	V
Maximum Average Forward Rectified Output Current at: T_C = 50°C*	3.0						A
T_C = 100°C*	2.0						A
T_A = 50°C**	2.0						A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load	50.0						A
Maximum Forward Voltage per element at 1.0 A	1.3						V
Maximum Reverse Current at Rated DC Blocking Voltage per element T_A = 25°C	10.0						μA
T_A = 100°C	1.0						mA
Maximum Reverse Recovery Time ***	200	200	200	350	350	500	ns
Operating Temperature Range T_C	−55 to 125						°C
Storage Temperature Range T_A	−55 to 150						°C

Notes: *Unit mounted on metal chassis
**Unit mounted on P.C. board
***Measured with I_F = .5A, I_R = 1A, I_{rr} = .25A

RATING AND CHARACTERISTIC CURVES
RKBPC1 SERIES

FIG. 1. DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

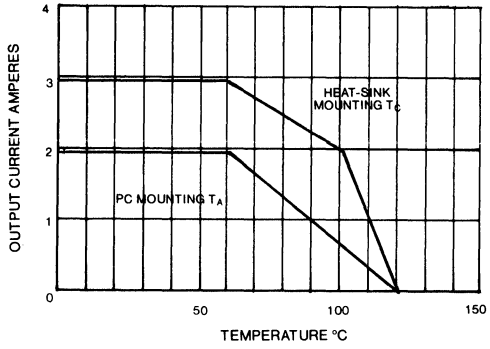


FIG. 2. TYPICAL REVERSE CHARACTERISTICS (25°C T_A)

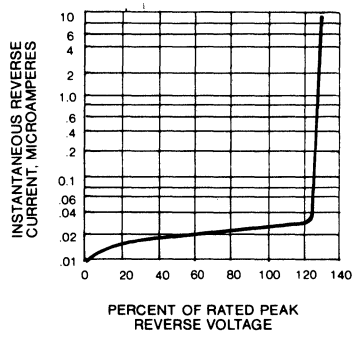


FIG. 3. FORWARD CHARACTERISTICS

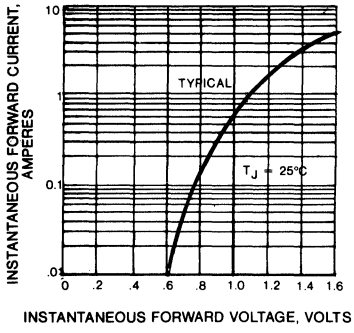


FIG. 4. MAXIMUM FORWARD SURGE CURRENT

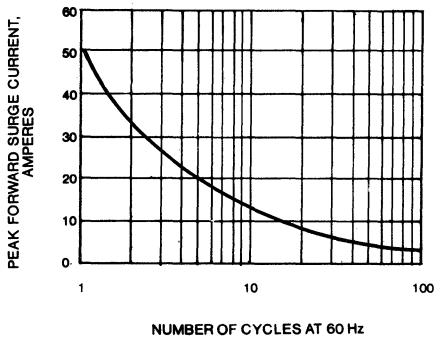
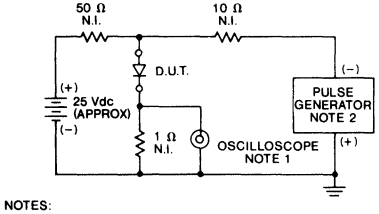
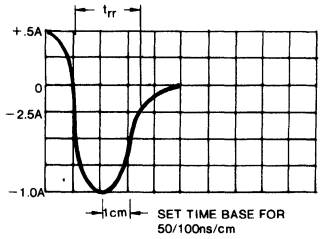


FIG. 5. REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



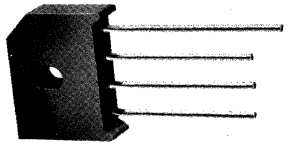
NOTES:
1. RISE TIME = 7ns MAX, INPUT IMPEDANCE = 1 MEGOHM, 22pF.
2. RISE TIME = 10ns MAX, SOURCE IMPEDANCE = 50 OHM.



RKBU4 SERIES

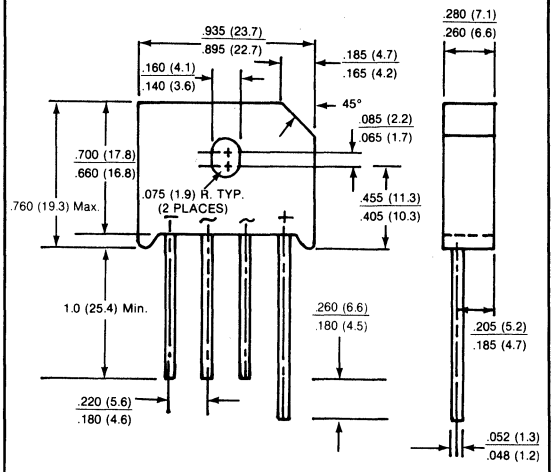
SILICON SINGLE-PHASE BRIDGE RECTIFIER

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 1000 Volts

CURRENT
4.0 Amperes



All dimension in inches and (millimeters)

FEATURES

- Plastic material used carries Underwriters Laboratory recognition 94V-0
- Built-In Printed Circuit Board Stand-Offs
- High case dielectric strength
- Typical I_R less than 1μ A
- Fast switching for high efficiency
- Exceeds enviornmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 250°C/10 seconds/.375" (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Reliable low cost construction utilizing molded plastic technique
Terminals: Leads solderable per MIL-STD-202, Method 208
Mounting Position: Any
Mounting Torgue: 5 In. Lb. max
Weight: 0.3 ounces, 8.0 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RKBU4A	RKBU4B	RKBU4D	RKBU4G	RKBU4J	RKBU4K	RKBU4M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Input Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at T_C = 100°C				4.0				A
Maximum Average Forward Rectified Current at T_A = 50°C				4.0				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)				200				A
Maximum Instantaneous Forward Voltage Drop per element at 4.0A				1.3				V
Maximum Reverse Leakage at rated DC Blocking Voltage per element T_A = 25°C				10				μA
Maximum Reverse Leakage at rated DC Blocking Voltage per element T_A = 100°C				1.0				mA
Maximum Reverse Recovery Time (Note 2)			200		350		500	ns
Thermal Resistance ~~R~~θJC (Note 1)				14.0				°C/W
Operating and Storage Temperature Range T_J, T_{STG}				-65 to +150				°C

NOTES:
1. Thermal Resistance from Junction to Case per diode.
2. Reverse Recovery Test Conditions: IF = 0.5A, IR = 1.0A, Irr = .25A.

RATING AND CHARACTERISTIC CURVES
RKBU4 SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

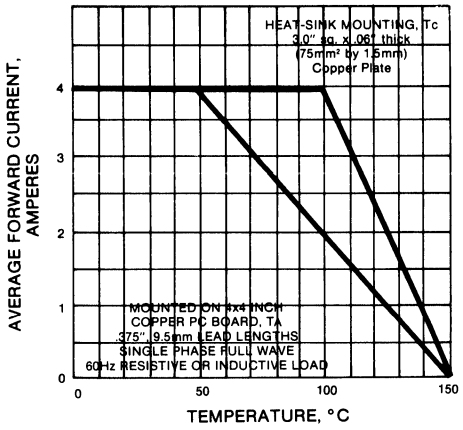


FIG. 2 — MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

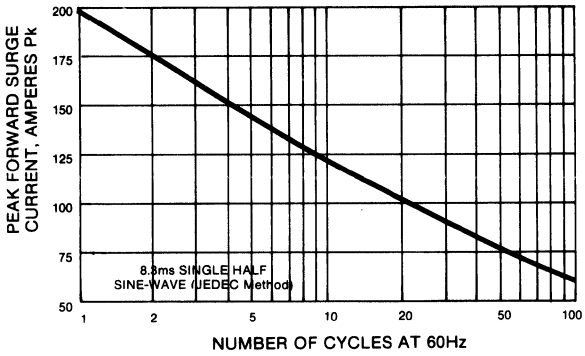


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

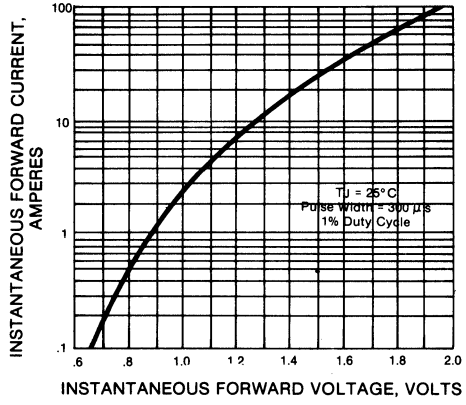
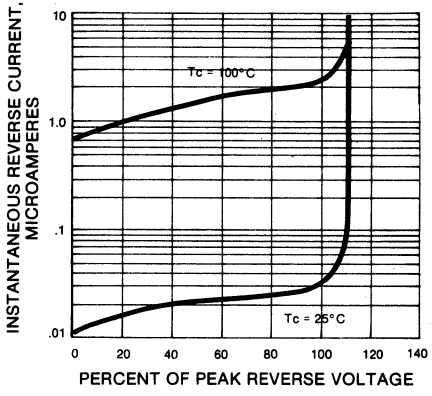


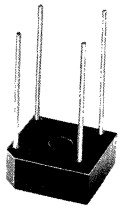
FIG. 4 — TYPICAL REVERSE CHARACTERISTICS



RKBPC6 SERIES

6 AMPERE FAST-RECOVERY SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT

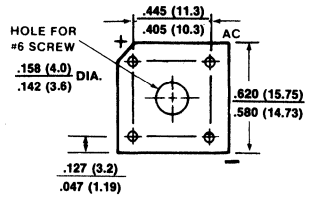


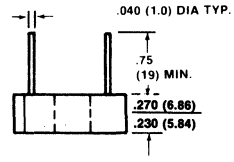
VOLTAGE RANGE
50 to 1000 Volts PRV

CURRENT
6 and 8 Amperes

FEATURES

- Plastic material used carries Underwriters Laboratory Flammability classification 94V-0
- High case dielectric strength
- Typical I_R less than 1 μ A
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- Ideal for printed circuit board
- High temperature soldering guaranteed: 250° C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension





Polarity shown on side of case: positive lead by beveled corner.

Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Reliable low cost construction utilizing molded plastic technique
Terminals: Leads solderable per MIL-STD-202, Method 208
Mounting Position: Any
Weight: 0.13 ounce, 3.8 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RKBPC 6005	RKBPC 601	RKBPC 602	RKBPC 604	RKBPC 606	RKBPC 608	RKBPC 610	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum Average Forward Rectified Output Current at T_C = 50° C (Note 1)				6.0				A
T_A = 50° C (Note 2)				3.0				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load				125				A
Maximum Instantaneous Forward Voltage Drop per element at 3.0 ADC				1.3				V
Maximum Reverse Current at Rated DC Blocking Voltage per element T_A = 25° C				10.0				μA
T_A = 100° C				1.0				mA
Maximum Reverse Recovery Time (Note 3)		200			350		500	ns
Operating Temperature Range T_C				-55 to +125				°C
Storage Temperature Range T_{STG}				-55 to +150				°C

NOTES:
1. Unit mounted on 4x.06" thick (100mm²x1.5mm) copper plate.
2. Unit mounted on P.C. board with .375", 9.5mm lead lengths.
3. Measured with I_F = .5A, I_R = 1A, I_{rr} = .25A.

RATING AND CHARACTERISTIC CURVES
RKBPC6 SERIES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

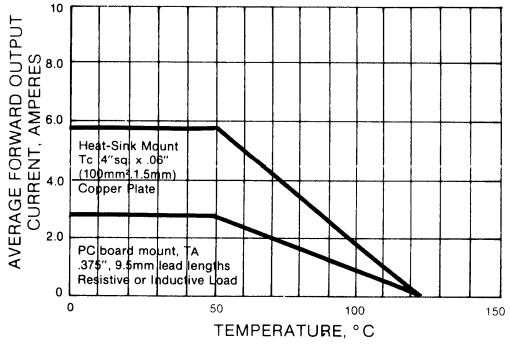


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

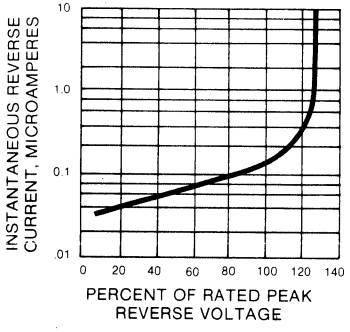


FIG. 3 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

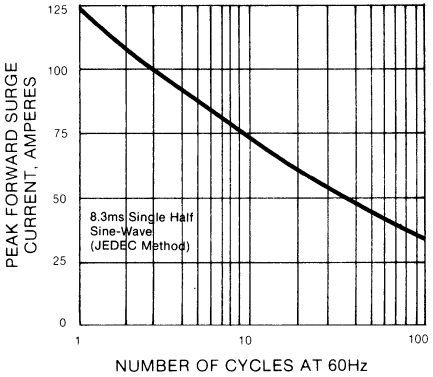


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

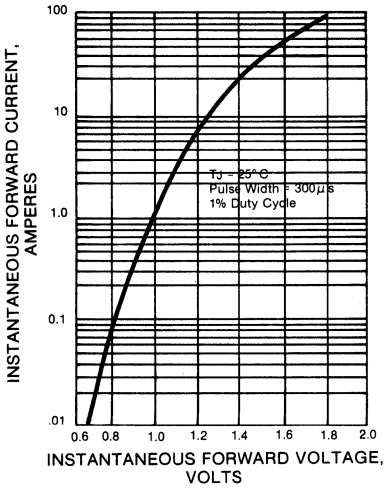
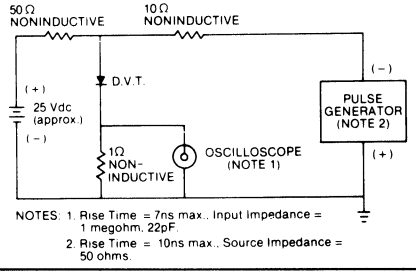
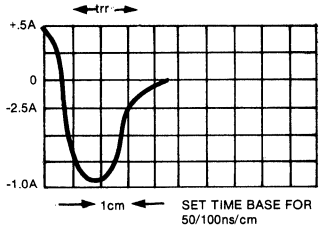


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

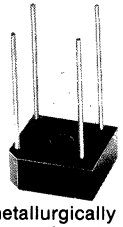




RKBPC8 SERIES

8 AMPERE FAST-RECOVERY SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT

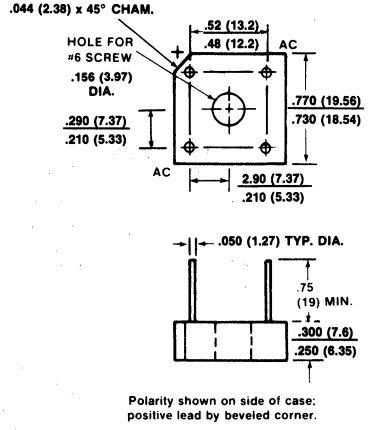


VOLTAGE RANGE
50 to 1000 Volts

CURRENT
8.0 Amperes

FEATURES

- High temperature metallurgically bonded—no compression contacts as found in diode-constructed internal rectifiers
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- Fast switching-for high efficiency
- Typical I_R less than 1μ A
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 250° C/10 seconds/.375", (9.5mm) lead length at 5 lbs., (2.3kg) tension



Polarity shown on side of case: positive lead by beveled corner.

MECHANICAL DATA

Case: Void-free plastic package
Terminals: Axial leads, solderable per MIL-STD-202 Method 208
Mounting: Thru hole for #6 screw
Mounting position: Any
Weight: 0.24 ounce, 6.9 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RKBPC 8005	RKBPC 801	RKBPC 802	RKBPC 804	RKBPC 806	RKBPC 808	RKBPC 810	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
Maximum Average Forward Rectified Output Current Tc = 50° C (Note 1)				8.0				A
TA = 50° C (Note 2)				3.0				A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load				100				A
Maximum Instantaneous Forward Voltage Drop per element at 3.0A				1.3				V
Maximum Reverse Current at Rated DC Blocking Voltage per element TA = 25° C				10.0				μA
Tc = 100° C				1.0				mA
Maximum Reverse Recovery Time (Note 3)			200		350		500	ns
Maximum Thermal Resistance RΘJC (Note 1)				10				°C/W
Operating Temperature Range Tc				-55 to +150				°C
Storage Temperature Range TSTG				-55 to +150				°C

NOTES:
1. Unit mounted on 6.0" sq. x .06" thick (150mm² x 1.5mm) copper plate.
2. Unit mounted on P.C. board at .375", 9.5mm lead lengths
3. Reverse Recovery Test Conditions: IF = 0.5A, IR = 1.0A, Irr = 0.25A.

RATING AND CHARACTERISTIC CURVES
RKBPC8 SERIES

FIG. 1 — DERATING CURVE FOR AVERAGE OUTPUT RECTIFIED CURRENT

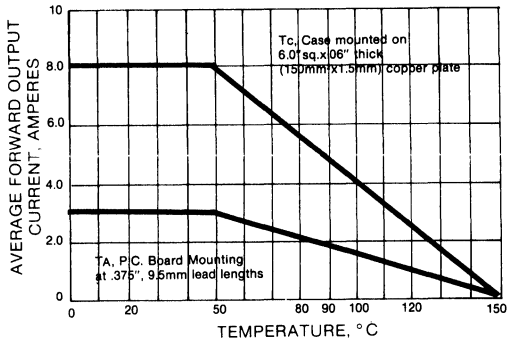


FIG. 2 — TYPICAL REVERSE CHARACTERISTICS

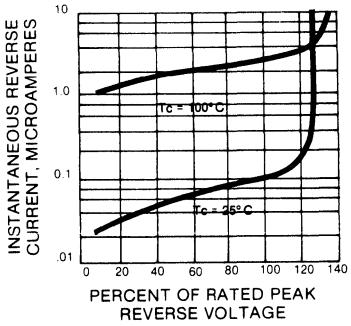


FIG. 3 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

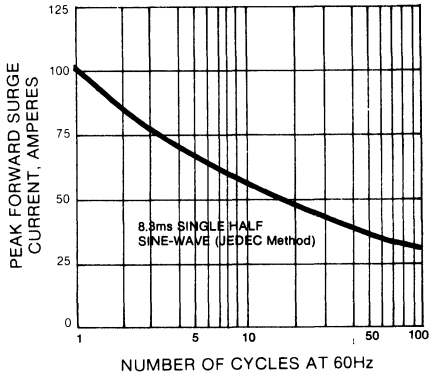


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER ELEMENT

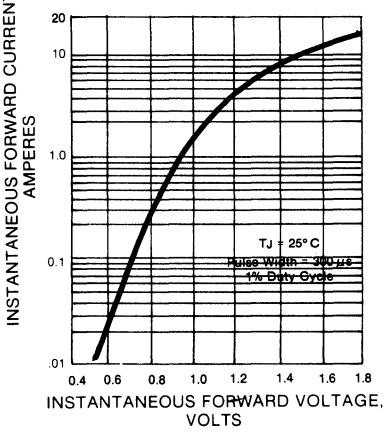
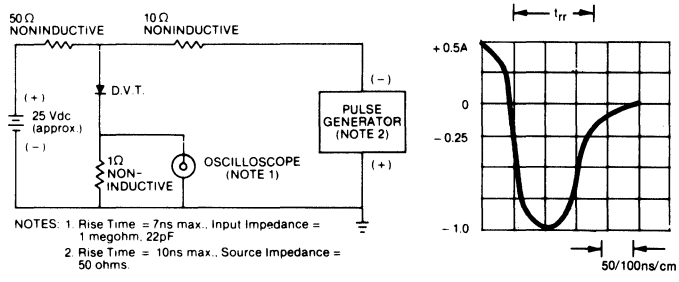


FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

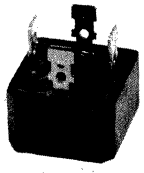


NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

RGIB3500 SERIES

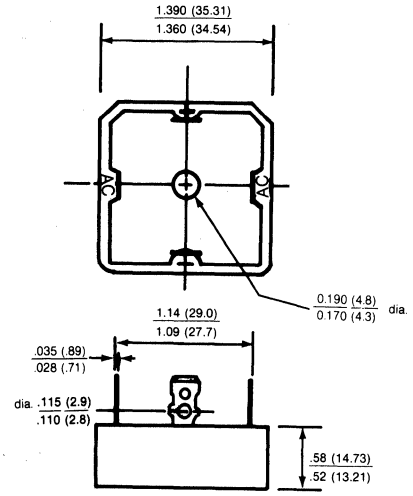
HIGH CURRENT FAST RECOVERY SINGLE-PHASE SILICON BRIDGE

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 600 Volts

CURRENT
35 Amperes



All dimensions in inches and (millimeters)

FEATURES

- Plastic case with an electrically isolated aluminum heatsink
- Electrically isolated base-1800 volts
- 400 ampere surge capability
- Fast recovery for high efficiency
- Solderable .25" FASTON terminals
- Polarity embossed on case
- Weight: 1.32 ounce, 37 grams
- Mounting Torque: 20 in. lb. max.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified; resistive or inductive load at 60Hz.
For capacitive load, derate curent by 20%.

	RGIB3500	RGIB3501	RGIB3502	RGIB3504	RGIB3506	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	V
Maximum RMS Input Voltage	35	70	140	280	420	V
Maximum DC Blocking Voltage	50	100	200	400	600	V
Maximum Average Forward Output Current at Tc = 55°C	35					A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	300					A
Maximum Instantaneous Forward Voltage per Bridge Element at 55A	1.3					V
Maximum DC Reverse Current at Rated DC Blocking Voltage per bridge element Tc = 25°C Tc = 100°C	25 500					μA
Maximum Reverse Recovery Time (Note 2)	200				350	ns
Thermal Resistance, RθJC (Note 1)	1.87					°C/W
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +175					°C

NOTES:
1. Thermal Resistance, Junction to Case for Total Bridge.
2. Reverse Recovery Conditions: IF= 0.5A, IR = 1.0A, IRR = 0.25A

RATING AND CHARACTERISTIC CURVES
RGIB3500 SERIES

Fig. 1—FORWARD OUTPUT CURRENT DERATING CURVE

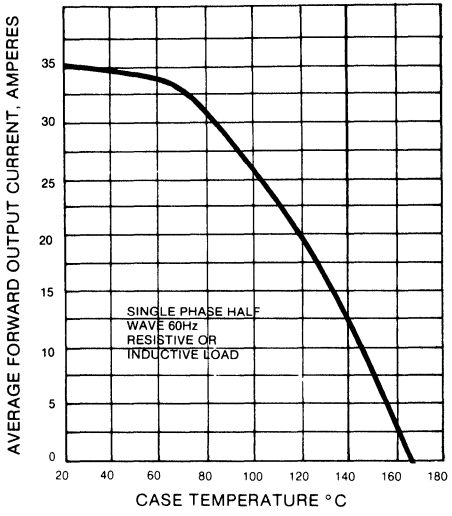


FIG. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

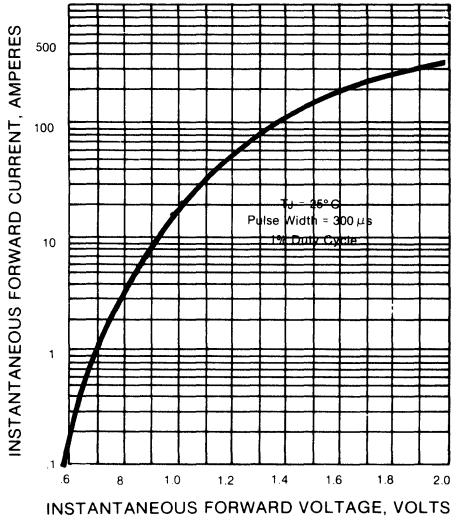


FIG. 3 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

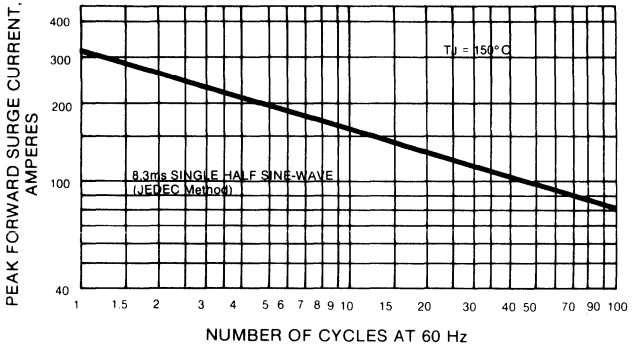


Fig. 4—TYPICAL REVERSE CHARACTERISTICS

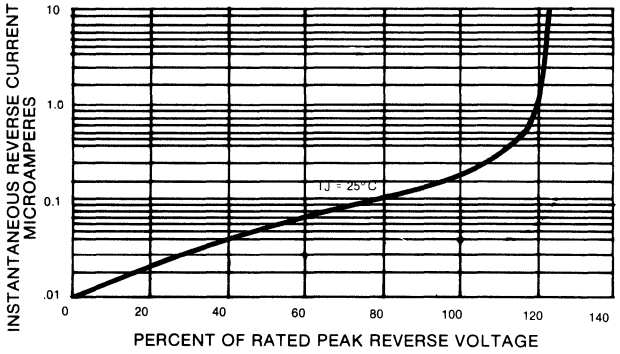
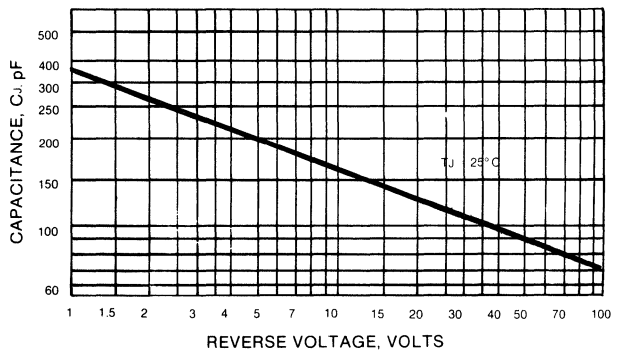
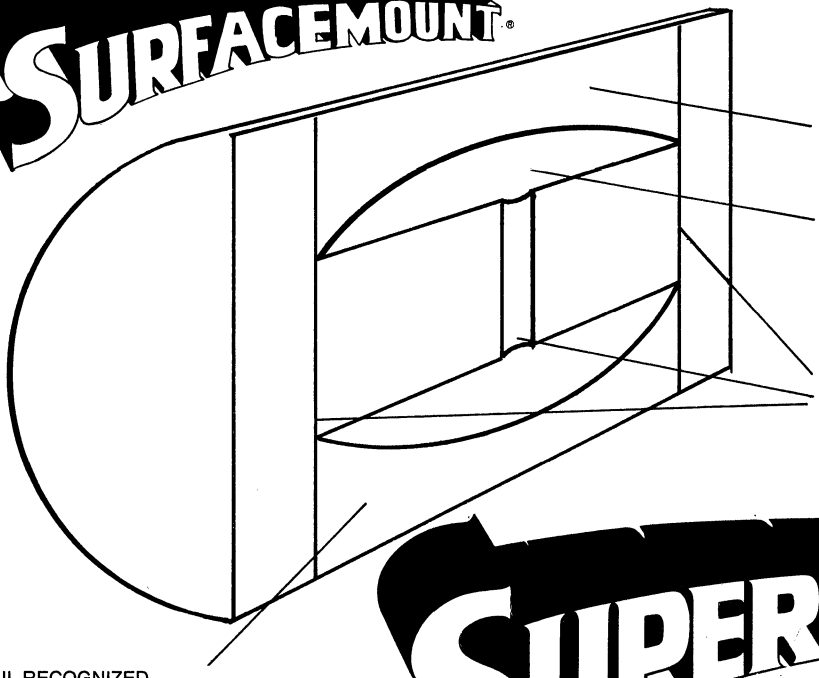


Fig. 5—TYPICAL JUNCTION CAPACITANCE



SURFACE MOUNTED SUPERECTIFIERS

SURFACEMOUNT®



SUPERECTIFIER®

UL RECOGNIZED
FLAME-RETARDANT
MOLDING COMPOUND (UL 94V-0)

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Our surface mount SUPERECTIFIER has redefined the concept of time and space. Passivated silicon SUPERECTIFIERs (IN6478-IN6484 and GL41A-GL41M) are 1 amp, 50-1000 PRV, leadless, surface mounted devices that provide new space options, from increased surface density at reduced board size. Component placement speeds can be an order of magnitude higher. Our surface mount SUPERECTIFIERs feature:

Brazing at greater than 600°C at both terminal and cell—eliminates all soft solders

Exclusive UL recognized flame-retardant epoxy molding compound rated 94V-0, the highest available Hermetically sealed construction

No other 1 to 3 Ampere rectifier of any kind—plastic, glass or metal—can match our surface mount SUPERECTIFIER features.

The way we make our surface mount SUPERECTIFIER is what makes them the best.

In cell construction, most other rectifiers rated up to 3 Amperes are soldered or are only pressure contacted. Our surface mounted SUPERECTIFIER is made into an entirely solid unit with leads and cell brazed at temperatures greater than 600°C. All other rectifiers fail at half that temperature!

Conventional plastic rectifiers use either varnish, silicone rubber or a thin film of silicon oxide to protect the junction. *Our surface mount SUPERECTIFIER uses a patented glass passivation to seal its junction hermetically.*

In device encapsulation, our surface mount SUPERECTIFIER uses a flame-RETARDANT molding compound, rated UL 94V-0, the highest rating available. *In fact, it is the only plastic rectifier that exceeds environmental standards of MIL-STD-19500.*

In summary, the General Instrument surface mount SUPERECTIFIER is the world's only rectifier with totally brazed construction, with a patented glass passivated junction, and with flame-retardant molding encapsulation.

Silicon Chips

General Instrument's Silicon Chips are available in a large variety of current and voltage types.

Chips with standard, fast, and ultrafast recovery times, as well as high efficiency Schottky rectifiers are available.

Each General Instrument chip is a glass passivated junction* which offers easily solderable metallization as well as high surge current capability, making them ideal for hybrid circuit applications.

Types:

GPP 1 and 5 amp, standard recovery times
RGPP 1 and 5 amp, fast recovery times
EFR 1, 3, 5, and 8 amp, ultrafast recovery times
SCH 1, 3, 5, and 10 amp Schottky

*Schottky chips are oxide passivated

	Standard Recovery		Fast Recovery		Ultrafast Recovery				Schottky			
TYPE	GPP1A thru GRP1M	GPP5A thru GPP5K	RGPP1A thru RGPP1K	RGPP5A thru RGPP5K	EFR1A thru ERF1D	EFR3A thru ERF3D	EFR5A thru ERF5D	EFR8A thru EFR8D	SCH120 thru SCH160	SCH320 thru SCH360	SCH520 thru SCH560	SCH1020 thru SCH1060
I_o (A)	1.0	5.0	1.0	5.0	1.0	3.0	5.0	8.0	1.0	3.0	5.0	10.0
@T_A (°C)	75	100	75	100	75	75	75	75	60	60	100	100
V_R = 20 (V)									SCH120	SCH320	SCH520	SCH1020
V_R = 30 (V)									SCH130	SCH330	SCH530	SCH1030
V_R = 40 (V)									SCH140	SCH340	SCH540	SCH1040
V_R = 50 (V)	GPP1A	GPP5A	RGPP1A	RGPP5A	EFR1A	EFR3A	EFR5A	EFR8A	SCh150	SCH350	SCH550	SCH1050
V_R = 60 (V)									SCH160	SCH360	SCH560	SCH1060
V_R = 100 (V)	GPP1B	GPP5B	RGPP1B	RGPP5B	EFR1B	EFR3B	EFR5B	EFR8B				
V_R = 150 (V)					ERF1C	EFR3C	EFR5C	EFR8C				
V_R = 200 (V)	GPP1D	GPP5D	RGPP1D	RGPP5D	EFR1D	EFR3D	EFR5D	EFR8D				
V_R = 400 (V)	GPP1G	GPP5G	RGPP1G	RGPP5G								
V_R = 600 (V)	GPP1J	GPP5J	RGPP1J	RGPP5J								
V_R = 800 (V)	GPP1K	GPP5K	RGPP1K	RGPP5K								
V_R = 1000 (V)	GPP1M											
SURGE (A)	60	150	30	150	50	75	125	300	100	200	250	300
V_F (V)	1.1	1.1	1.3	1.3	0.9	0.9	0.9	0.9	0.5/0.75	0.5/0.75	0.65	0.65
Page	400	400	402	402	404	404	404	404	406	406	406	406

Surface Mount Superectifiers

Features:
- High Temperature Metallurgically Bonded
- Plastic Package has Underwriters Laboratory Classification 94V-0
- Glass Passivated Junction
- Exceeds Environmental Standards of MIL-STD-19500
- High Temperature Soldering Guaranteed for all present methods, including wave and vapor reflow soldering

Types:

1N6478-1N6484	1 amp, Standard Recovery Times
GL41A-GL41M	1 amp, Standard Recovery Times
RGL41A-RGL41M	1 amp, Fast Recovery Times
EGL41A-EGL41G	1 amp, Ultrafast Recovery Times
GL27A-GL27M	3 amp, Standard Recovery Times
RGL27A-RGL27M	3 amp, Fast Recovery Times
EGL27A-EGL27G	3 amp, Ultrafast Recovery Times

Quick Guide To Surface Mount Superectifiers

TYPE	1N6478 thru 1N6484	GL41A thru GL41M	RGL41A* thru RGL41M*	GL27A thru GL27M	RGL27A* thru RGL27M*	EGL41+ thru EGL41G+	EGL27A+ thru EGL27G+
CASE	GL41	GL41	GL41	GL27	GL27	GL41	GL27
I_o (A)	1.0	1.0	3.0	3.0	3.0	1.0	3.0
@T_A (°C)	75	75	55	55	55	75	55
V_R = 50 (V)	1N6478	GL41A	RGL41A	GL27A	RGL27A	EGL41A	EGL27A
V_R = 100 (V)	1N6479	GL41B	RGL41B	GL27B	RGL27B	EGL41B	EGL27B
V_R = 150 (V)						EGL41C	EGL27C
V_R = 200 (V)	1N6480	GL41D	RGL41D	GL27D	RGL27D	EGL41D	EGL27D
V_R = 300 (V)						EGL41F	EGL27F
V_R = 400 (V)	1N6481	GL41G	RGL41G	GL27G	RGL27G	EGL41G	EGL27G
V_R = 600 (V)	1N6482	GL41J	RGL41J	GL27J	RGL27J		
V_R = 800 (V)	1N6483	GL41K	RGL41K	GL27K	RGL27K		
V_R = 1000 (V)	1N6484	GL41M	RGL41M	GL27M	RGL27M		
SURGE (A)	30	30	30	125	125	30	150
V_F (V)	1.0	1.1	1.3	1.1	1.3	1.0/1.25	1.0/1.25
Page	386	388	390	392	394	396	398

*Fast Recovery

+ Ultrafast Recovery

1N6478 THRU 1N6484

SURFACE MOUNT GLASS PASSIVATED SILICON RECTIFIER

SUPERECTIFIER

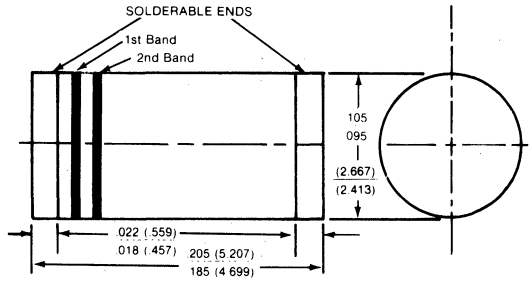
GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

- For Surface Mounted Applications
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed 450°C/5 seconds at terminals. Complete device submersible temperature of 265°C for 10 seconds in solder bath



All dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Solderable per MIL-STD-202, method 208
Polarity: Two bands indicate cathode
1st band denotes device type
2nd band denotes voltage type
Mounting Position: Any
Handling precautions: None
Weight: 0.013 gram, 0.0046 ounce

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Standard recovery time device: 1st band is white	1N6478	1N6479	1N6480	1N6481	1N6482	1N6483	1N6484	Units
* Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
* Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
* Maximum Average Forward Rectified Current T_A = 75°C	1.0							A
* Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30							A
* Maximum Instantaneous Forward Voltage at 1.0A T_A = 75°C T_A = 25°C	1.0 1.1							V V
*Maximum Full Load Reverse Current, Full cycle Average at 75°C Ambient	30							μA
* Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C T_A = 175°C	10 200							μA
Typical Junction Capacitance (Note 1)	15							pF
* Maximum Thermal Resistance R_{thJL} (Note 2) R_{thJA} (Note 3)	20 50							°C/W
* Operating and Storage Temperature Range, T_J, T_{STG}	-65 to +175							°C
Polarity Color Bands (2nd Band)	Gray	Red	Orange	Yellow	Green	Blue	Violet	

NOTES:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC.
2. Thermal resistance junction to terminal, 6.0mm² copper pads to each terminal.
3. Thermal resistance junction to ambient, 6.0mm² copper pads to each terminal.
* JEDEC Registered Value

RATING AND CHARACTERISTIC CURVES
1N6478 THRU 1N6484

FIG. 1 — FORWARD CURRENT DERATING CURVE

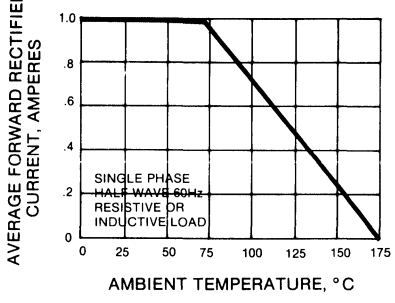


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

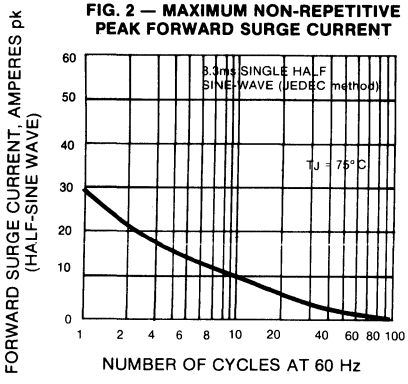


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

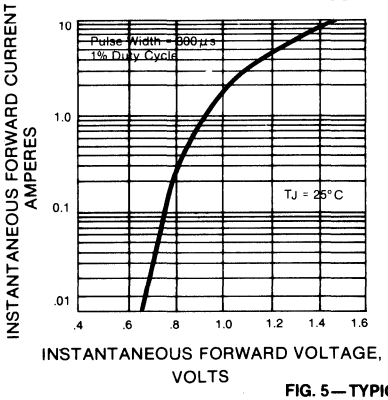


FIG. 4—TYPICAL JUNCTION CAPACITANCE

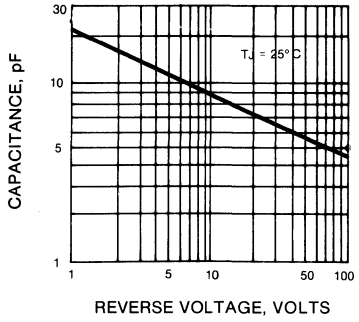
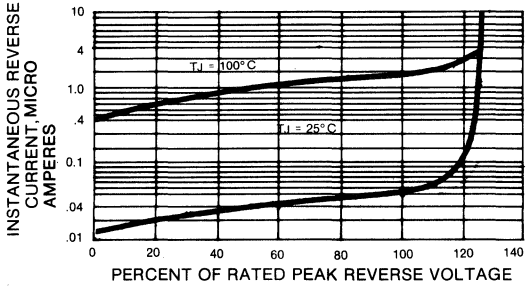


FIG. 5—TYPICAL REVERSE CHARACTERISTICS



GL41A THRU GL41M

SURFACE MOUNT GLASS PASSIVATED SILICON RECTIFIER

SUPERECTIFIER

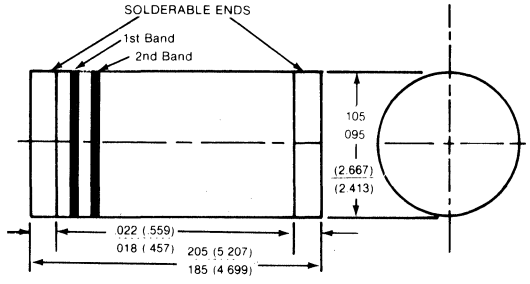
GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

- For surface mounted applications
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 450°C/ 5 seconds at terminals. Complete device submersible temperature of 265°C for 10 seconds in solder bath



All dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Solderable per MIL-STD-202, Method 208
Polarity: Two bands indicate cathode
1st band denotes device type
2nd band denotes voltage type
Mounting Position: Any
Handling precautions: None
Weigh*; 0.013 gram, 0.0046 ounce

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings and 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%..

Standard recovery time devices: 1st band is white.	GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blcoking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current T_A = 75°C	1.0							A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30							A
Maximum Instantaneous Forward Voltage at 1.0A	1.1							V
Maximum Full Load Reverse Current, Full cycle Average at 75°C Ambient	30							μA
Maximum DC Reverse Current at T_A = 25°C Rated DC Blocking Voltage T_A = 125°C	10 50.0							μA μA
Typical Junction Capacitance (Note 1)	15							pF
Maximum Thermal Resistance R_{thJL} (Note 2) R_{thJA} (Note 3)	30 75							°C/W
Operating and Storage Temperature Range, T_J, T_{STG}	-65 to +175							°C
Polarity Color Bands (2nd Band)	Gray		Red	Orange	Yellow	Green	Blue	Violet	

NOTES:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC.
2. Thermal resistance junction to terminal, 6.0mm² copper pads to each terminal.
3. Thermal resistance junction to ambient, 6.0mm² copper pads to each terminal.

RATING AND CHARACTERISTIC CURVES
GL41A THRU GL41M

FIG. 1 — FORWARD CURRENT DERATING CURVE

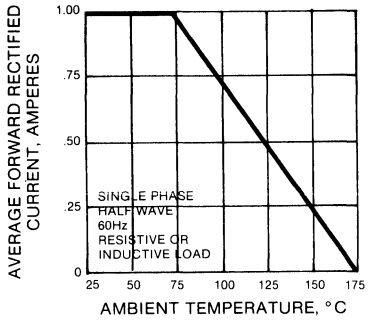


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

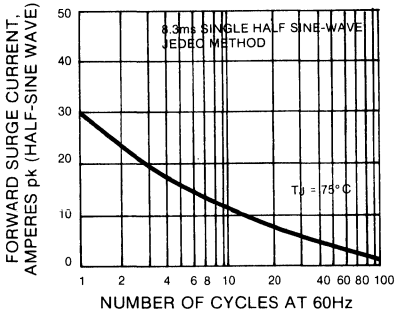


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

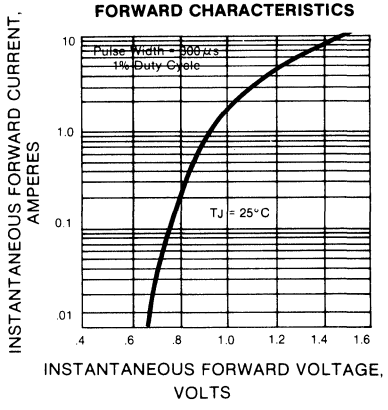


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

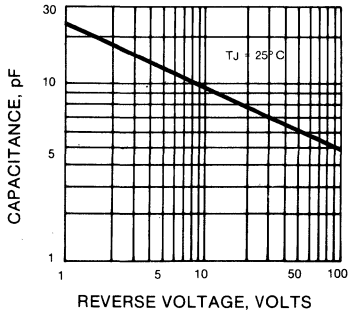
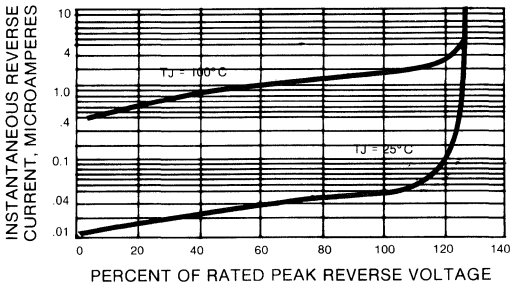


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



RGL41A THRU RGL41M

SURFACE MOUNT GLASS PASSIVATED FAST SWITCHING SILICON RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

CURRENT
1.0 Ampere

FEATURES

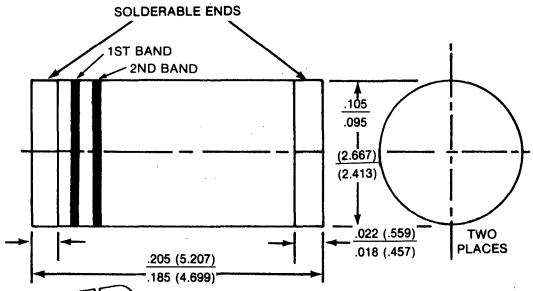
- For surface mounted applications
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- High temperature soldering guaranteed 450°C/5 seconds at terminals. Complete device submersible temperature 265°C for 10 seconds in solder bath

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Solderable per MIL-STD-202, method 208
Polarity: Two bands indicate cathode
1st bank denotes device type
2nd band denotes voltage type
Mounting Position: Any
Handling precautions: None
Weight: 0.013 gram, 0.0046 ounce

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976, brazed-lead assembly by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Fast switching devices: 1st band is red.	RGL41A	RGL41B	RGL41D	RGL41G	RGL41J	RGL41K	RGL41M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at T_A = 55°C	1.0							A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30							A
Maximum Instantaneous Forward Voltage at 1.0A	1.3							V
Maximum Full Load Reverse Current, Full Cycle Average, T_A = 55°C	50							μA
Maximum DC Reverse Current, T_A = 25°C at Rated DC Blocking Voltage T_A = 125°C	5.0 100							μA
Maximum Reverse Recovery Time (Note 1)	150				250	500	500	ns
Typical Junction Capacitance (Note 2)	15							pF
Maximum Thermal Resistance R_{thJL} (Note 3) R_{thJA} (Note 4)	30 75							°C/W
Operating and Storage Temperature Range, T_J	-65 to +175							°C
Polarity Color Bands (2nd Band)	Gray	Red	Orange	Yellow	Green	Blue	Violet	

NOTES: 1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. Thermal resistance junction to terminal, 6.0mm² copper pads to each terminal.
4. Thermal resistance junction to ambient, 6.0mm² copper pads to each terminal.

RATING AND CHARACTERISTIC CURVES
RGL41A THRU RGL41M

FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

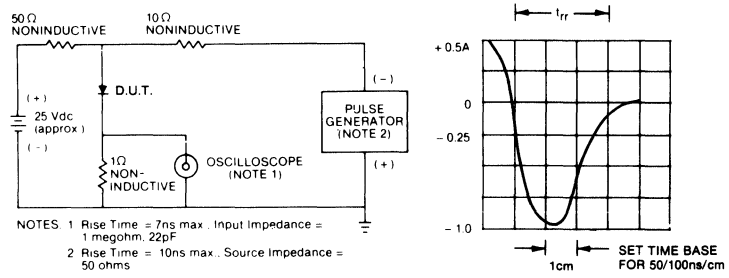


FIG. 2 — FORWARD CURRENT DERATING CURVE

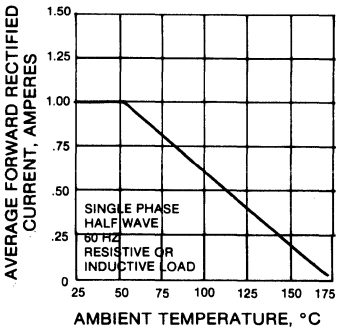


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

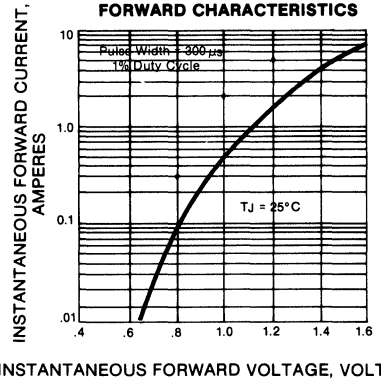


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

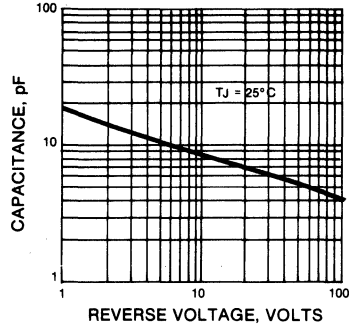


FIG. 5 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

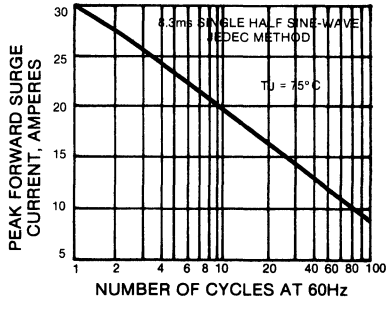
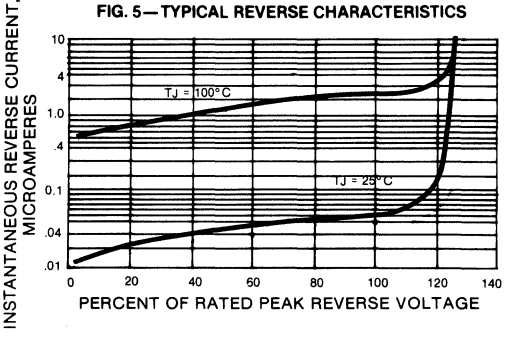


FIG. 5—TYPICAL REVERSE CHARACTERISTICS



GL27 SERIES

SURFACE MOUNT GLASS PASSIVATED SILICON RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

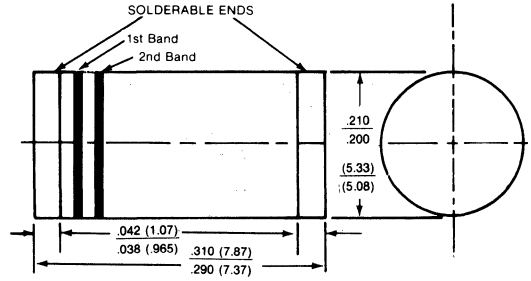
CURRENT
3.0 Amperes

FEATURES

- For surface mounted applications
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 450°C/5 seconds at terminals. Complete device submersible termperature of 265°C for 10 seconds in solder bath

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Solderable per MIL-STD-202, Method 208
Polarity: Two bands indicate cathode
1st Band denotes device type
2nd Band denotes voltage type
Mounting Position: Any
Handling precautions: None
Weight: 0.04 ounce, 1.12 grams



All dimensions in inches and (millimeters)

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings and 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Standard recovery time devices: 1st band is white.	GL27A	GL27B	GL27D	GL27G	GL27J	GL27K	GL27M	Units
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at T_A = 55°C	3.0							A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125							A
Maximum Instantaneous Forward Voltage at 3.0A	1.1							V
Maximum Full Load Reverse Current, Full Cycle Average, T_A = 55°C	100							μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C	5.0							μA
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 125°C	100							μA
Typical Junction Capacitance (Note 1)	60							pF
Maximum Thermal Resistance R_{thJL} (Note 2)	8.0							°C/W
Maximum Thermal Resistance R_{thJA} (Note 3)	45							°C/W
Operating and Storage Temperature Range, T_J, T_{STG}	-65 to +200							°C
Polarity Color Bands (2nd band)	Gray		Red	Orange	Yellow	Green	Blue	Violet

NOTES:
1. Measured at 1.0MHz and applied reverse voltage of 4.0VDC.
2. Thermal resistance junction to terminal, .384 in², 10mm² copper pads to each terminal.
2. Thermal resistance junction to ambient, .384 in², 10mm² copper pads to each terminal.

RATINGS AND CHARACTERISTIC CURVES
GL27 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

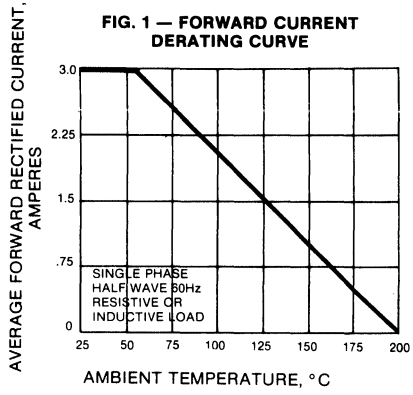


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

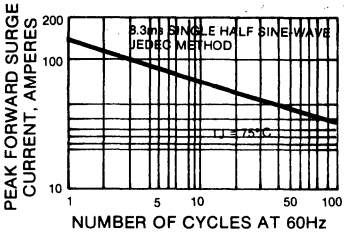


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

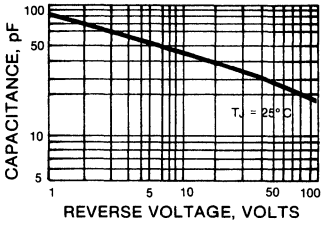


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

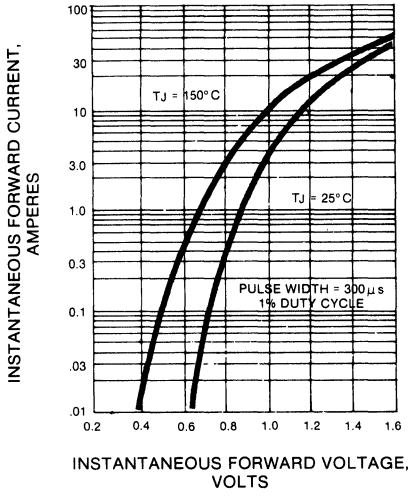
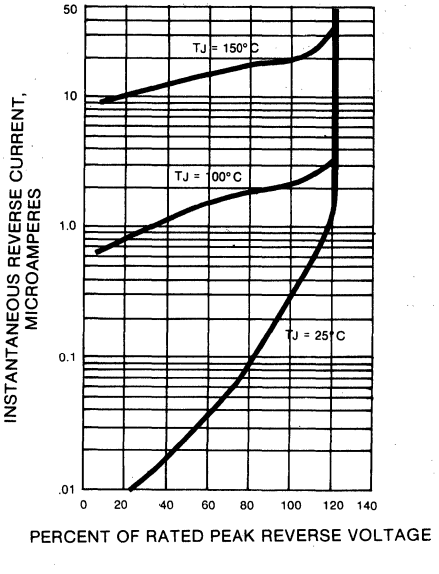


FIG. 5 — TYPICAL REVERSE CHARACTERISTICS



RGL27 SERIES

SURFACE MOUNT GLASS PASSIVATED FAST SWITCHING SILICON RECTIFIER

GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 1000 Volts

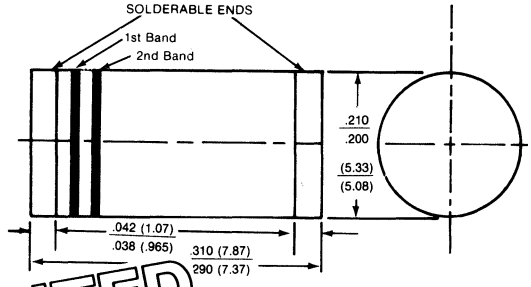
CURRENT
3.0 Amperes

FEATURES

- For surface mounted applications
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- Fast switching for high efficiency
- High temperature soldering guaranteed 450°C/5 seconds at terminals. Complete device submersible temperature of 265°C for 10 seconds in solder bath

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Solderable per MIL-STD-202
Method 208
Polarity: Two bands indicate cathode
1st band denotes device type
2nd band denotes voltage type
Mounting Position: Any
Handling precautions: None
Weight: 0.04 ounce, 1.12 grams



All dimensions in inches and (millimeters)

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Fast switching devices: 1st band is red.	RGL27A	RGL27B	RGL27D	RGL27G	RGL27J	RGL27K	RGL27M	Units
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at T_A = 55°C	3.0							A
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	125							A
Maximum Instantaneous Forward Voltage at 3.0A	1.3							V
Maximum Full Load Reverse Current, Full Cycle Average, T_A = 55°C	100							μA
Maximum DC Reverse Current, at Rated DC Blocking Voltage T_A = 25°C T_A = 125°C	5.0 100							μA μA
Maximum Reverse Recovery Time (Note 1)			150		250	500	500	ns
Typical Junction Capacitance (Note 2)	60							pF
Maximum Thermal Resistance R_{thJL} (Note 2) R_{thJA} (Note 3)	10 50							°C/W
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +200							°C
Polarity Color Bands (2nd band)	Gray	Red	Orange	Yellow	Green	Blue	Violet	

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1.0A, IRR = .25A.
2. Measure at 1 MHz and applied reverse voltage of 4.0 volts.
3. Thermal resistance junction to terminal, .394 in², 10mm² copper pads to each terminal.
4. Thermal resistance junction to ambient, .394 in², 10mm² copper pads to each terminal.

RATING AND CHARACTERISTIC CURVES
RGL27 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

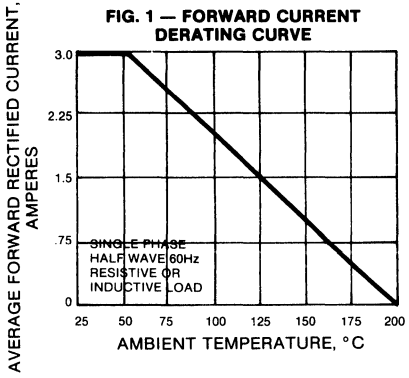


FIG. 2 — MAXIMUN NON-REPETITIVE PEAK FORWARD SURGE CURRENT

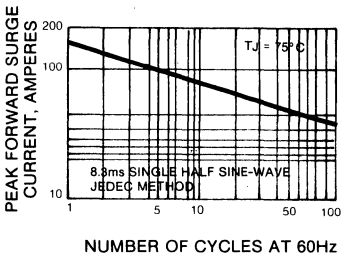


FIG. 3 — TYPICAL REVERSE CHARACTERISTICS

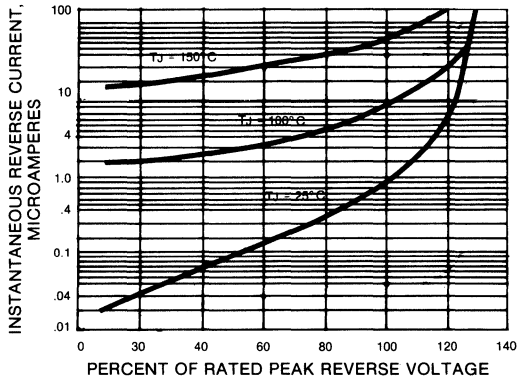


FIG. 4 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

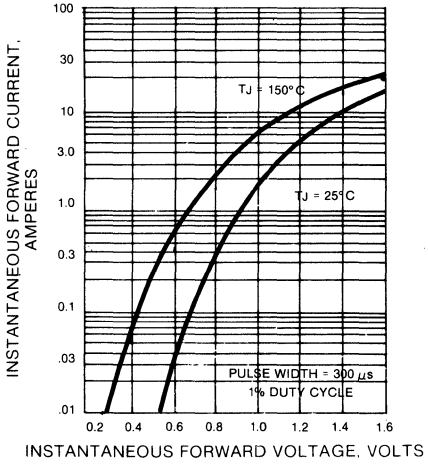


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

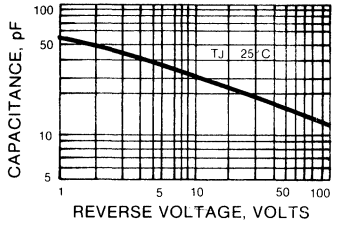
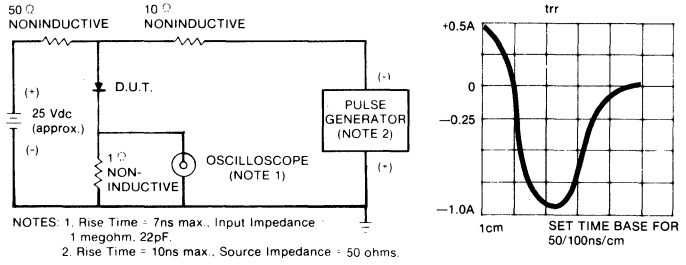


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.

EGL41 SERIES

SURFACE MOUNT GLASS PASSIVATED FAST EFFICIENT SILICON RECTIFIER

SUPERECTIFIER

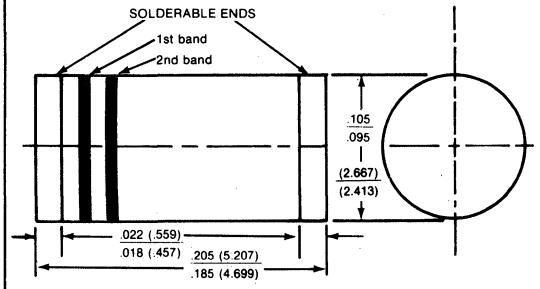
GENERAL INSTRUMENT

VOLTAGE RANGE
50 to 400 Volts

CURRENT
1.0 Ampere

FEATURES

- For surface mounted applications
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Superfast recovery times for high efficiency
- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Exceeds environmental standards of MIL-STD-19500.
- High temperature soldering guaranteed 450°C/ 5 seconds at terminals. Complete device submersible temperature of 265°C for 10 seconds in solder bath



MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Solderable per MIL-STD-202, method 208
Polarity: Two bands indicate cathode
1st band denotes device type
2nd band denotes voltage type
Mounting Position: Any
Handling precautions: None
Weight: 0.013 gram, 0.0046 ounce

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Fast efficient devices: 1st band is green.	EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	300	400	V
Maximum RMS Voltage	35	70	105	140	210	280	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	V
Maximum Average Forward Rectified Current at T_A = 75°C	1.0						A
Peak Forward Surge Current, IFM (Surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	30.0						A
Maximum Instantaneous Forward Voltage at 1.0A	1.0				1.25		V
Maximum DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 125°C	5.0 50.0						μA
Maximum Reverse Recovery Time (Note 1)	50.0						ns
Typical Junction Capacitance (Note 2)	15						pF
Maximum Thermal Resistance R_{thJL} (Note 3) R_{thJA} (Note 4)	30 60						°C/W
Operating and Storage Temperature Range T_J, T_{STG}	-65 to + 175						°C
Polarity Color Bands (2nd band)	Gray	Red	Pink	Orange	Brown	Yellow	

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1A, Irr = .25A
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. Thermal resistance junction to terminal, 6.0mm² copper pads to each terminal.
4. Thermal resistance junction to ambient, 6.0mm² copper pads to each terminal.

RATING AND CHARACTERISTIC CURVES
EGL41A THRU EGL41G

FIG. 1 — FORWARD CURRENT DERATING CURVE

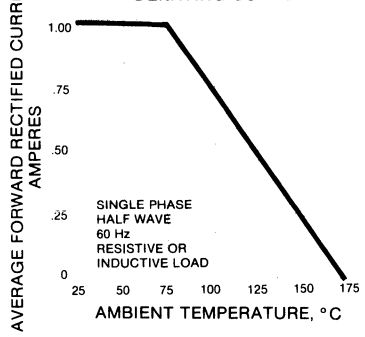


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

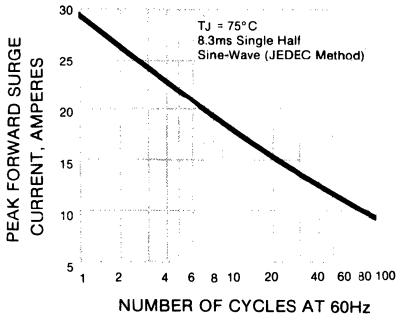


FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

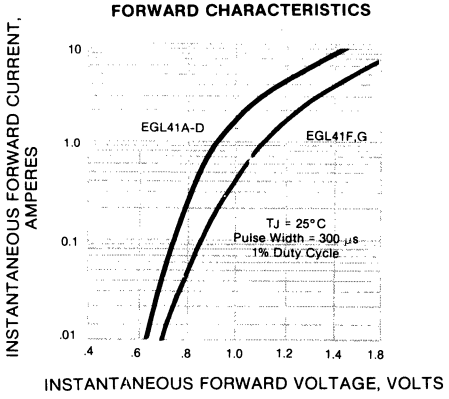


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

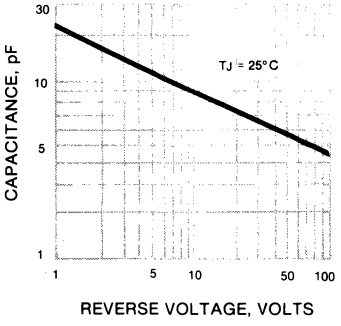
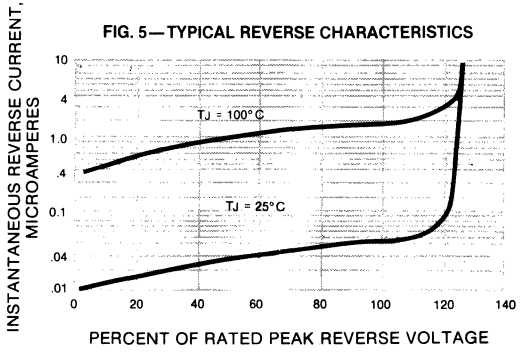


FIG. 5—TYPICAL REVERSE CHARACTERISTICS

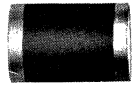


EGL27 SERIES

ULTRAFAST SURFACE MOUNT GLASS PASSIVATED SILICON RECTIFIER

SUPERECTIFIER

GENERAL INSTRUMENT

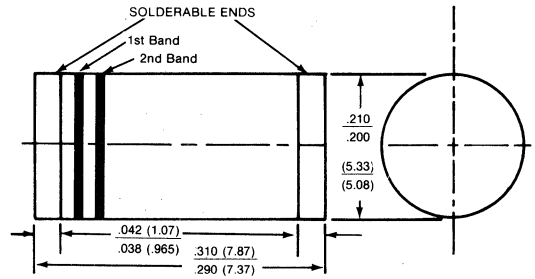


VOLTAGE RANGE
50 to 400 Volts

CURRENT
3.0 Amperes

FEATURES

- Ultrafast Recovery Times for high efficiency
- For surface mounted applications
- High temperature metallurgically bonded—no compression contacts as found in diode-constructed rectifiers
- Glass passivated junction
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 450°C/5 seconds at terminals. Complete device submersible temperature of 265°C for 10 seconds in solder bath



MECHANICIAL DATA

Case: Molded plastic over glass
Terminals: Solderable per MIL-STD-202, Method 208
Polarity: Two bands indicate cathode
1st band denotes device type
2nd band denotes voltage type
Mounting Position: Any
Handling precautions: None
Weight: 0.04 ounce, 1.12 grams

PATENTED

Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly to Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Fast efficient devices: 1st band is green.	EGL27A	EGL27B	EGL27C	EGL27D	EGL27F	EGL27G	UNITS
Maximum Recurent Peak Reverse Voltage	50	100	150	200	300	400	V
Maximum RMS Voltage	35	70	105	140	210	280	V
Maximum DC Blocking Voltage	50	100	150	200	300	400	V
Maximum Average Forward Rectified Current at T_A = 55°C	3.0						A
Peak Forward Surge Current, I_{FM} (surge): 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	150						A
Maximum Instantaneous Forward Voltage at 3.0A	1.0				1.25		V
Maximum Full Load Reverse Current, Full Cycle Average, T_A = 55°C	100						μA
Maximum Reverse DC Reverse Current T_A = 25°C at Rated DC Blocking Voltage T_A = 100°C	10 200						μA
Maximum Reverse Recovery Time (Note 1)	50						ns
Typical Junction Capacitance (Note 2)	100						pF
Maximum Thermal Resistance R_{thJL} (Note 3) R_{thJA} (Note 4)	8.0 45						°C/W
Operating and Storage Temperature Range, T_J, T_{STG}	-65 to +200						°C
Polarity Color Bands (2nd band)	Gray	Red	Pink	Orange	Brown	Yellow	

NOTES:
1. Reverse Recovery Test Conditions: IF = .5A, IR = 1.0A, IRR = .25A.
2. Measure at 1 MHz and applied reverse voltage of 4.0 volts.
3. Thermal resistance junction to terminal, .394 in², 10mm² copper pads to each terminal.
4. Thermal resistance junction to ambient, .394 in², 10mm² copper pads to each terminal.

RATINGS AND CHARACTERISTIC CURVES
EGL27 SERIES

FIG. 1 — FORWARD CURRENT DERATING CURVE

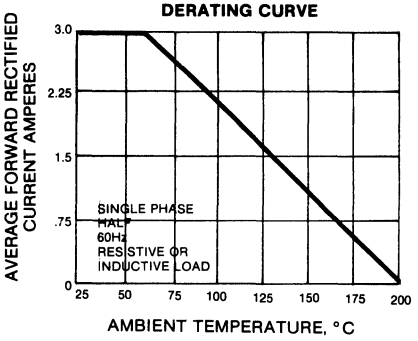


FIG. 2 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

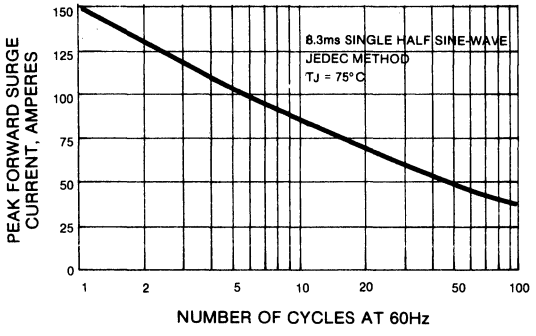


FIG. 3 — TYPICAL FORWARD CHARACTERISTICS

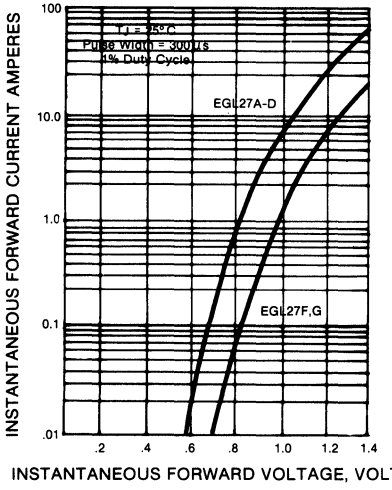


FIG. 4 — TYPICAL REVERSE CHARACTERISTICS

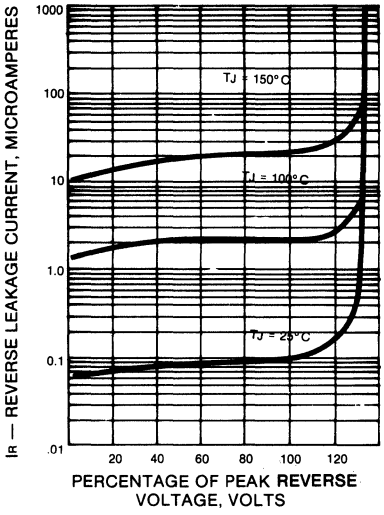


FIG. 5 — TYPICAL JUNCTION CAPACITANCE

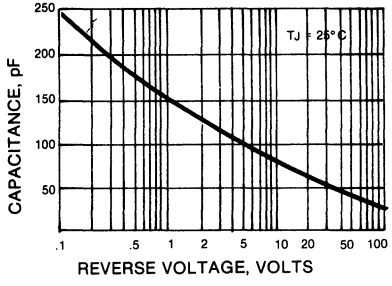
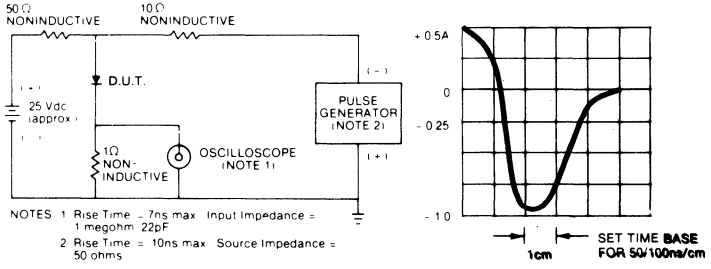


FIG. 6 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



GPP1 & GPP5 SERIES

GLASS PASSIVATED RECTIFIER CHIPS

GENERAL INSTRUMENT

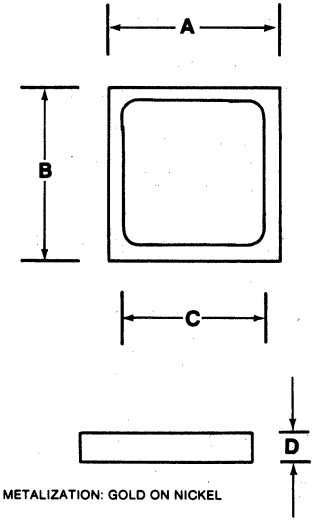
VOLTAGE RANGE
50 to 1000 Volts
CURRENT
1.0 and 5.0 Amperes

FEATURES

- Ideal for Hybrid Circuits
- Solderable Metallization
- Typical I_R less than 1μA
- Glass Passivated Junction
- High Surge Capability
- Mounting Position: Any

	Dimension A	Dimension B	Dimension C	Dimension D
GPP1	.062 (1.6) .058 (1.5)	.062 (1.6) .058 (1.5)	.048 (1.2) .044 (1.1)	.010 (.25) .008 (.20)
GPP5	.102 (2.6) .098 (2.5)	.102 (2.6) .098 (2.5)	.086 (2.2) .082 (2.1)	.010 (.25) .008 (.20)

Dimensions in inches (millimeters)



METALIZATION: GOLD ON NICKEL

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Single phase half sine-wave 60 Hz resistive or inductive load.
For capacitive load derate current by 20%
All ratings are for T_A = 25°C unless otherwise specified

	GPP1A GPP5A	GPP1B GPP5B	GPP1D GPP5D	GPP1G GPP5G	GPP1J GPP5J	GPP1K GPP5K	GPP1M	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current (Note 1) GPP1 T_A = 75°C GPP5 T_A = 100°C				1.0 5.0				A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) GPP1 GPP5				60 150				A
Maximum Forward Voltage at specified current (Pulse width = 300μS, Duty Factor = 1%) GPP1 I_F = 1.0A GPP5 I_F = 5.0A				1.1 1.1				V
Maximum Reverse Leakage Current at Rated DC Blocking Voltage GPP1 GPP5				5.0 10.0				μA
Operating and Storage Temperature Range T_J, T_{STG}				-65 to + 175				°C

NOTES: 1. Actual rating is heat sink dependent.

RATING AND CHARACTERISITC CURVES
GPP1 and GPP5 SERIES

Fig. 1—FORWARD CURRENT DERATING CURVE

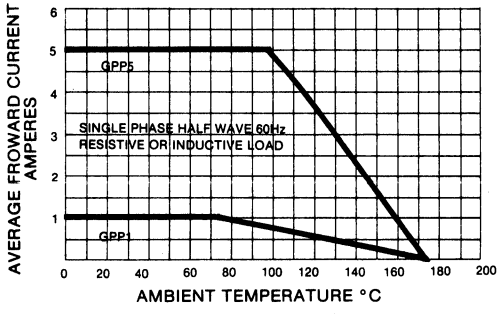


Fig. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

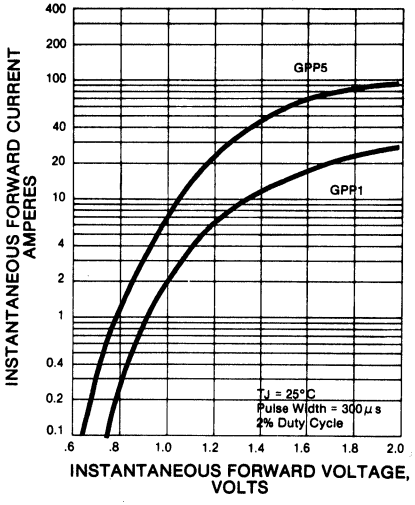


Fig. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

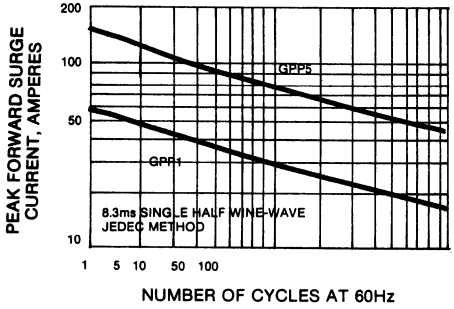


Fig. 4—TYPICAL REVERSE CHARACTERISTICS

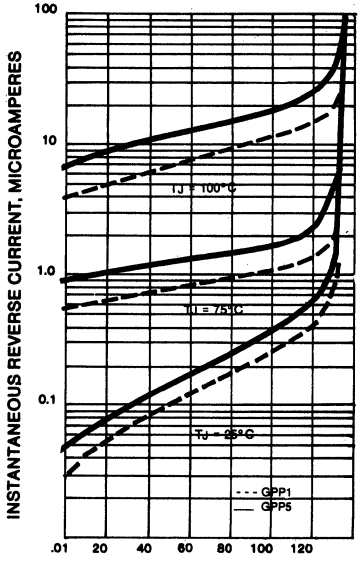
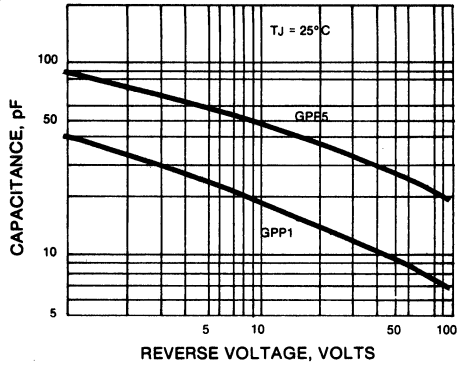


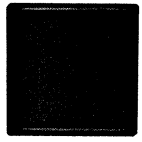
FIG. 5 — TYPICAL JUNCTION CAPACITANCE



RGPP1 & RGPP5 SERIES

FAST RECOVERY GLASS PASSIVATED RECTIFIER CHIPS

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 800 Volts

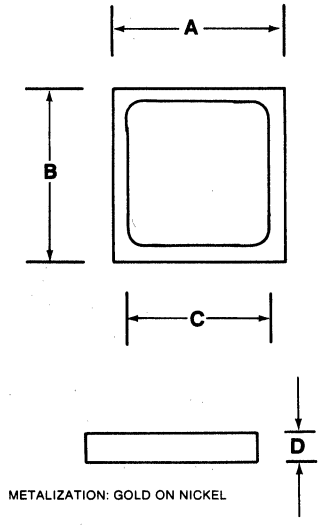
CURRENT
1.0 and 5.0 Amperes

FEATURES

- Ideal for Hybrid Circuits
- Solderable Metalization
- Glass Passivated Junction
- High Surge Capability
- Mounting Position: Any

	Dimension A	Dimension B	Dimension C	Dimension D
RGPP1	.062 (1.6)	.062 (1.6)	.048 (1.2)	.010 (.25)
	.058 (1.5)	.058 (1.5)	.044 (1.1)	.008 (.20)
	A	B	C	D
RGPP5	.102 (2.6)	.102 (2.6)	.082 (2.1)	.012 (0.3)
	.098 (2.5)	.098 (2.5)	.078 (2.0)	.010 (0.25)

Dimensions in inches (millimeters)



METALIZATION: GOLD ON NICKEL

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	RGPP1A RGPP5A	RGPP1B RGPP5B	RGPP1D RGPP5D	RGPP1G RGPP5G	RGPP1J RGPP5J	RGPP1K RGPP5K	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	V
Maximum RMS Voltage	35	70	140	280	420	560	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	V
Maximum Average Forward Rectified Current — RGPP1 T_A = 75°C	1.0						A
Maximum Average Forward Rectified Current — RGPP5 T_A = 100°C	5.0						A
Peak Forward Surge Current, 8.3msec, single half sine-wave Superimposed on rated load (JEDEC Method) — RGPP1	30.0						A
Peak Forward Surge Current, 8.3msec, single half sine-wave Superimposed on rated load (JEDEC Method) — RGPP5	150.0						A
Maximum Forward Voltage at Rated Forward Current (Pulse Width = 300 μS, Duty Factor = 1%)	1.3						V
Max Reverse Leakage Current at Rated DC Blocking Voltage T_A = 25°C — RGPP1	10.0						μA
Max Reverse Leakage Current at Rated DC Blocking Voltage T_A = 25°C — RGPP5	25.0						μA
Maximum Reverse Recovery Time (Note 2)	150			200	250	350	ns
Operating and Storage Temperature Range T_J, T_{STG}	-65 to +150						°C

NOTES:
1. Actual ratings is heat sink dependent.
2. Reverse Recovery Test Conditions: IF = 0.5A, IR = 1.0A, Irr = 0.25A.

RATING AND CHARACTERISTIC CURVES RGPP1 & RGPP5

Fig. 1—FORWARD CURRENT DERATING CURVE

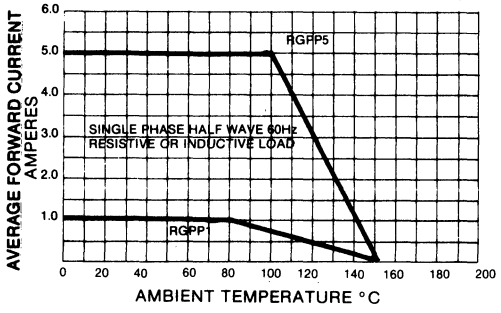


Fig. 2—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

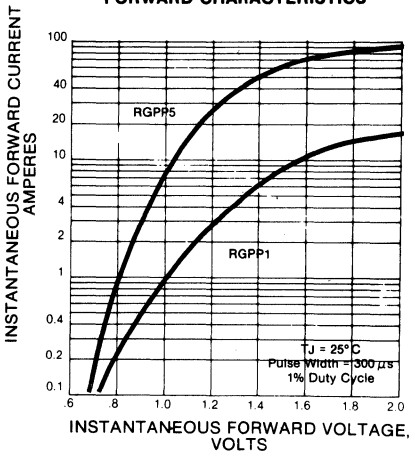


FIG. 3 — MAXIMUM NON-REPETITIVE SURGE CURRENT

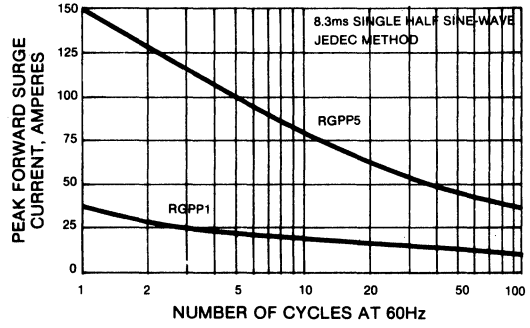


Fig. 4—TYPICAL REVERSE CHARACTERISTICS

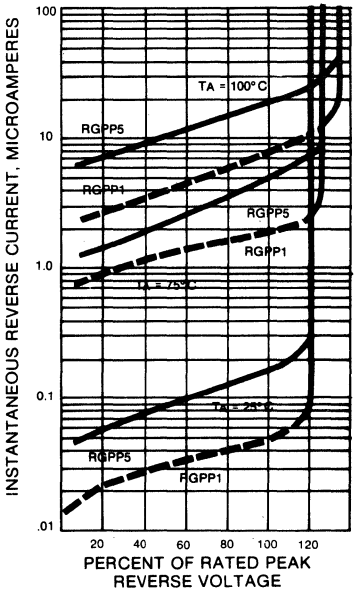
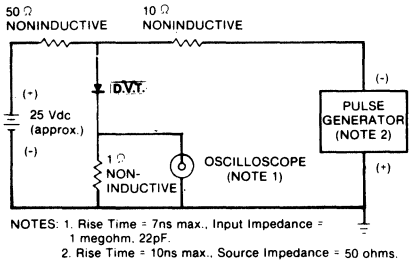
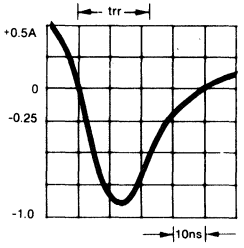


FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST DIAGRAM



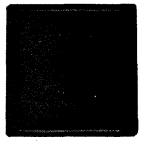
NOTES: 1. Rise Time = 7ns max., Input Impedance = 1 megohm, 22pF.
2. Rise Time = 10ns max., Source Impedance = 50 ohms.



EFR SERIES

EFFICIENT FAST RECOVERY GLASS PASSIVATED RECTIFIER CHIP

GENERAL INSTRUMENT



VOLTAGE RANGE
50 to 200 Volts

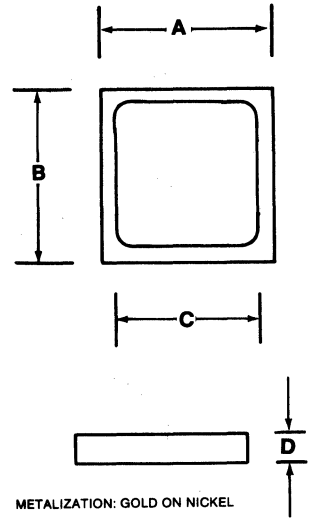
CURRENT
1.0, 3.0, 5.0, and 8.0 Amperes

FEATURES

- Ideal for Hybrid Circuits
- Solderable Metallization
- Typical I_R less than 1μA
- Glass Passivated Junction
- High Surge Capability
- Superfast recovery times
- Low forward voltage, high current capability
- Mounting Position: Any

	Dimension A	Dimension B	Dimension C	Dimension D
EFR 1	.062 (1.6) .058 (1.5)	.062 (1.6) .058 (1.5)	.050 (1.3) .046 (1.2)	.010 (.25) .008 (.20)
EFR 3	.086 (2.2) .082 (2.1)	.086 (2.2) .082 (2.1)	.069 (1.8) .065 (1.7)	.010 (.25) .008 (.20)
EFR 5	.102 (2.6) .098 (2.5)	.102 (2.6) .098 (2.5)	.086 (2.2) .082 (2.1)	.010 (.25) .008 (.20)
EFR 8	.142 (3.6) .138 (3.5)	.142 (3.6) .138 (3.5)	.130 (3.3) .126 (3.2)	.010 (.25) .008 (.20)

Dimension in inches (millimeters)



METALIZATION: GOLD ON NICKEL

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Single phase half sine-wave 60 Hz resistive or inductive load.
For capacitive load derate current by 20%
All ratings are for TA = 25°C unless otherwise specified.

	EFR1A EFR3A EFR5A EFR8A	EFR1B EFR3B EFR5B EFR8B	EFR1C EFR3C EFR5C EFR8C	EFR1D EFR3D EFR5D EFR8D	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	150	200	V
Maximum RMS Voltage	35	70	105	140	V
Maximum DC Blocking Voltage	50	100	150	200	V
Maximum Average Forward Rectified Current (Note 1) at TA = 75°C EFR1 EFR3 EFR5 EFR8	1.0 3.0 5.0 8.0				A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method) EFR1 EFR3 EFR5 EFR8	50 75 125 300				A
Maximum Instantaneous Forward voltage at Specified Current: EFR1 I_F = 1.0A EFR3 I_F = 3.0A EFR5 I_F = 5.0A EFR8 I_F = 8.0A (Pulse Width = 300 μs, Duty Factor = 1%)	.90				V
Maximum Reverse Leakage Current at Rated DC Blocking Voltage TA = 25°C EFR1 EFR3 EFR5 EFR8	5.0 5.0 5.0 10.0				μA
Maximum Reverse Recovery Time (Note 2)	35				ns
Operating and Storage Temperature Range TJ, TSTG	-65 to +150				°C

NOTES: 1-Actual Rating is heat sink dependent. 2-IF = 0.5A, IR = 1.0A, Irr = 0.25A

RATING AND CHARACTERISTIC CURVES
EFR SERIES

Fig. 1—FORWARD CURRENT DERATING CURVE

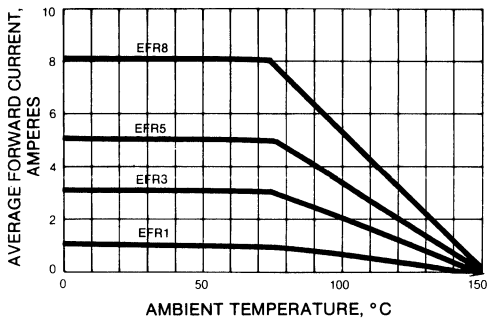


Fig. 3—MAXIMUM NON-REPETITIVE SURGE CURRENT

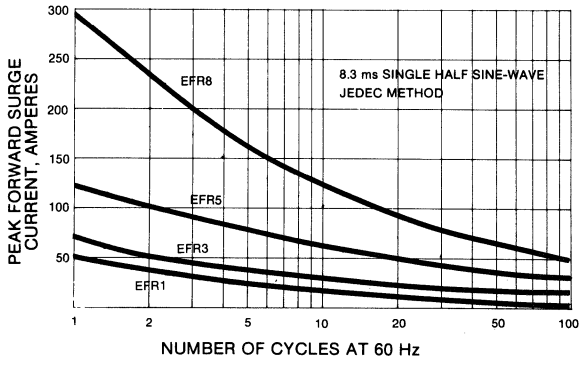


Fig. 5—REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

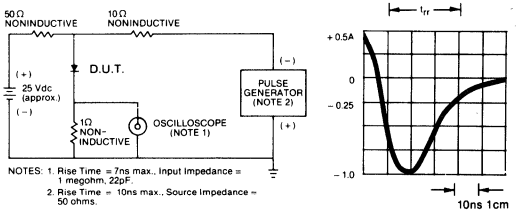


FIG. 2—TYPICAL REVERSE CHARACTERTISTICS

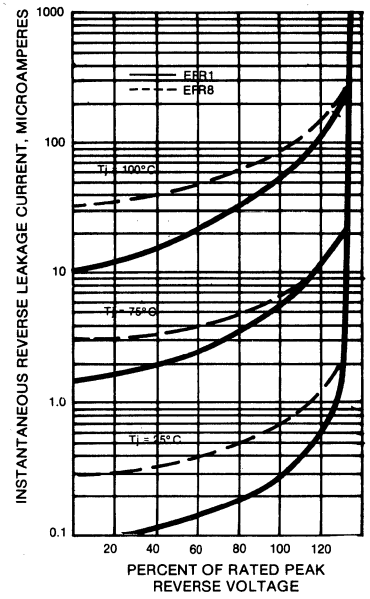
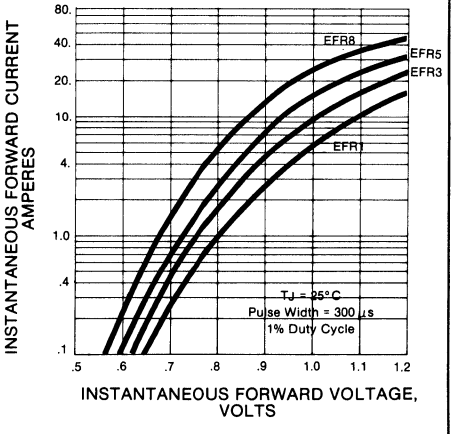


Fig. 4—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



SCH1, SCH3, SCH5, AND SCH10 SERIES

SCHOTTKY OXIDE PASSIVATED RECTIFER CHIPS

GENERAL INSTRUMENT

VOLTAGE RANGE

20 thru 60 Volts

CURRENT

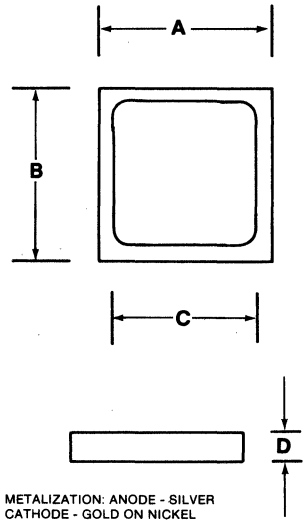
1.0, 3.0, 5.0, and 10.0 Amperes

FEATURES

- Ideal for Hybrid Circuits
- Solderable Metallization
- Metal to silicon rectifier majority carrier conduction
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capacity
- Mounting Position: Any

	Dimension A	Dimension B	Dimension C	Dimension D
SCH1	.052 (1.32) .048 (1.22)	.052 (1.32) .048 (1.22)	.042 (1.07) .040 (1.02)	.010 (.25) .009 (.23)
SCH3	.074 (1.98) .070 (1.78)	.074 (1.98) .070 (1.78)	.064 (1.62) .062 (1.57)	.010 (.25) .009 (.23)
SCH5	.117 (2.97) .113 (2.87)	.117 (2.97) .113 (2.87)	.105 (2.67) .103 (2.62)	.010 (.25) .009 (.23)
SCH10	.162 (4.11) .158 (4.01)	.162 (4.11) .158 (4.01)	.147 (3.73) .145 (3.68)	.010 (.25) 009 (.23)

Dimensions in inches (millimeters)



METALIZATION: ANODE - SILVER
CATHODE - GOLD ON NICKEL

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Single phase half sine-wave 60 Hz resistive or inductive load.
For capactivie load derate current by 20%
All ratings are for T_A = 25°C unless otherwise specified.

		SCH120 SCH320 SCH520 SCH1020	SCH130 SCH330 **SCH530** **SCH030**	SCH140 SCH340 SCH540 SCH1040	SCH150 SCH350 SCH550 SCH1050	SCH160 SCH360 SCH560 SCH1060	UNITS
Maximum Recurrent Peak Reverse Voltage		20	30	40	50	60	V
Maximum RMS Voltage		14	21	28	35	42	V
Maximum DC Blocking Voltage		20	30	40	50	60	V
Maximum Average Forward Rectified Current (Note 1)	SCH1 SCH3 SCH5 See Fig. 1 SCH10	1.0 3.0 5.0 10.0					A
Peak Forward Surge Current, 8.3mS single half sine-wave Superimposed on Rated Load (JEDEC method)	SCH1 SCH3 SCH5 SCH10	100 200 250 300					A
Maximum Instantaneous Forward Voltage at Specified Current (Pulse Width = 300μS, Duty Factor = 1%)	SCH1 I_F = 1.0A SCH3 I_F = 3.0A SCH5 I_F = 5.0A SCH10 I_F = 10.0A	.5 .5		.65 .65	.75 .75		V V
Maximum Reverse Leakage Current at Rated DC Blocking Voltage	SCH1 SCH3 SCH5 SCH10	1.0 2.0 3.0 5.0					mA
Operating and Storage Temperature Range, T_J	SCH1, 3 SCH5, 10	-65 to +125 -65 to +150			-65 to +150		°C

NOTES:
1. Actual rating is heat sink dependent.

RATING AND CHARACTERISTIC CURVES
SCH1, SCH3, SCH5, AND SCH10 SERIES

Fig. 1A — Forward Current Derating Curve
20, 30, and 40V Devices

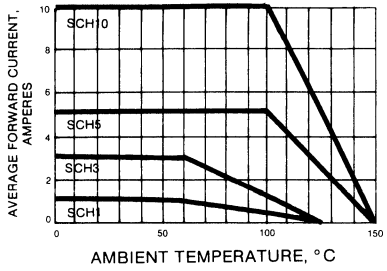


Fig. 1B—Forward Current Derating Curve
50 and 60V Devices

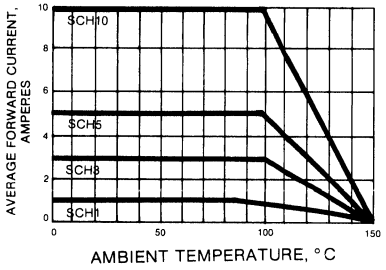


FIG. 2A - TYPICAL CHARACTERISTICS
FORWARD CHARACTERISTICS

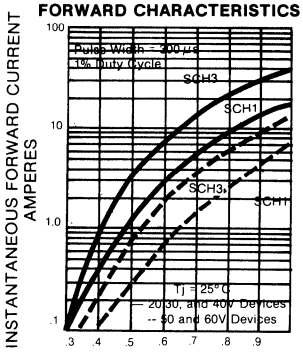


FIG. 2B - TYPICAL INSTANTANEOUS
FORWARD CHARACTERISTICS

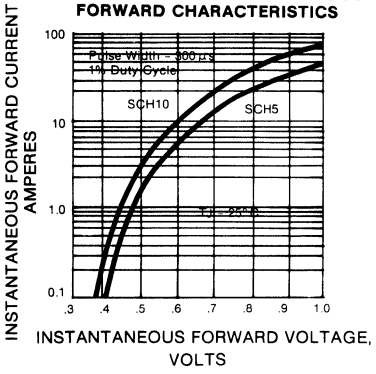


Fig. 3 - TYPICAL REVERSE
CHARACTERISTICS

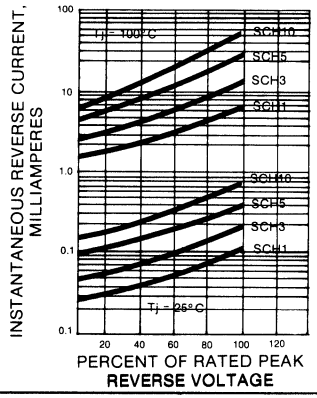
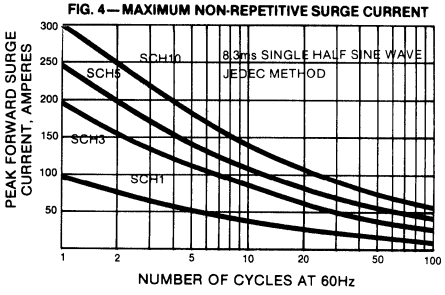
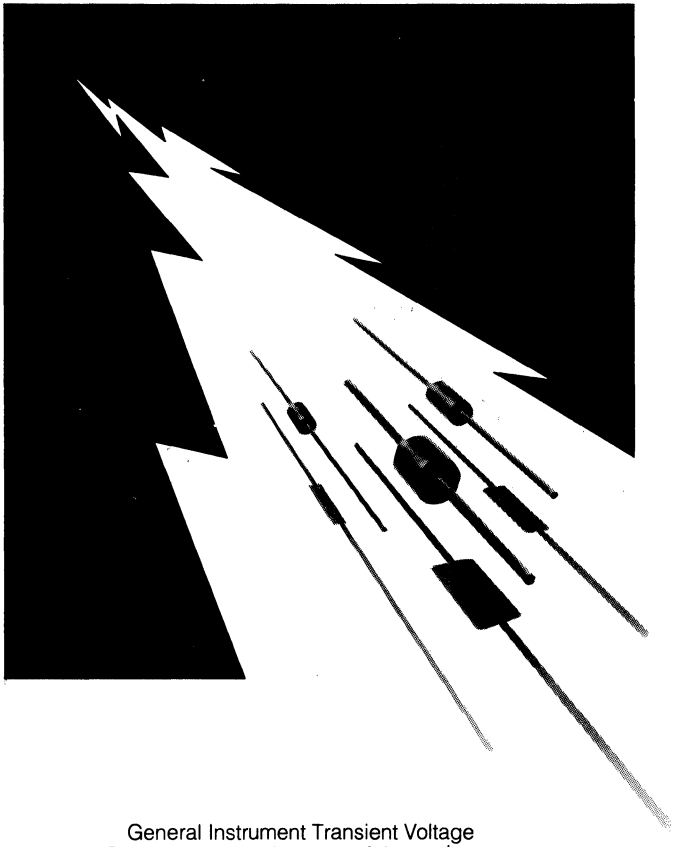


FIG. 4—MAXIMUM NON-REPETITIVE SURGE CURRENT



Transient Voltage Suppressors



General Instrument Transient Voltage Suppressors are the state-of-the-art in semiconductor surge protection for modern electronic equipment.

Because TVS devices are semiconductors, there is no inherent wear out mechanism. When overstressed, they short circuit at the changing voltage and protect the associated equipment. The clamping voltage is close to the operating voltage enabling a high degree of protection while assuring the devices are off until their operation is required.

General Instrument TVS units are available in three power ranges: 600, 1500, and 5000 watts with a wide variety of voltages.

GENERAL INSTRUMENT

P6KE SERIES

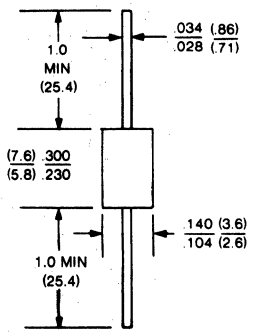
GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

GENERAL INSTRUMENT

VOLTAGE RANGE
6.8 to 200 Volts

600 Watt Peak Power
5.0 Watts Steady State

DO-15



All dimensions in inches and (millimeters)

FEATURES
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction in DO-15 package
- 600W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0ps from 0 volts to BV min.
- Typical I_R less than 1 μA above 10V
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 300°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA
Case: Molded plastic over glass passivated junction
Terminasl: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode excpet Bipolar
Mounting position: Any
Weight: 0.015 ounce, .4 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Rating	Symbol	Value	Units
Peak Power Dissipation at T_A = 25°C, Tp = 1ms (Note 1)	Ppk	Minimum 600	Watts
Steady State Power Dissipation at T_L = 75°C Lead Lengths .375", (9.5mm) (Note 2)	PD	5.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	IFSM	100	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	°C

Notes:
1. Non-repetitive current pulse, per Fig. 3 and derated above T_A = 25°C per Fig. 2.
2. Mounted on Copper Leaf area of 1.57 in² (40mm²).
3. 8.3 ms single half sine-wave, duty cycle = 4 pulses per Minutes maximum.

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types P6KE6.8 through types P6KE200.
Electrical characteristics apply in both directions.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Device	Breakdown Voltage V_{BR} Volts (Note 1) Min	Breakdown Voltage V_{BR} Volts (Note 1) Max	@ I_T (mA)	Working Peak Reverse Voltage V_{RWM} (Volts)	Maximum Reverse Leakage at V_{RWM} I_R (μA)	Maximum Reverse Current I_{RSM} (Note 2) (Amps)	Maximum Reverse Voltage at I_{RSM} (Clamping Voltage) V_{RSM} (Volts)	Maximum Temperature Coefficient of V_{BR} (%/°C)
P6KE6.8	6.12	7.48	10	5.50	1000	56	10.8	0.057
P6KE6.8A	6.45	7.14	10	5.80	1000	57	10.5	0.057
P6KE7.5	6.75	8.25	10	6.05	500	51	11.7	0.061
P6KE7.5A	7.13	7.88	10	6.40	500	53	11.3	0.061
P6KE8.2	7.38	9.02	10	6.63	200	48	12.5	0.065
P6KE8.2A	7.79	8.61	10	7.02	200	50	12.1	0.065
P6KE9.1	8.19	10.0	1.0	7.37	50	44	13.8	0.068
P6KE9.1A	8.65	9.55	1.0	7.78	50	45	13.4	0.068
P6KE10	9.00	11.0	1.0	8.10	10	40	15.0	0.073
P6KE10A	9.50	10.5	1.0	8.55	10	41	14.5	0.073
P6KE11	9.90	12.1	1.0	8.92	5.0	37	16.2	0.075
P6KE11A	10.5	11.6	1.0	9.40	5.0	38	15.6	0.075
P6KE12	10.8	13.2	1.0	9.72	5.0	35	17.3	0.078
P6KE12A	11.4	12.6	1.0	10.2	5.0	36	16.7	0.078
P6KE13	11.7	14.3	1.0	10.5	5.0	32	19.0	0.081
P6KE13A	12.4	13.7	1.0	11.1	5.0	33	18.2	0.081
P6KE15	13.5	16.5	1.0	12.1	5.0	27	22.0	0.084
P6KE15A	14.3	15.8	1.0	12.8	5.0	28	21.2	0.084
P6KE16	14.4	17.6	1.0	12.9	5.0	26	23.5	0.086
P6KE16A	15.2	16.8	1.0	13.6	5.0	27	22.5	0.086
P6KE18	16.2	19.8	1.0	14.5	5.0	23	26.5	0.088
P6KE18A	17.1	18.9	1.0	15.3	5.0	24	25.2	0.088
P6KE20	18.0	22.0	1.0	16.2	5.0	21	29.1	0.090
P6KE20A	19.0	21.0	1.0	17.1	5.0	22	27.7	0.090
P6KE22	19.8	24.2	1.0	17.8	5.0	19	31.9	0.092
P6KE22A	20.9	23.1	1.0	18.8	5.0	20	30.6	0.092
P6KE24	21.6	26.4	1.0	19.4	5.0	17	34.7	0.094
P6KE24A	22.8	25.2	1.0	20.5	5.0	18	33.2	0.094
P6KE27	24.3	29.7	1.0	21.8	5.0	15	39.1	0.096
P6KE27A	25.7	28.4	1.0	23.1	5.0	16	37.5	0.096
P6KE30	27.0	33.0	1.0	24.3	5.0	14	43.5	0.097
P6KE30A	28.5	31.5	1.0	25.6	5.0	14.4	41.4	0.097
P6KE33	29.7	36.3	1.0	26.8	5.0	12.6	47.7	0.098
P6KE33A	31.4	34.7	1.0	28.2	5.0	13.2	45.7	0.098
P6KE36	32.4	39.6	1.0	29.1	5.0	11.6	52.0	0.099
P6KE36A	34.2	37.8	1.0	30.8	5.0	12	49.9	0.099
P6KE39	35.1	42.9	1.0	31.6	5.0	10.6	56.4	0.100
P6KE39A	37.1	41.0	1.0	33.3	5.0	11.2	53.9	0.100
P6KE43	38.7	47.3	1.0	34.8	5.0	9.6	61.9	0.101
P6KE43A	40.9	45.2	1.0	36.8	5.0	10.1	59.3	0.101
P6KE47	42.3	51.7	1.0	38.1	5.0	8.9	67.8	0.101
P6KE47A	44.7	49.4	1.0	40.2	5.0	9.3	64.8	0.101
P6KE51	45.9	56.1	1.0	41.3	5.0	8.2	73.5	0.102
P6KE51A	48.5	53.6	1.0	43.6	5.0	8.6	70.1	0.102
P6KE56	50.4	61.6	1.0	45.4	5.0	7.4	80.5	0.103
P6KE56A	53.2	58.8	1.0	47.8	5.0	7.8	77.0	0.103
P6KE62	55.8	68.2	1.0	50.2	5.0	6.8	89.0	0.104
P6KE62A	58.9	65.1	1.0	53.0	5.0	7.1	85.0	0.104
P6KE68	61.2	74.8	1.0	55.1	5.0	6.1	98.0	0.104
P6KE68A	64.6	71.4	1.0	58.1	5.0	6.5	92.0	0.104
P6KE75	67.5	82.5	1.0	80.7	5.0	5.5	108.0	0.105
P6KE75A	71.3	78.8	1.0	64.1	5.0	5.8	103.0	0.105
P6KE82	73.8	90.2	1.0	66.4	5.0	5.1	118.0	0.105
P6KE82A	77.9	86.1	1.0	70.1	5.0	5.3	113.0	0.105
P6KE91	81.9	100.0	1.0	73.7	5.0	4.8	131.8	0.106
P6KE91A	86.5	95.50	1.0	77.8	5.0	4.8	125.0	0.106
P6KE100	90.0	110.0	1.0	81.0	5.0	4.2	144.0	0.106
P6KE100A	95.0	105.0	1.0	85.5	5.0	4.4	137.0	0.106
P6KE110	99.0	121.0	1.0	89.2	5.0	3.8	158.0	0.107
P6KE110A	105.0	116.0	1.0	94.0	5.0	4.0	152.0	0.107
P6KE120	108.0	132.0	1.0	97.2	5.0	3.5	173.0	0.107
P6KE120A	114.0	126.0	1.0	102.0	5.0	3.6	165.0	0.107
P6KE130	117.0	143.0	1.0	105.0	5.0	3.2	187.0	0.107
P6KE130A	124.0	137.0	1.0	111.0	5.0	3.3	179.0	0.107
P6KE150	135.0	165.0	1.0	121.0	5.0	2.8	215.0	0.108
P6KE150A	143.0	158.0	1.0	128.0	5.0	2.9	207.0	0.108
P6KE160	144.0	176.0	1.0	130.0	5.0	2.6	230.0	0.108
P6KE160A	152.0	168.0	1.0	136.0	5.0	2.7	219.0	0.108
P6KE170	153.0	187.0	1.0	138.0	5.0	2.5	244.0	0.108
P6KE170A	162.0	179.0	1.0	145.0	5.0	2.6	234.0	0.108
P6KE180	162.0	198.0	1.0	146.0	5.0	2.3	258.0	0.108
P6KE180A	171.0	189.0	1.0	154.0	5.0	2.4	246.0	0.108
P6KE200	180.0	220.0	1.0	162.0	5.0	2.1	287.0	0.108
P6KE200A	190.0	210.0	1.0	171.0	5.0	2.2	274.0	0.108

NOTES:
1. V_{BR} measured after I_T applied for 300 μs. I_T = Square Wave Pulse or equivalent.
2. Surge Current Waveform per Figure 3 and Derate per Figure 2.
3. V_F = 3.5V max, I_F = 50A for all types on 1/2 Square or Equivalent Sine Wave.
   PW = 8.3ms, Duty Cycle = 4 Pulses per Minute maximum.

FIGURE 1 — PULSE RATING CURVE

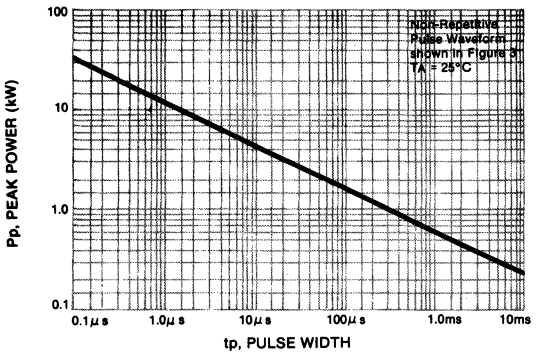


FIGURE 2 — PULSE DERATING CURVE

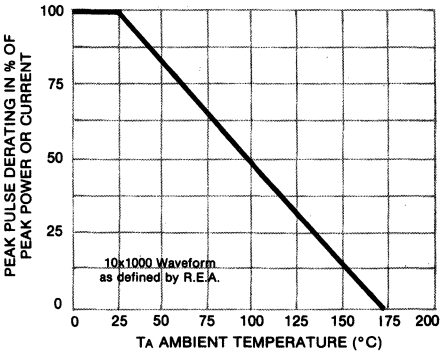


FIGURE 3 — PULSE WAVEFORM

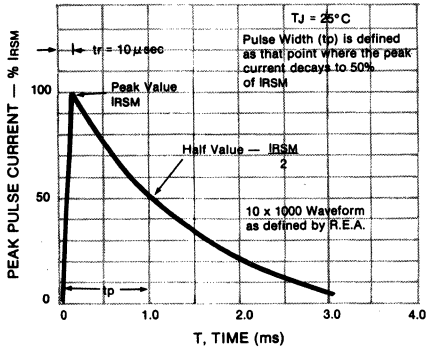


FIGURE 4 — TYPICAL JUNCTION CAPACITANCE

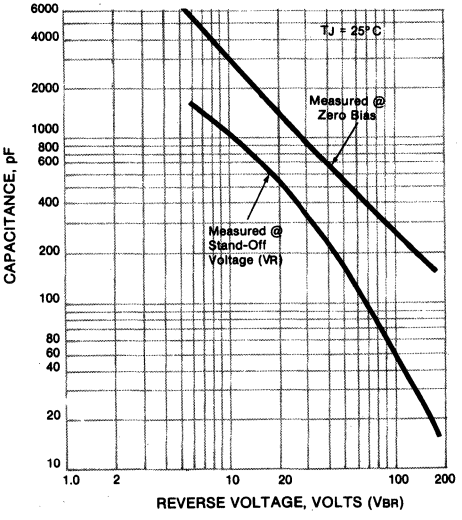


FIGURE 5 — STEADY STATE POWER DERATING

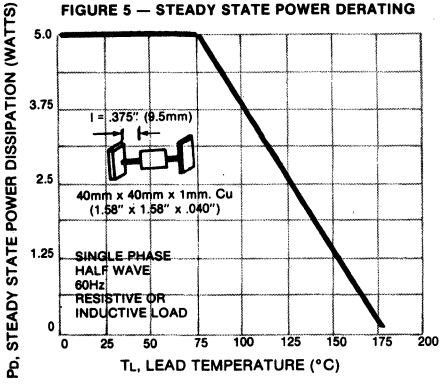
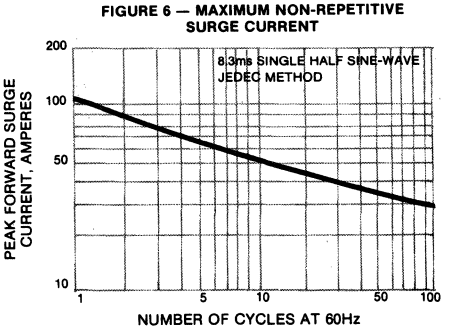


FIGURE 6 — MAXIMUM NON-REPETITIVE SURGE CURRENT



APPLICATION NOTES:

Transient Voltage Suppressors may be used at various points in a circuit to provide various degrees of protection. The following is a typical linear power supply with transient voltage suppressor units placed at different points. All provide protection of the load.

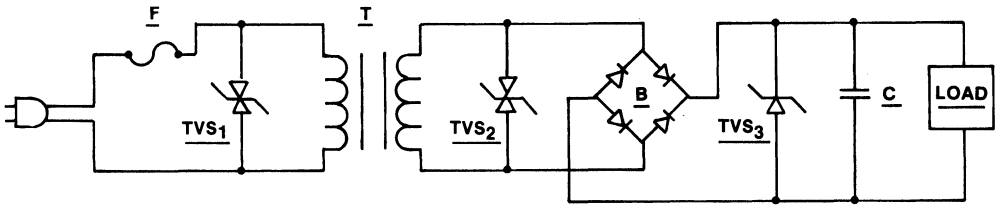


FIGURE 1

Transient Voltage Suppressor 1 provides maximum protection. However, the system will probably require replacement of the line fuse (F) since it provides a dominant portion of the series impedance when a surge is encountered.

Transient Voltage Suppressor 2 provides excellent protection of circuitry excluding the transformer (T). However, since the transformer is a large part of the series impedance, the chance of the line fuse opening during the surge condition is reduced.

Transient Voltage Suppressor 3 provides the load with complete protection. It uses a unidirectional Transient Voltage Suppressor, which is a cost advantage. The series impedance now includes the line fuse, transformer, and bridge rectifier (B) so failure of the line fuse is further reduced. If only Transient Voltage Suppressor 3 is in use, then the bridge rectifier is unprotected and would require a higher voltage and current rating to prevent failure by transients.

Any combination of these three, or any one of these applications, will prevent damage to the load. This would require varying trade-offs in power supply versus protection maintenance (changing the time fuse).

An additional method is to utilize the Transient Voltage Suppressor units as a controlled avalanche bridge. This reduces the parts count and incorporates the protection within the bridge rectifier.

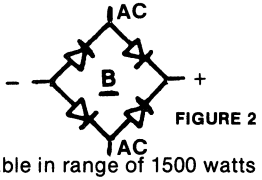


FIGURE 2

Higher wattage ratings are also available in range of 1500 watts (1.5KE Series) and 5000 watts (5KP Series).

For voltage ranges not seen on specification sheet please consult factory or the nearest sales office.

1.5KE SERIES

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

GENERAL INSTRUMENT

VOLTAGE RANGE
6.8 to 400 Volts
1500 Watts Peak Power
5.0 Watts Steady State

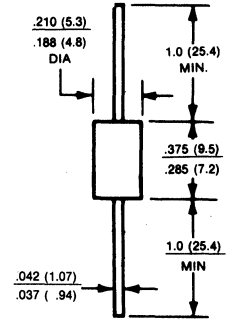
FEATURES

- Plastic package has Underwriters Laboratory Flammability 94V-0.
- Glass passivated junction in DO-201 package
- Exceeds environmental standards of MIL-STD-19500
- 1500W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0ps from 0 volts to BV min.
- Typical I_R less than 1 μA above 10V
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 300°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3 kg) tension

MECHANICAL DATA

Case: Molded plastic over glass passivated junction
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode except Bipolar
Mounting position: Any
Weight: 0.015 ounce, .4 gram

DO-201



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak Power Dissipation at T_A =25°C, Tp = 1ms (Note 1)	Ppk	Minimum 1500	Watts
Steady State Power Dissipation at T_L = 75°C Lead Lengths .375", 9.5mm (Note 2)	PD	5.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (Note 3)	I_{FSM}	200	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	°C

NOTES:
1. Non-repetitive current pulse per Fig. 4 and derated above T_A = 25°C per Fig. 2.
2. Mounted on Copper leaf area of 0.79 in.², 20mm².
3. 8.3ms single half sine-wave, duty cycle = 4 pulses per Minutes maximum.

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types 1.5KE6.8 through types 1.5KE400
Electrical characteristics apply in both directions.

ELECTRICAL CHARACTERISTICS (T_A = 25° C unless otherwise noted)

Device	Breakdown Voltage* VBR (Volts) (Note 1) Min	Max	@ IT (mA)	Working Peak Reverse Voltage VRWM (Volts)	Maximum Reverse Leakage at VRWM IR (μA)	Maximum Reverse Surge Current IRSM (Note 2) (Amps)	Maximum Reverse Voltage at IRSM (Clamping Voltage) VRSM (Volts)	Maximum Temperature Coefficient of VBR (%/° C)
1.5KE6.8	6.12	7.48	10	5.50	1000	139	10.8	0.057
1.5KE6.8A	6.45	7.14	10	5.80	1000	143	10,5	0.057
1.5KE7.5	6.75	8.25	10	6.05	500	128	11.7	0.061
1.5KE7.5A	7.13	7.88	10	6.40	500	132	11.3	0.061
1.5KE8.2	7.38	9.02	10	6.63	200	120	12.5	0.065
1.5KE8.2A	7.79	9.61	10	7.02	200	124	12.1	0.065
1.5KE9.1	8.19	10.0	1.0	7.37	50	109	13.8	0.068
1.5KE9.1A	8.65	9.55	1.0	7.78	50	112	13.4	0.068
1.5KE10	9.00	11	1.0	8.10	10	100	15.0	0.073
1.5KE10A	9.50	10.5	1.0	8.55	10	103	14.5	0.073
1.5KE11	9.90	12.1	1.0	8.92	5.0	93.0	16.2	0.075
1.5KE11A	10.5	11.6	1.0	9.40	5.0	96.0	15.6	0.075
1.5KE12	10.8	13.2	1.0	9.72	5.0	87.0	17.3	0.076
1.5KE12A	11.4	12.6	1.0	10.2	5.0	90.0	16.7	0.078
1.5KE13	11.7	14.3	1.0	10.5	5.0	79.0	19.0	0.081
1.5KE13A	12.4	13.7	1.0	11.1	5.0	82.0	18.2	0.081
1.5KE15	13.5	16.5	1.0	12.1	5.0	68.0	22.0	0.084
1.5KE15A	14.3	15.8	1.0	12.8	5.0	71.0	21.2	0.084
1.5KE16	14.4	17.6	1.0	12.9	5.0	64.0	23.5	0.086
1.5KE16A	15.2	16.8	1.0	13.6	5.0	67.0	22.5	0.086
1.5KE18	16.2	19.8	1.0	14.5	5.0	56.5	26.5	0.088
1.5KE18A	17.1	18.9	1.0	15.3	5.0	59.5	26.2	0.088
1.5KE20	18.0	22.0	1.0	16.2	5.0	51.5	29.1	0.090
1.5KE20A	19.0	21.0	1.0	17.1	5.0	54.0	27.7	0.090
1.5KE22	19.8	24.2	1.0	17.8	5.0	47.0	31.9	0.092
1.5KE22A	20.9	23.1	1.0	18.8	5.0	49.0	30.6	0.092
1.5KE24	21.6	26.4	1.0	19.4	5.0	43.0	34.7	0.094
1.5KE24A	22.8	25.2	1.0	20.5	5.0	45.0	33.2	0.094
1.5KE27	24.3	29.7	1.0	21.8	5.0	38.5	39.1	0.096
1.5KE27A	25.7	28.4	1.0	23.1	5.0	40.0	37.5	0.096
1.5KE30	27.0	33.0	1.0	24.3	5.0	34.5	43.5	0.097
1.5KE30A	28.5	31.5	1.0	25.6	5.0	36.0	41.4	0.097
1.5KE33	29.7	36.3	1.0	26.8	5.0	31.5	47.7	0.098
1.5KE33A	31.4	34.7	1.0	28.2	5.0	33.0	45.7	0.098
1.5KE36	32.4	39.6	1.0	29.1	5.0	29.0	52.0	0.099
1.5KE36A	34.2	37.8	1.0	30.8	5.0	30.0	49.9	0.099
1.5KE39	35.1	42.9	1.0	31.6	5.0	26.5	56.4	0.100
1.5KE39A	37.1	41.0	1.0	33.3	5.0	28.0	53.9	0.100
1.5KE43	38.7	47.3	1.0	34.8	5.0	24.0	61.9	0.101
1.5KE43A	40.9	45.2	1.0	36.8	5.0	25.3	59.3	0.101
1.5KE47	42.3	51.7	1.0	38.1	5.0	22.2	67.8	0.101
1.5KE47A	44.7	49.4	1.0	40.2	5.0	23.2	64.8	0.101
1.5KE51	45.9	56.1	1.0	41.3	5.0	20.4	73.5	0.102
1.5KE51A	48.5	53.6	1.0	43.6	5.0	21.4	70.1	0.102
1.5KE56	50.4	61.6	1.0	45.4	5.0	18.6	80.5	0.103
1.5KE56A	53.2	58.8	1.0	47.8	5.0	19.5	77.0	0.103
1.5KE62	55.8	68.2	1.0	50.2	5.0	16.9	89.0	0.104
1.5KE62A	58.9	65.1	1.0	53.0	5.0	17.7	85.0	0.104
1.5KE68	61.2	74.8	1.0	55.1	5.0	15.3	98.0	0.104
1.5KE68A	64.6	71.4	1.0	58.1	5.0	16.3	92.0	0.104
1.5KE75	67.5	82.5	1.0	60.7	5.0	13.9	108.9	0.105
1.5KE75A	71.3	78.8	1.0	64.1	5.0	14.6	103.0	0.105
1.5KE82	73.8	90.2	1.0	66.4	5.0	12.7	118.0	0.105
1.5KE82A	77.9	86.1	1.0	70.1	5.0	13.3	113.0	0.105
1.5KE91	81.9	100.0	1.0	73.7	5.0	11.4	131.0	0.106
1.5KE91A	86.5	95.50	1.0	77.8	5.0	12.0	125.0	0.106
1.5KE100	90.0	110.0	1.0	81.0	5.0	10.4	144.0	0.106
1.5KE100A	95.0	105.0	1.0	85.5	5.0	11.0	137.0	0.106
1.5KE110	99.0	121.0	1.0	89.2	5.0	9.5	158.0	0.107
1.5KE110A	105.0	116.0	1.0	94.0	5.0	9.9	152.0	0.107
1.5KE120	108.0	132.0	1.0	97.2	5.0	8.7	173.0	0.107
1.5KE120A	114.0	126.0	1.0	102.0	5.0	9.1	165.0	0.107
1.5KE130	117.0	143.0	1.0	106.0	5.0	8.0	187.0	0.107
1.5KE130A	124.0	137.0	1.0	111.0	5.0	8.4	179.0	0.107
1.5KE150	135.0	165.0	1.0	121.0	5.0	7.0	215.0	0.108
1.5KE150A	143.0	158.0	1.0	128.0	5.0	7.2	207.0	0.108
1.5KE160	144.0	176.0	1.0	130.0	5.0	6.5	230.0	0.108
1.5KE160A	152.0	168.0	1.0	136.0	5.0	6.8	219.0	0.108
1.5KE170	153.0	187.0	1.0	138.0	5.0	6.2	244.0	0.108
1.5KE170A	162.0	179.0	1.0	145.0	5.0	6.4	234.0	0.108
1.5KE180	162.0	198.0	1.0	146.0	5.0	5.8	258.0	0.108
1.5KE180A	171.0	189.0	1.0	154.0	5.0	6.1	246.0	0.108
1.5KE200	180.0	220.0	1.0	162.0	5.0	5.2	287.0	0.108
1.5KE200A	190.0	210.0	1.0	171.0	5.0	5.5	274.0	0.108
1.5KE220	198.0	242.0	1.0	175.0	5.0	4.3	344.0	0.108
1.5KE220A	209.0	231.0	1.0	185.0	5.0	4.6	328.0	0.108
1.5KE250	225.0	275.0	1.0	202.0	5.0	4.17	360.0	0.110
1.5KE250A	237.0	263.0	1.0	214.0	5.0	4.37	344.0	0.110
1.5KE300	270.0	330.0	1.0	243.0	5.0	3.38	430.0	0.110
1.5KE300A	285.0	315.0	1.0	256.0	5.0	3.58	414.0	0.110
1.5KE350	315.0	385.0	1.0	284.0	5.0	2.98	504.0	0.110
1.5KE350A	333.0	368.0	1.0	300.0	4.0	3.08	482.0	0.110
1.5KE400	360.0	440.0	1.0	324.0	4.0	2.58	574.0	0.110
1.5KE400A	380.0	420.0	1.0	342.0	4.0	2.78	548.0	0.110

NOTES:
1. VBR measured after IT applied for 300 μs. IT = Square Wave Pulse or eqivalent.
2. Surge current Waveform per Figure 3 and Derate per Figure 2.
3. VF = 3.5V max, IF = 100A for all types per 1/2 Square or Equivalent Sine Wave.
PW = 8.3ms, Duty Cycle = 4 Pulses per Minute Maximum.

FIGURE 1 — PULSE RATING CURVE

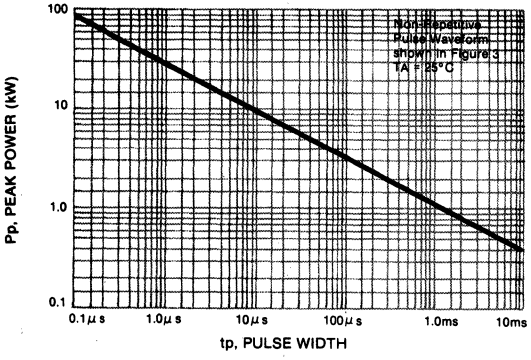


FIGURE 2 — PULSE DERATING CURVE

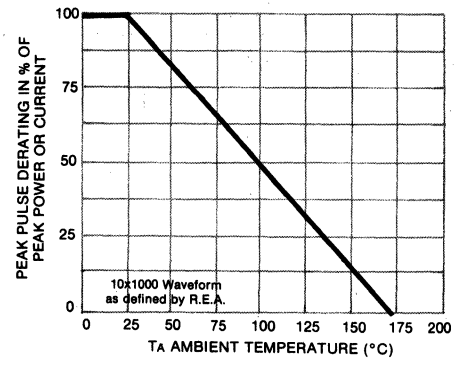


FIGURE 3 — PULSE WAVEFORM

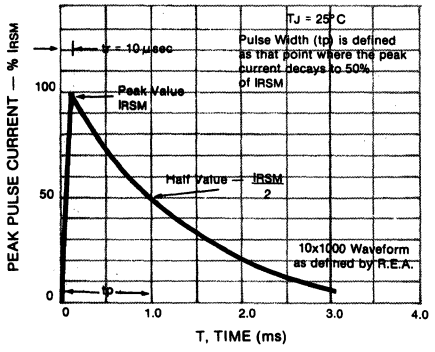


FIGURE 4 — TYPICAL JUNCTION CAPACITANCE

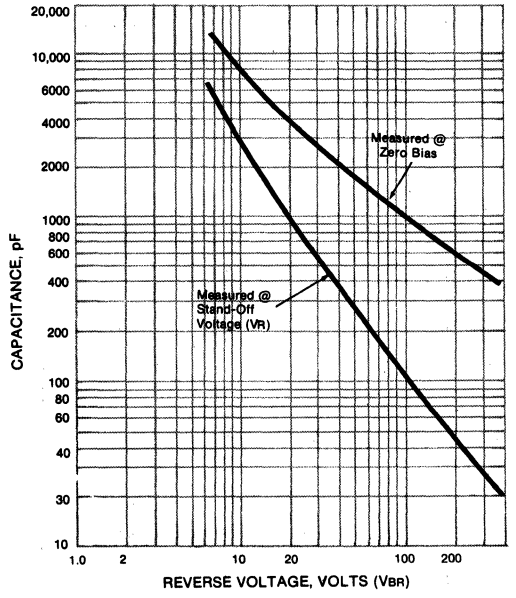


FIGURE 5 — STEADY STATE POWER DERATING

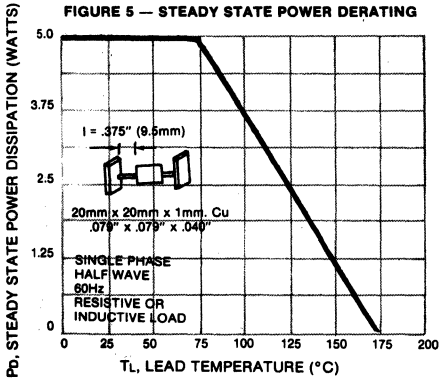
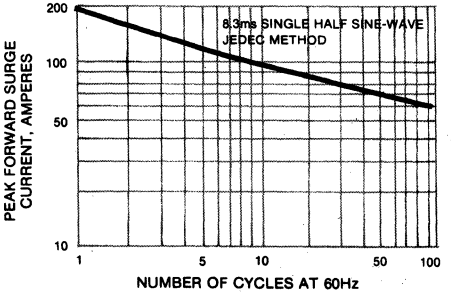


FIGURE 6 — MAXIMUM NON-REPETITIVE SURGE CURRENT



APPLICATION NOTES:

Transient Voltage Suppressors may be used at various points in a circuit to provide various degrees of protection. The following is a typical linear power supply with transient voltage suppressor units placed at different points. All provide protection of the load.

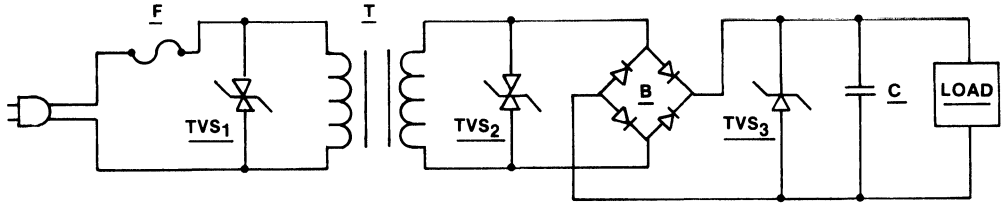


FIGURE 1

Transient Voltage Suppressor 1 provides maximum protection. However, the system will probably require replacement of the line fuse (F) since it provides a dominant portion of the series impedance when a surge is encountered.

Transient Voltage Suppressor 2 provides excellent protection of circuitry excluding the transformer (T). However, since the transformer is a large part of the series impedance, the chance of the line fuse opening during the surge condition is reduced.

Transient Voltage Suppressor 3 provides the load with complete protection. It uses a unidirectional Transient Voltage Suppressor, which is a cost advantage. The series impedance now includes the line fuse, transformer, and bridge rectifier (B) so failure of the line fuse is further reduced. If only Transient Voltage Suppressor 3 is in use, then the bridge rectifier is unprotected and would require a higher voltage and current rating to prevent failure by transients.

Any combination of these three, or any one of these applications, will prevent damage to the load. This would require varying trade-offs in power supply versus protection maintenance (changing the time fuse).

An additional method is to utilize the Transient Voltage Suppressor units as a controlled avalanche bridge. This reduces the parts count and incorporates the protection within the bridge rectifier.

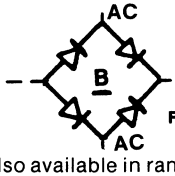


FIGURE 2

Higher and lower wattage ratings are also available in range of 5000 watts (5KP Series) and 600 watts (P6KE Series).

For voltage ranges not seen on specification sheet please consult factory or the nearest sales office.

5KP SERIES

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

GENERAL INSTRUMENT

VOLTAGE RANGE
5.0 to 110 Volts

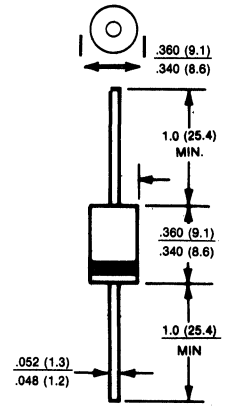
5000 Watts Peak Power
5.0 Watts Steady State

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Glass passivated junction in molded plastic package
- Exceeds environmental standards MIL-STD-19500
- 5000W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0ps from 0 volts to BV min.
- Typical I_R less than 1μA above 10V
- Exceeds environmental standards of MIL-STD-19500
- High temperature soldering guaranteed: 300°C/10 seconds/.375", (9.5mm) lead length/5 lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic over glass
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode except Bipolar
Mounting position: Any
Weight: 0.07 ounce, 2.1 grams



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak Pulse Power dissipation at T_A = 25°C, Tp = 1ms (Note 1)	Ppk	Minimum 5000	Watts
Steady State Power Dissipation at T_L = 25°C Lead Lengths .375", 9.5mm (Note 2)	PD	5.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (Note 3)	I_{FSM}	400	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-55°C to +175	°C

NOTES:
1. Non-repetitive current pulse per Fig. 4 and derated above T_A = 25°C per Fig. 2.
2. Mounted on Copper Leaf area of 0.79 in.², 20mm².
3. 8.3ms single half sine-wave, duty cycle = 4 pulses per Minutes maximum.

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types 5KP5.0 through types 5KP110.
Electrical characteristics apply in both directions.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Device	Breakdown Voltage V_{BR} (Volts) (Note 1) Min	Max	@ I_T (mA)	Working Peak Reverse Voltage V_{RWM} (Volts)	Maximum Reverse Leakage @ V_{RWM} I_R (μA)	Maximum Reverse Surge Current I_{RSM} (Note 2) (Amps)	Maximum Reverse Voltage @ I_{RSM} (Clamping Voltage) V_{RSM} (Volts)	Maximum Temperature Coefficient of V_{BR} (%/°C)
5KP5.0	6.40	7.30	50	5.0	2000	520	9.6	0.057
5KP5.0A	6.40	7.00	50	5.0	2000	543	9.2	0.057
5KP6.0	6.67	8.15	50	6.0	5000	439	11.4	0.061
5KP6.0A	6.67	7.37	50	6.0	5000	485	10.3	0.061
5KP6.5	7.22	8.82	50	6.5	2000	407	12.3	0.065
5KP6.5A	7.22	7.98	50	6.5	2000	447	11.2	0.065
5KP7.0	7.78	9.51	50	7.0	1000	378	13.3	0.068
5KP7.0A	7.78	8.60	50	7.0	1000	417	12.0	0.068
5KP7.5	8.33	10.2	5.0	7.5	250	350	14.3	0.073
5KP7.5A	8.33	9.21	5.0	7.5	250	388	12.9	0.073
5KP8.0	8.89	10.9	5.0	8.0	150	333	15.0	0.075
5KP8.0A	8.89	9.83	5.0	8.0	150	367	13.6	0.075
5KP8.5	9.44	11.5	5.0	8.5	50	314	15.9	0.078
5KP8.5A	9.44	10.4	5.0	8.5	50	347	14.4	0.078
5KP9.0	10.0	12.2	5.0	9.0	20	295	16.9	0.081
5KP9.0A	10.0	11.1	5.0	9.0	20	325	15.4	0.081
5KP10	11.1	13.6	5.0	10.0	15	266	18.8	0.084
5KP10A	11.1	12.3	5.0	10.0	15	294	17.0	0.084
5KP11	12.2	14.9	5.0	11.0	10	249	20.1	0.086
5KP11A	12.2	13.5	5.0	11.0	10	274	18.2	0.086
5KP12	13.3	16.3	5.0	12.0	10	227	22.0	0.088
5KP12A	13.3	14.7	5.0	12.0	10	251	19.9	0.088
5KP13	14.4	17.6	5.0	13.0	10	210	23.8	0.090
5KP13A	14.4	15.9	5.0	13.0	10	232	21.5	0.090
5KP14	15.6	19.1	5.0	14.0	10	194	25.8	0.092
5KP14A	15.6	17.2	5.0	14.0	10	215	23.2	0.092
5KP15	16.7	20.4	5.0	15.0	10	188	26.9	0.094
5KP15A	16.7	18.5	5.0	15.0	10	206	24.4	0.094
5KP16	17.8	21.8	5.0	16.0	10	176	28.8	0.096
5KP16A	17.8	19.7	5.0	16.0	10	192	26.0	0.096
5KP17	18.9	23.1	5.0	17.0	10	164	30.5	0.097
5KP17A	18.9	20.9	5.0	17.0	10	181	27.6	0.097
5KP18	20.0	24.4	5.0	18.0	10	155	32.2	0.098
5KP18A	20.0	22.1	5.0	18.0	10	172	29.2	0.098
5KP20	22.2	27.1	5.0	20.0	10	139	35.8	0.099
5KP20A	22.2	24.5	5.0	20.0	10	154	32.4	0.099
5KP22	24.4	29.8	5.0	22.0	10	127	39.4	0.100
5KP22A	24.4	26.9	5.0	22.0	10	141	35.5	0.100
5KP24	26.7	32.6	5.0	24.0	10	116	43.0	0.101
5KP24A	26.7	29.5	5.0	24.0	10	128	38.9	0.101
5KP26	28.9	35.3	5.0	26.0	10	107	46.6	0.101
5KP26A	28.9	31.9	5.0	26.0	10	119	42.1	0.101
5KP28	31.1	38.0	5.0	28.0	10	99	50.1	0.102
5KP28A	31.1	34.4	5.0	28.0	10	110	45.4	0.102
5KP30	33.3	40.7	5.0	30.0	10	93	53.5	0.103
5KP30A	33.3	36.8	5.0	30.0	10	103	48.4	0.103
5KP33	36.7	44.9	5.0	33.0	10	85	59.0	0.104
5KP33A	36.7	40.6	5.0	33.0	10	94	53.3	0.104
5KP36	40.0	48.9	5.0	36.0	10	78	64.3	0.104
5KP36A	40.0	44.2	5.0	36.0	10	86	58.1	0.104
5KP40	44.4	54.3	5.0	40.0	10	70	71.4	0.105
5KP40A	44.4	49.1	5.0	40.0	10	78	64.5	0.105
5KP43	47.8	58.4	5.0	43.0	10	65	76.7	0.105
5KP43A	47.8	52.8	5.0	43.0	10	72	69.4	0.105
5KP45	50.0	61.1	5.0	45.0	10	62	80.3	0.106
5KP45A	50.0	55.3	5.0	45.0	10	69	72.7	0.106
5KP48	53.3	65.1	5.0	48.0	10	58	85.5	0.106
5KP48A	53.3	58.9	5.0	48.0	10	65	77.4	0.106
5KP51	56.7	69.3	5.0	51.0	10	55	91.1	0.107
5KP51A	56.7	62.7	5.0	51.0	10	61	82.4	0.107
5KP54	60.0	73.3	5.0	54.0	10	52	96.3	0.107
5KP54A	60.0	66.3	5.0	54.0	10	57	87.1	0.107
5KP58	64.4	78.7	5.0	58.0	10	49	103.0	0.107
5KP58A	64.4	71.2	5.0	58.0	10	53	93.6	0.107
5KP60	66.7	81.5	5.0	60.0	10	47	107.0	0.108
5KP60A	66.7	73.7	5.0	60.0	10	52	96.8	0.108
5KP64	71.1	86.9	5.0	64.0	10	44	114.0	0.108
5KP64A	71.1	78.6	5.0	64.0	10	49	103.0	0.108
5KP70	77.8	95.1	5.0	70.0	10	40	125.0	0.108
5KP70A	77.8	86.0	5.0	70.0	10	44	113.0	0.108
5KP75	83.3	102.0	5.0	75.0	10	37	134.0	0.108
5KP75A	83.3	92.1	5.0	75.0	10	41	121.0	0.108
5KP78	86.7	106.0	5.0	78.0	10	36	139.0	0.108
5KP78A	86.7	95.8	5.0	78.0	10	40	126.0	0.108
5KP85	94.4	115.0	5.0	85.0	10	33	151.0	0.108
5KP85A	94.4	104.0	5.0	85.0	10	36	137.0	0.110
5KP90	100	122.0	5.0	90.0	10	31	160.0	0.110
5KP90A	100	111.0	5.0	90.0	10	34	146.0	0.110
5KP100	111	136.0	5.0	100.0	10	28	179.0	0.110
5KP100A	111	123.0	5.0	100.0	10	31	162.0	0.110
5KP110	122	149.0	5.0	110.0	10	26	196.0	0.112
5KP110A	122	135.0	5.0	110.0	10	28	177.0	0.112

NOTES:
1. V_{BR} measured after I_T applied for 300μs, I_T = Square Wave Pulse or equivalent.
2. Surge Current waveform per Figure 3 and Derate per Figure 2.
3. V_F = 3.5 Volts max IF = 100A for all types on 1/2 square or Equivalent Sine Wave, PW = 8.3ms, Duty Cycle = 4 Pulse per Minute maximum.

FIGURE 1 — PULSE RATING CURVE

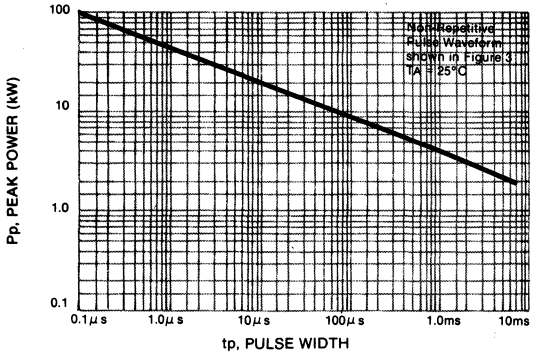


FIGURE 2 — PULSE DERATING CURVE

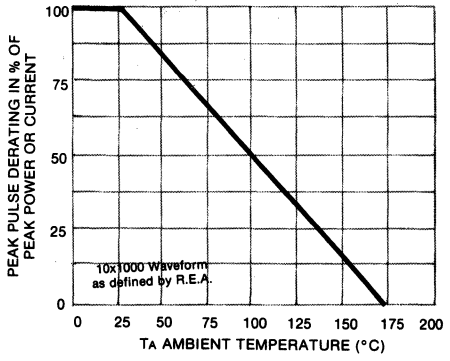


FIGURE 3 — PULSE WAVEFORM

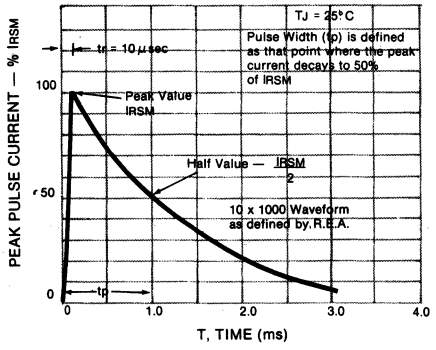


FIGURE 4 — TYPICAL JUNCTION CAPACITANCE

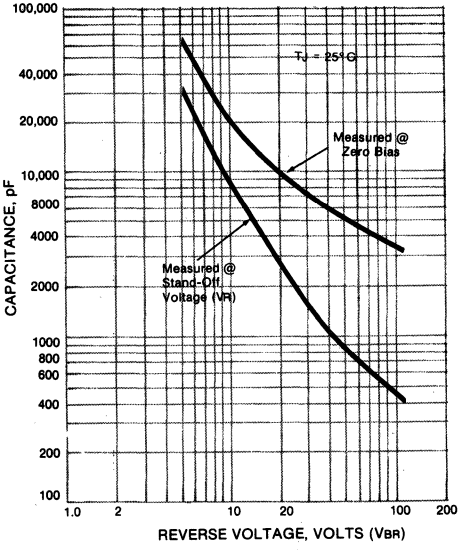


FIGURE 5 — STEADY STATE POWER DERATING

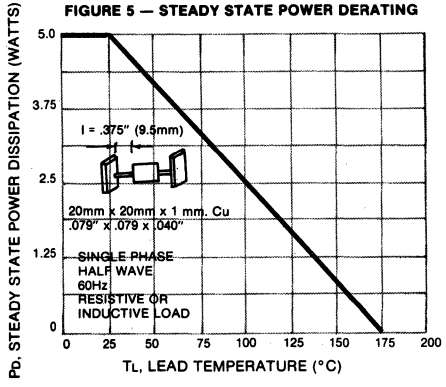
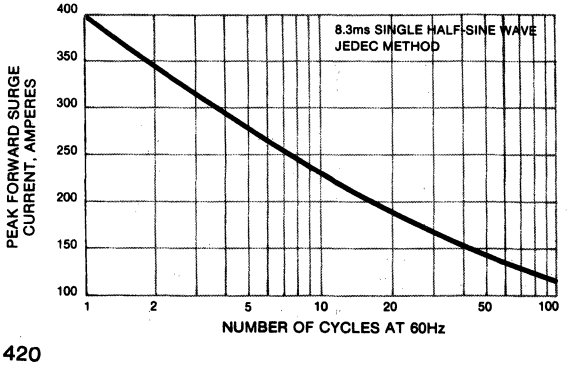


FIGURE 6 — MAXIMUM NON-REPETITIVE SURGE CURRENT



APPLICATION NOTES:

Transient Voltage Suppressors may be used at various points in a circuit to provide various degrees of protection. The following is a typical linear power supply with transient voltage suppressor units placed at different points. All provide protection of the load.

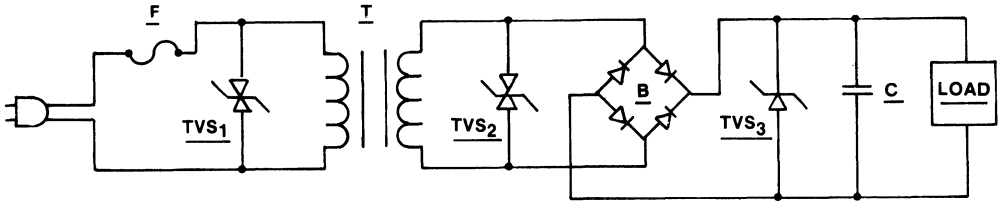


FIGURE 1

Transient Voltage Suppressor 1 provides maximum protection. However, the system will probably require replacement of the line fuse (F) since it provides a dominant portion of the series impedance when a surge is encountered.

Transient Voltage Suppressor 2 provides excellent protection of circuitry excluding the transformer (T). However, since the transformer is a large part of the series impedance, the chance of the line fuse opening during the surge condition is reduced.

Transient Voltage Suppressor 3 provides the load with complete protection. It uses a unidirectional Transient Voltage Suppressor, which is a cost advantage. The series impedance now includes the line fuse, transformer, and bridge rectifier (B) so failure of the line fuse is further reduced. If only Transient Voltage Suppressor 3 is in use, then the bridge rectifier is unprotected and would require a higher voltage and current rating to prevent failure by transients.

Any combination of these three, or any one of these applications, will prevent damage to the load. This would require varying trade-offs in power supply versus protection maintenance (changing the time fuse).

An additional method is to utilize the Transient Voltage Suppressor units as a controlled avalanche bridge. This reduces the parts count and incorporates the protection within the bridge rectifier.

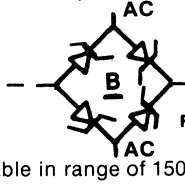


FIGURE 2

Lower wattage ratings are also available in range of 1500 watts (1.5KE Series) and 600 watts (P6KE Series).

For voltage ranges not seen on specification sheet please consult factory or the nearest sales office.

POWER MOSFETS 40-125 WATTS

General Instrument YMOS Power Mosfets

This series of devices range in voltage from 60 to 150 volts BVDSS. On-Resistance values from 40 TO 800 milliohms are readily available.

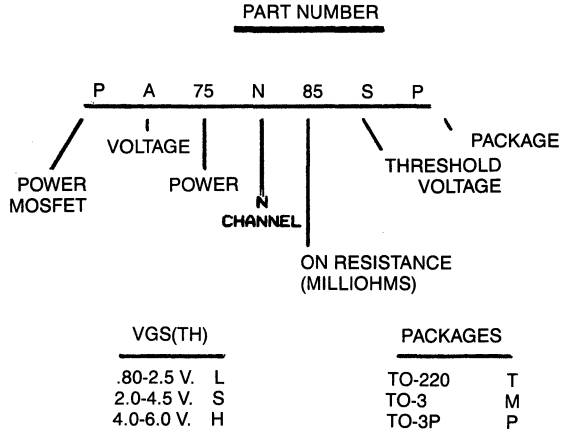
This voltage and on-resistance range is covered by three chip sizes: 40 Watt, 75 Watt, and 125 Watt.

Three package styles are available: TO-220, TO-3, and TO-3P. In addition, the chips are available for power hybrid applications.

General Instrument also offers a low, standard, and high threshold version of the complete Power MOSFET Line. Excellent suppression of the Parasitic Transistor and an exceptionally fast integral diode with low Vf drop make General Instrument Power MOSFETS ideal for DC to DC Converters; motor drives, and solid state switches.

For more information, call the MOSFET hotline at: 516-933-3242.

POWER WATTS	A 60 V		B 100 V		C 150 V	
	RDS (ON) MILLIOHMS					
40	200	300	280	400	500	800
75	85	150	140	180	250	400
125	40	60	60	80	130	180



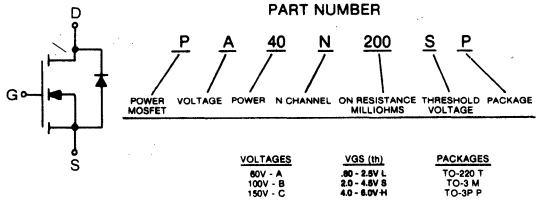
GENERAL INSTRUMENT CORPORATION
POWER SEMICONDUCTOR DIVISION

40 WATT MOSFET
YMOS POWER TRANSISTORS

DESCRIPTION

YMOS Power Transistors represent the State of the art in low voltage, low On Resistance Power MOS FET technology. This unique patented mesh gate topology produces a device with a low percentage change in On Resistance versus temperature (% $R_{DS(on)}$/°C).

Along with the standard features of Power MOS FET Transistors, the YMOS Process allows the user to select the range of threshold voltage which is most compatible with the device application.



FEATURES

- Fastest t_{rr} of source-drain rectifier: 125 nsec
- I_{DSS} specified at T_J = 150°C
- Reduced temperature coefficient of $R_{DS(on)}$: 40%/°C, Typical
- Extremely low reverse transfer capacitance
- Low output capacitance
- Low drive current combined with fast switching
- Characterized for use with inductive loads
- No second breakdown

APPLICATIONS

- DC to DC converter
- Motor controls
- Hammer drivers.
- Constant current sources.
- Solid state relays.
- Switching power supplies.

MAXIMUM RATINGS AT Tc = 25° C

PARAMETER	PA40N200	PA40N300	PB40N280	PB40N400	PC40N500	PC40N800	UNITS
V_{DS} Drain-Source	60	60	100	100	150	150	V
V_{DGR} Drain-Gate Voltage (R_{GS} = 1KΩ)	60	60	100	100	150	150	V
I_D Continuous Drain Current	11	9	9	7	7	5	A
I_{DM} Pulsed Drain Current	22	18	18	14	14	10	A
V_{GS} Gate-Source Voltage	±20						V
P_D Max Power Dissipation	40						W
Linear Derating Factor	.32						W/°C
I_{LM} Clamped Inductive Current See Fig. 1 & 2	22	18	18	14	14	10	A
T_J, Tstg Operating and Storage Temperature Range	-55 to 150						°C
T_L Max Lead Temperature 1.6mm from case, 10 sec	300						°C

40 WATT MOSFET
YMOS POWER TRANSISTORS

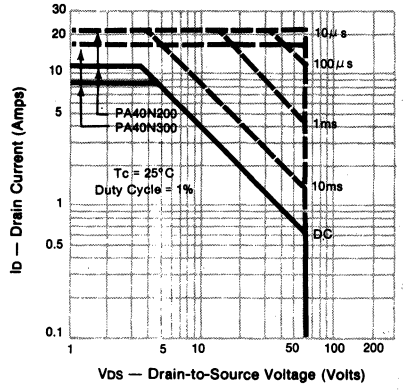
ELECTRICAL CHARACTERISTICS (Tc = 25°C unless otherwise noted)

PARAMETER	TYPE	MIN	TYP	MAX	UNIT	TEST CONDITIONS
BVDSS Drain-Source Breakdown Voltage	PA40N200, PA40N300	60	—	—	V	VGS = 0V, IDSS = .25mA
	PB40N280, PB40N400	100	—	—		
	PC40N500, PC40N800	150	—	—		
IDSS Zero Gate Voltage Drain Current	ALL	—	—	.25	mA	VDS = Max Rating, VGS = 0V, TJ = 25°C
	ALL	—	—	1.0	mA	VDS = Max Rating, VGS = 0V, TJ = 150°C
IGSS Gate-Source Leakage Current	ALL	—	—	100	nA	VGS = 20V
VGS(th) Gate Threshold Voltage	L	.25	—	2.5	V	VDS = VGS, ID = 5mA
	S	1.0	—	4.5		
	H	4.0	—	6.0		
Static Drain-Source RDS (on) On-Resistance*	PA40N200	—	—	.200	Ω	VGS = 10V, ID = 2.5A (Note 2)
	PA40N300	—	—	.300		
	PB40N280	—	—	.280		
	PB40N400	—	—	.400		
	PC40N500	—	—	.500		
	PC40N800	—	—	.800		
ID (on) On-State Drain Current*	PA40N200	9	14	—	A	VGS = 10V, VDS = 20V (Note 2)
	PA40N300	8	12	—		
	PB40N280	8	13	—		
	PB40N400	7	10	—		
	PC40N500	6	9	—		
	PC40N800	5	7	—		
gfs Forward Transconductance*	ALL	—	2.0	—	Ʊ	VDS = 10V, ID = 2.5A
Ciss Input Capacitance (Note 1)	ALL	—	900	—	pF	VDS = 25V
Coss Output Capacitance	ALL	—	85	—	pF	VGS = 0V
Crss Reverse Transfer Capacitance	ALL	—	20	—	pF	f = 1MHz
td (on) Turn-on Delay Time	ALL	—	35	—	ns	VDD = 25V
tr Rise Time	ALL	—	58	—	ns	VGS = 12V
td (off) Turn-off Delay Time	ALL	—	50	—	ns	ID = 4A
tr Fall Time	ALL	—	45	—	ns	see fig. 5 & 6
Rojc Thermal Resistance Junction-to-case	ALL	—	—	3.12	°C/W	
Gate Charge (TO 10V) VGS	PA40N200, PA40N300	—	15	—	nc	ID = 2A
	PB40N280, PB40N400	—	16	—		
	PC40N500, PC40N800	—	17	—		BVDS = .5 BVDSS
Gate Charge Figure of Merit	PA40N200	—	3	—	nvs	GCFM = RDS(on) (Gate Charge to 10V)
	PA40N300	—	5	—		
	PB40N280	—	5	—		
	PB40N400	—	7	—		
	PC40N500	—	9	—		
	PC40N800	—	14	—		

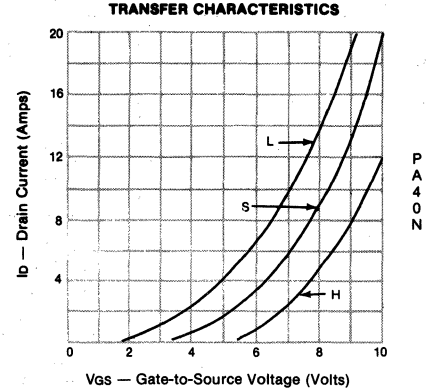
Specifications subject to change without notice.

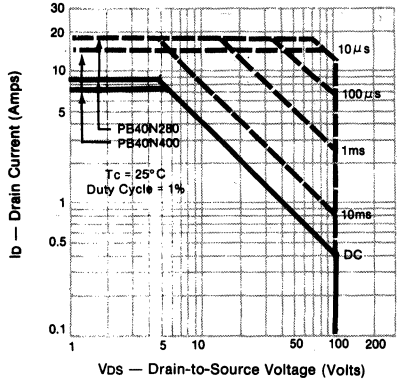
TYPICAL CHARACTERISTICS AT Tc = 25°C

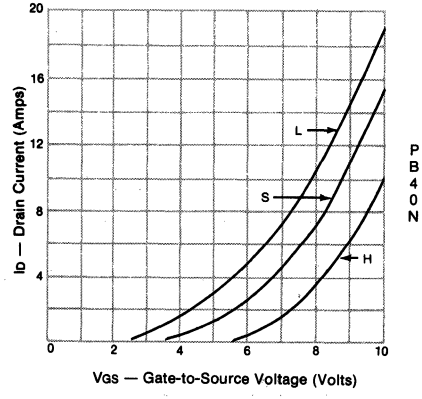
SAFE OPERATING AREA

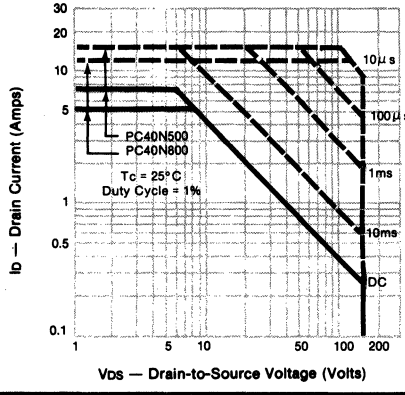


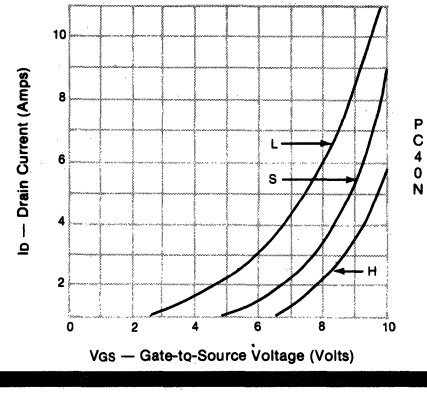
TRANSFER CHARACTERISTICS



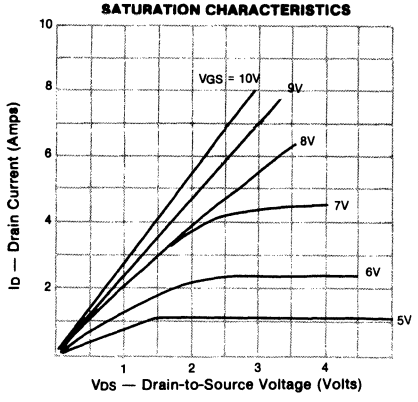




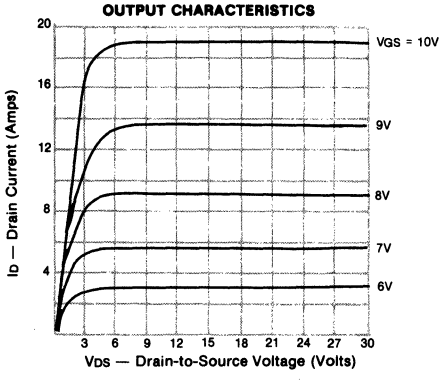


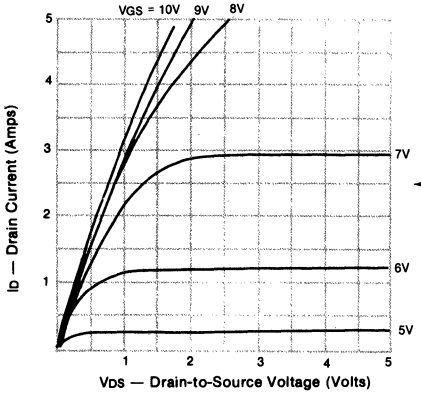


40 WATT MOSFET
YMOS POWER TRANSISTORS

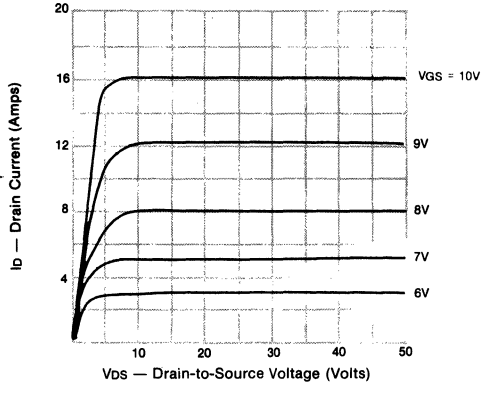


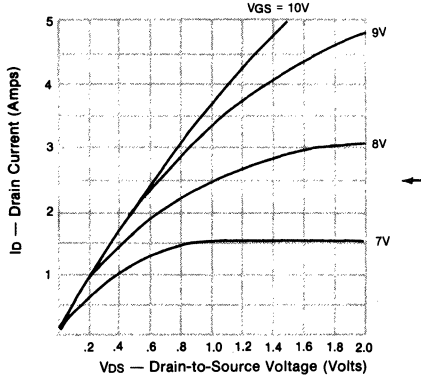
PA40N



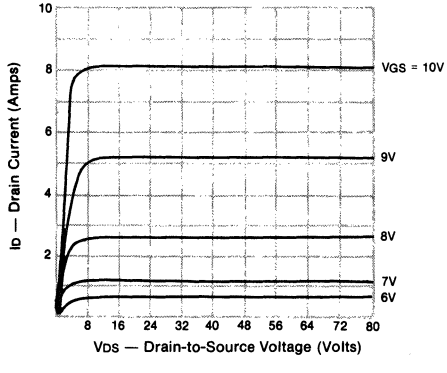


PB40N





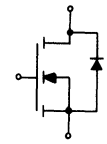
PC40N



40 WATT MOSFET
YMOS POWER TRANSISTORS

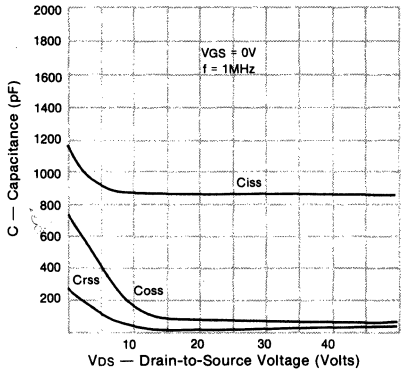
SOURCE — DRAIN DIODE RATINGS AND CHARACTERISTICS

PARAMETERS	TYPE	MIN	TYP	MAX	UNIT	TEST CONDITIONS
I_{DR} Continuous Reverse Drain Current	PA40N200	—	—	11	A	Modified MOSFET Symbol showing
	PA40N300	—	—	9		
	PB40N280	—	—	10.9		Reverse P-N Diode
	PB40N400	—	—	7		
	PC40N500	—	—	7		
	PC40N800	—	—	5		
I_{DRM} Pulsed Reverse Drain Current	PA40N200	—	—	22	A	
	PA40N300	—	—	18		
	PB40N280	—	—	18		
	PB40N400	—	—	14		
	PC40N500	—	—	14		
	PC40N800	—	—	10		
V_{SD} Forward Diode Voltage	ALL	—	1.2	—	V	$I_S = I_{DR}$, $V_{GS} = 0V$
t_{rr} Reverse Recovery Time	ALL	—	125	—	ns	$I_F = I_{DR}$, $di/dt = 10A/\mu s$, see fig. 3 & 4
	ALL	—	165	—	ns	$I_F = I_{DR}$ $di/dt = 10A/\mu s$, $T_J = +150°C$

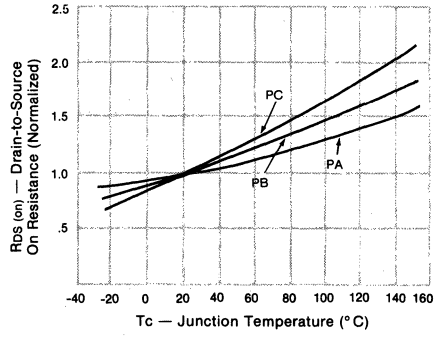


NOTES:
1. The effective input capacitance Cin = Cgs + (1 + |AV|) Cgd for switching applications will be relatively low due to very small value of Cgd.
2. V_{GS} = 12V for PMH parts.
* Pw = 300 μs: Duty Cycle = 2%.

CAPACITANCE



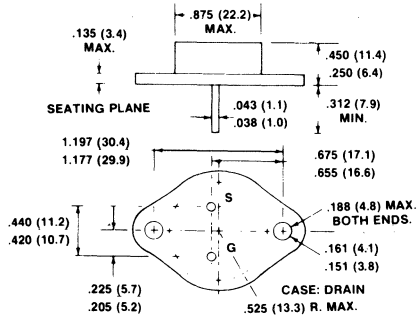
NORMALIZED $R_{DS(on)}$ vs T_C



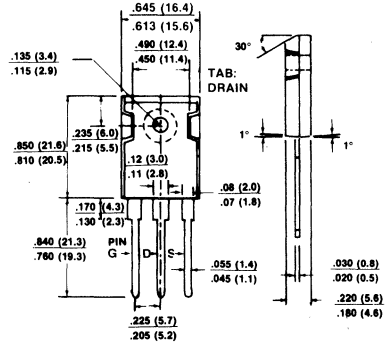
PACKAGE DIAGRAMS

All dimensions in inches and (millimeters)

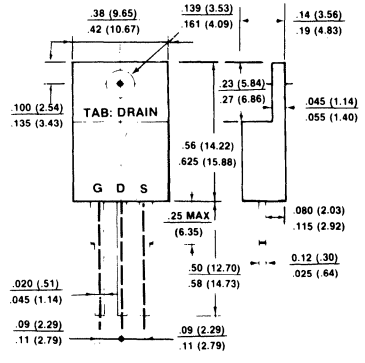
TO-3



TO-3P



TO-220



TEST CIRCUITS AND WAVEFORMS

FIGURE 1 — CLAMPED INDUCTIVE TEST CIRCUIT

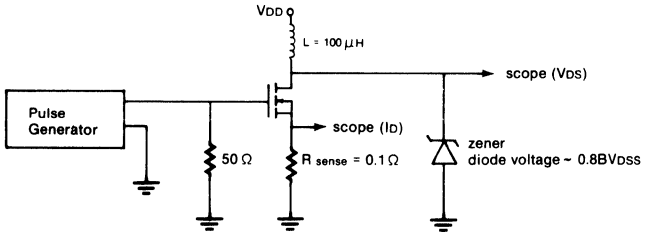


FIGURE 2 — CLAMPED INDUCTIVE WAVEFORM

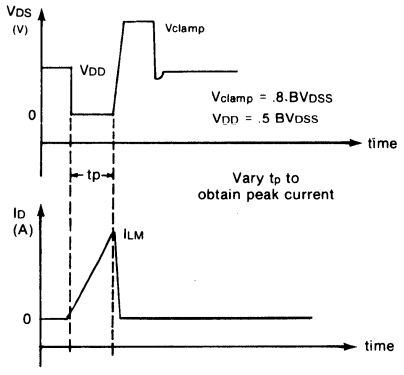


FIGURE 3 — JEDEC REVERSE RECOVERY CIRCUIT

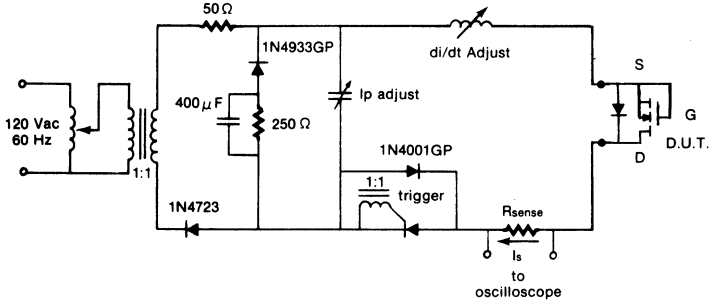


FIGURE 4 — REVERSE RECOVERY WAVEFORM

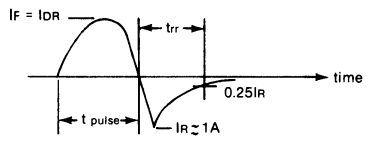


FIGURE 6 — DEFINITION OF SWITCHING TIMES

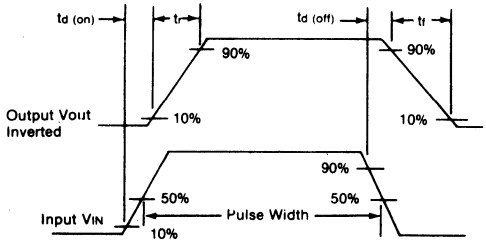


FIGURE 5 — SWITCHING TIME TEST CIRCUIT

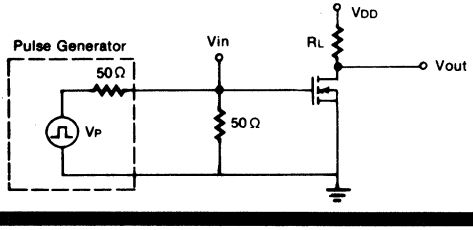
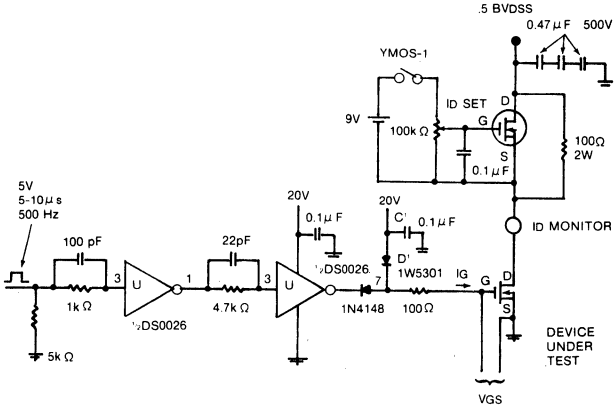


FIGURE 7 — GATE CHARGE CIRCUIT



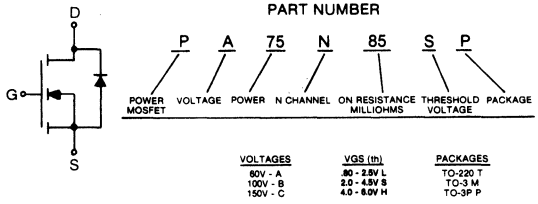
GENERAL INSTRUMENT CORPORATION
POWER SEMICONDUCTOR DIVISION

75 WATT MOSFET
YMOS POWER TRANSISTORS

DESCRIPTION

YMOS Power Transistors represent the State of the art in low voltage, low On Resistance Power MOS FET technology. This unique patented mesh gate topology produces a device with a low percentage change in On Resistance versus temperature (% $R_{DS(on)}$/°C).

Along with the standard features of Power MOS FET Transistors, the YMOS Process allows the user to select the range of threshold voltage which is most compatible with the device application.



FEATURES

- Fastest t_{rr} of source-drain rectifier: 135 nsec
- I_{DSS} specified at T_J = 150°C
- Reduced temperature coefficient of $R_{DS(on)}$: .40%/°C, Typical
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- Low output capacitance
- Low drive current combined with fast switching
- Characterized for use with inductive loads
- No second breakdown

APPLICATIONS

- DC to DC
- Motor controls
- Hammer drivers.
- Constant current sources.
- Solid state relays.
- Switching power supplies.

MAXIMUM RATINGS AT Tc = 25°C

PARAMETER	PA75N85	PA75N120	PA75N150	PB75N140	PB75N180	PC75N250	PC75N400	UNITS
V_{DS} Drain-Source Voltage	60	60	60	100	100	150	150	V
V_{DGR} Drain-Gate Voltage (R_{GS} = 1K)	60	60	60	100	100	150	150	V
I_D Continuous Drain Current	22	20	17	18	16	13	10	A
I_{DM} Pulsed Drain Current	44	40	34	36	32	26	20	A
V_{GS} Gate-Source Voltage	± 20							V
P_D Max Power Dissipation	75							W
Linear Derating Factor	.60							W/°C
I_{LM} Clamped Inductive Current See Fig. 1 & 2	44	40	34	36	32	26	20	A
T_J, Tstg Operating and Storage Temperature Range	-55 to +150							°C
T_L Max Lead Temperature 1.6mm from case, 10 sec	300							°C

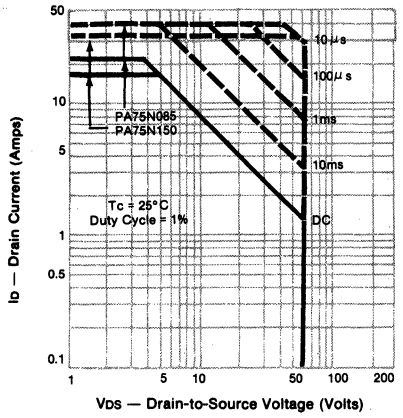
ELECTRICAL CHARACTERISTICS (Tc = 25°C unless otherwise noted)

PARAMETER	TYPE	MIN	TYP	MAX	UNIT	TEST CONDITIONS
BVDSS Drain-Source Breakdown Voltage	PA75N85, 120, 150	60	—	—	V	VGS = 0V, IDSS = .5mA
	PB75N140, PB75N180	100	—	—		
	PC75N250, PC75N400	150	—	—		
IDSS Zero Gate Voltage Drain Current	ALL	—	—	.5	mA	VDS = Max Rating, VGS = 0V, TJ = 25°C
	ALL	—	—	2.0	mA	VDS = Max Rating, VGS = 0V, TJ = 150°C
IGSS Gate-Source Leakage Current	ALL	—	—	100	nA	VGS = 20V
VGS (th) Gate Threshold Voltage	L	.8	—	2.5	V	VDS = VGS, ID = 10mA
	S	2.0	—	4.5		
	H	4.0	—	6.0		
Static Drain-Source RDS(on) On-Resistance*	PA75N85	—	—	.085	Ω	VGS = 10V, ID = 5A (Note 2)
	PA75N120	—	—	.120		
	PA75N150	—	—	.150		
	PB75N140	—	—	.140		
	PB75N180	—	—	.180		
	PC75N250	—	—	.250		
	PC75N400	—	—	.400		
ID (on) On-State Drain Current*	PA75N85	23	35	—	A	VGS 10V, VDS = 20V (Note 2)
	PA75N120	18	26	—		
	PA75N150	15	22	—		
	PB75N140	16	24	—		
	PB75N180	14	21	—		
	PC75N250	10	15	—		
	PC75N400	7	10	—		
gfs Forward Transconductance*	ALL	—	4.0	—	Ծ	VDS = 10V, ID = 5A
Ciss Input Capacitance (Note 1)	ALL	—	1500		pF	VDS = 25V
Coss Output Capacitance	ALL	—	250	—	pF	VGS = 0V
Crss Reverse Transfer Capacitance	ALL	—	40	—	pF	f = 1MHz
td (on) Turn-on Delay Time	ALL	—	40	—	ns	VDD = 25V
tr Rise Time	ALL	—	60	—	ns	VGS = 12V
Td Turn-off Delay Time	ALL	—	70	—	ns	ID = 8A
tf Fall Time	ALL	—	60	—	ns	see fig. 5 & 6
Thermal Resistance Rojc Junction-to-case	ALL	—	—	1.67	°C/W	
Gate Charge (To 10V) VGS	PA75N85, 120, 150	—	27	—	nc	ID = 4A
	PB75N140, PB75N180	—	29	—		
	PC75N250, PC75N400	—	31	—		BVDS = .5 BVDSS
Gate Charge Figure of Merit	PA75N85	—	3	—	nvs	GCFM = (Rds (on)) (Gate Charge to 10V)
	PA75N120	—	4	—		
	PA75N150	—	4	—		
	PB75N140	—	4	—		
	PB75N180	—	6	—		
	PC75N250	—	8	—		
	PC75N400	—	13	—		

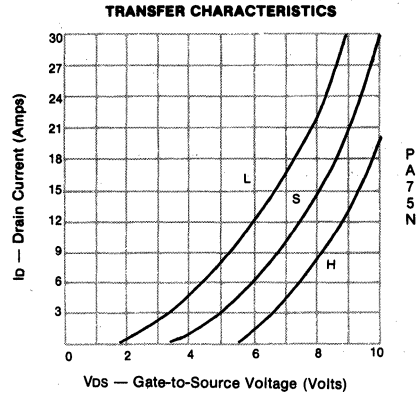
Specification subject to change without notice.

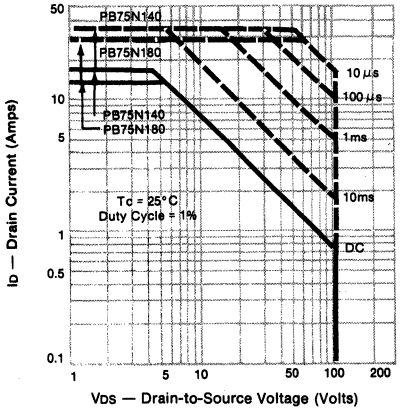
TYPICAL CHARACTERISTICS AT Tc = 25°C

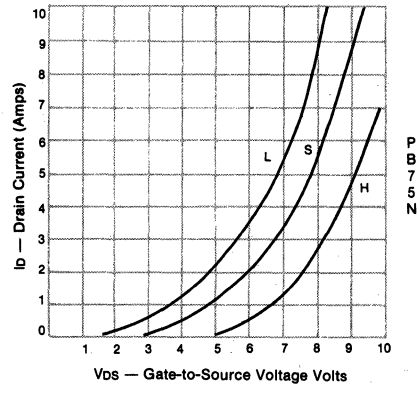
SAFE OPERATING AREA

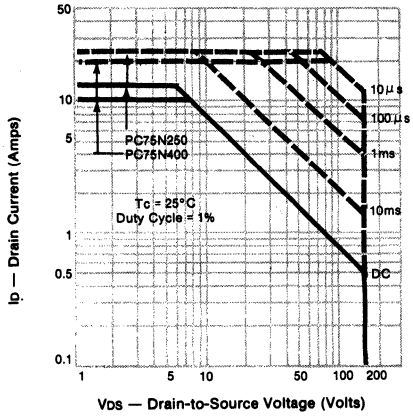


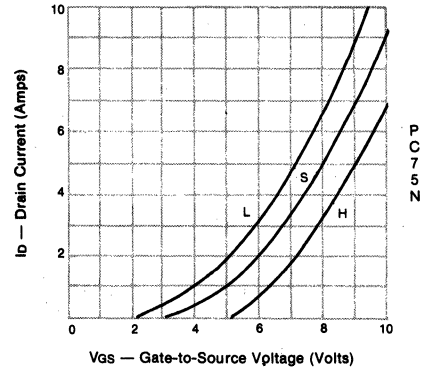
TRANSFER CHARACTERISTICS





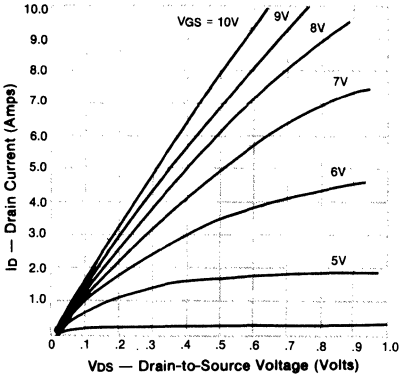






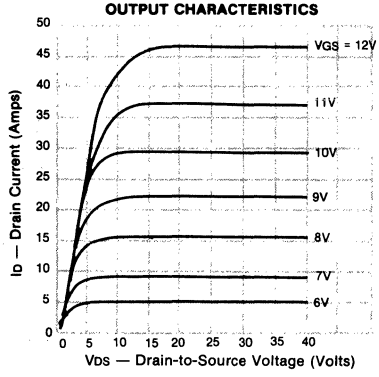
75 WATT MOSFET
YMOS POWER TRANSISTORS

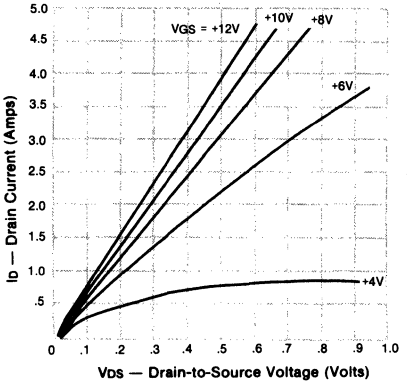
SATURATION CHARACTERISTICS



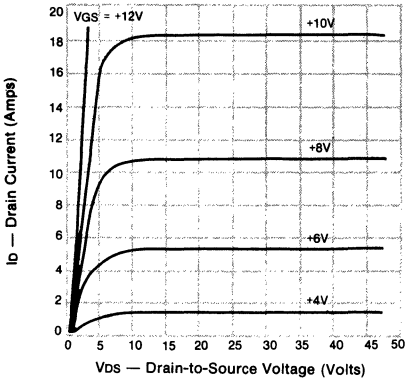
← PA75N →

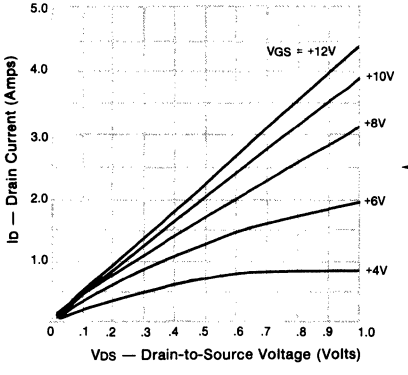
OUTPUT CHARACTERISTICS



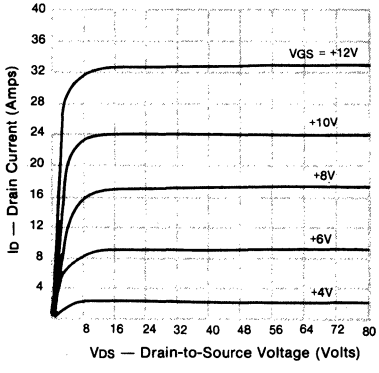


← PB75N →





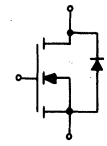
← PC75N →



75 WATT MOSFET
YMOS POWER TRANSISTORS

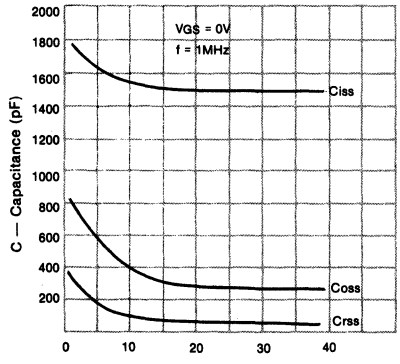
SOURCE — DRAIN DIODE RATINGS AND CHARACTERISTICS

PARAMETERS	TYPE	MIN	TYP	MAX	UNIT	TEST CONDITIONS
I_{DR} Continuous Reverse Drain Current	PA75N85	—	—	22	A	Modified MOSFET Symbol showing Reverse P-N Diode
	PA75N120	—	—	20		
	PA75N150	—	—	17		
	PB75N140	—	—	18		
	PB75N180	—	—	16		
	PC75N250	—	—	13		
	PC75N400	—	—	10		
I_{DRM} Pulsed Reverse Drain Current	PA75N85	—	—	44	A	
	PA75N120	—	—	40		
	PA75N150	—	—	34		
	PB75N140	—	—	36		
	PB75N180	—	—	32		
	PC75N250	—	—	26		
	PC75N400	—	—	20		
V_{SDF} Forward Diode Voltage	ALL	—	1.2	—	V	$I_S = I_{DR}$, $V_{GS} = 0V$
trr Reverse Recovery Time	ALL	—	135	—	ns	$I_F = I_{DR}$, $di/dt = 10A/\mu s$, see fig. 3 & 4
	ALL	—	170	—	ns	$I_F = I_{DR}$ $di/dt = 10A/\mu s$, $T_J = 150°C$

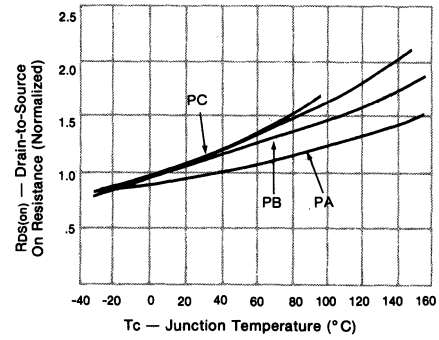


NOTES:
1. The effective input capacitance Cin = Cgs + (1 + |AV|) Cgd for switching applications will be relatively low due to very small value of Cgd.
2. V_{GS} = 12V for PMH parts.
* Pw = 300 μs: Duty Cycle = 2%.

CAPACITANCE



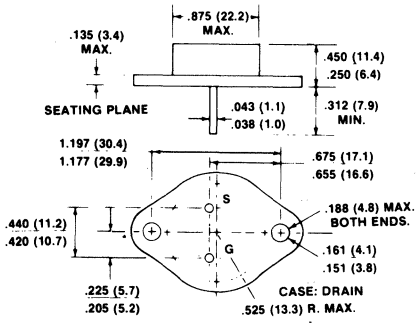
NORMALIZED $R_{DS(on)}$ vs T_C



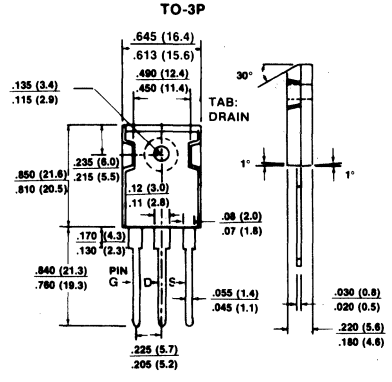
PACKAGE DIAGRAMS

All dimensions in inches and (millimeters)

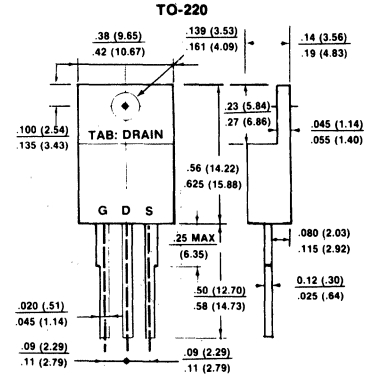
TO-3



TO-3P



TO-220



TEST CIRCUITS AND WAVEFORMS

FIGURE 1 — CLAMPED INDUCTIVE TEST CIRCUIT

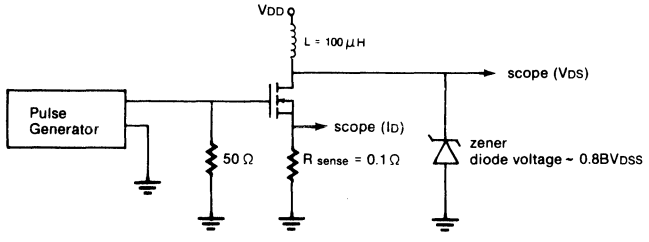


FIGURE 2 — CLAMPED INDUCTIVE WAVEFORM

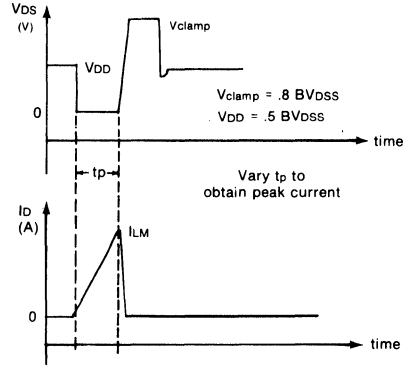


FIGURE 3 — JEDEC REVERSE RECOVERY CIRCUIT

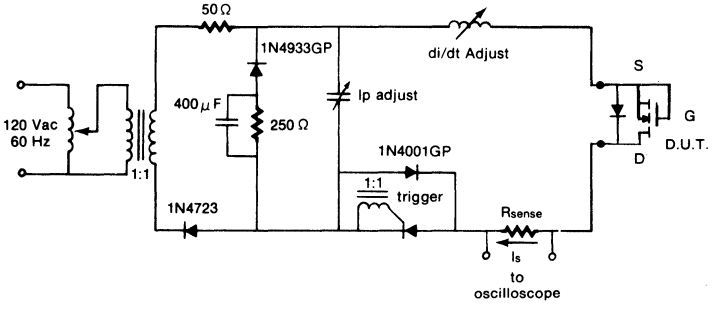


FIGURE 4 — REVERSE RECOVERY WAVEFORM

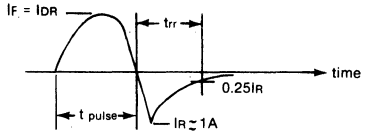


FIGURE 5 — SWITCHING TIME TEST CIRCUIT

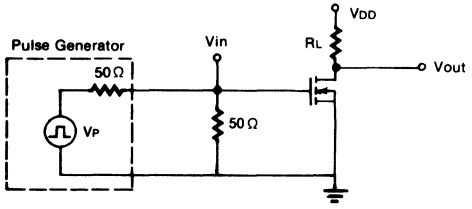


FIGURE 6 — DEFINITION OF SWITCHING TIMES

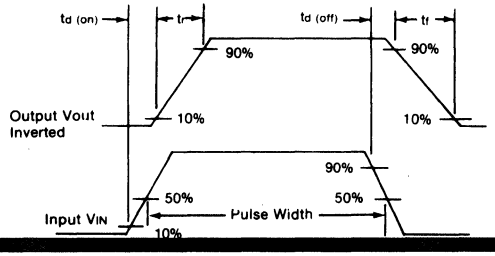
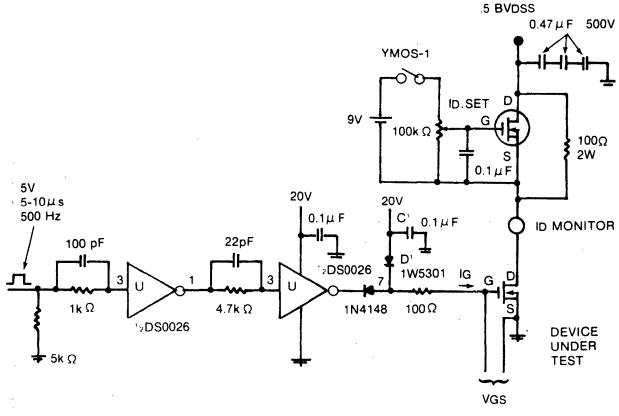


FIGURE 7 — GATE CHARGE CIRCUIT

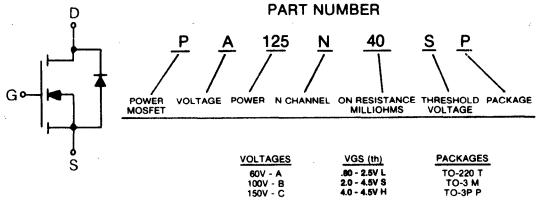


125 WATT MOSFET
YMOS POWER TRANSISTORS

DESCRIPTION

YMOS Power Transistors represent the State of the art in low voltage, low On Resistance Power MOS FET technology. This unique patented mesh gate topology produces a device with a low percentage change in On Resistance versus temperature (% $R_{DS(on)}$/°C).

Along with the standard features of Power MOS FET Transistors, the YMOS Process allows the user to select the range of threshold voltage which is most compatible with the device application.



FEATURES

- Fastest t_{rr} of source-drain rectifier: 145 nsec
- I_{DSS} specified at T_J = 150°C
- Reduced temperature coefficient of $R_{DS(on)}$: .40%/°C, Typical
- Extremely low reverse transfer capacitance
- Low output capacitance
- Low drive current combined with fast switching
- Characterized for use with inductive loads
- No second breakdown

APPLICATIONS

- DC to DC converter
- Motor controls
- Hammer drivers.
- Constant current sources.
- Solid state relays.
- Switching power supplies.

MAXIMUM RATINGS AT Tc = 25°C

PARAMETER	PA125N40	PA125N60	PB125N60	PB125N80	PC125N130	PC125N180	UNITS
V_{DS} Drain-Source Voltage	60	60	100	100	150	150	V
V_{DGR} Drain-Gate voltage (R_{GS} = 1KΩ	60	60	100	100	150	150	V
I_D Continuous Drain Current	44	36	36	31	24	20	A
I_{DM} Pulsed Drain Current	88	72	72	62	48	40	A
V_{GS} Gate-Source Voltage	±20						V
P_D Max Power Dissipation	125						W
Linear Derating Factor	1.0						W/°C
I_{LM} Clamped Inductive Current See Fig. 1 & 2	88	72	72	62	48	40	A
T_J, Tstg Operating and Storage Temperature Range	-55 to 150						°C
T_L Max Lead Temperature 1.6mm from case, 10 sec.	300						°C

125 WATT MOSFET
YMOS POWER TRANSISTORS

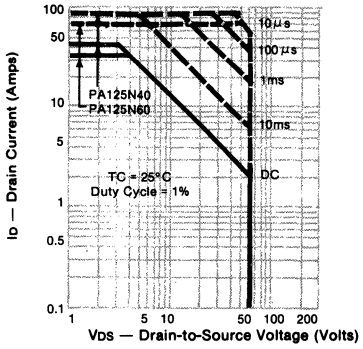
ELECTRICAL CHARACTERISTICS (Tc = 25°C unless otherwise noted)

PARAMETER	TYPE	MIN	TYP	MAX	UNIT	TEST CONDITIONS
BV_{DSS} Drain-Source Breakdown Voltage	PA125N40, PA125N60	60	—	—	V	V_{GS} = 0V, I_{DSS} = 1mA
	PB125N60, PB125N80	100	—	—		
	PC125N130, PC125N180	150	—	—		
I_{DSS} Zero Gate Voltage Drain Current	ALL	—	—	1.0	mA	V_{DS} = Max Rating, V_{GS} = 0V, T_J = 25°C
	ALL	—	—	4.0	mA	V_{DS} = Max Rating, V_{GS} = 0V, T_J = 150°C
I_{GSS} Gate-Source Leakage Current	ALL	—	—	100	nA	V_{GS} = 20V
$V_{GS(th)}$ Gate Threshold Voltage	L	.8	—	2.5	V	V_{DS} = V_{GS}, I_D = 20mA
	S	2.0	—	4.5		
	H	4.0	—	6.0		
Static Drain-Source $R_{DS(on)}$ On-Resistance*	PA125N40	—	—	.040	Ω	V_{GS} = 10V, I_D = 10A (Note 2)
	PA125N60	—	—	.060		
	PB125N60	—	—	.060		
	PB125N80	—	—	.080		
	PC125N130	—	—	.130		
	PC125N180	—	—	.180		
$I_{D(on)}$ On-State Drain Current*	PA125N40	48	60	—	A	V_{GS} = 10V, V_{DS} = 20V (Note 2)
	PA125N60	41	58	—		
	PB125N60	39	55	—		
	PB125N80	34	47	—		
	PC125N130	30	42	—		
	PC125N180	25	35	—		
g_{fs} Forward Transconductance*	ALL	—	6.0	—	℧	V_{DS} = 10V, I_D = 10A
C_{iss} Input Capacitance (Note 1)	ALL	—	2800	—	pF	V_{DS} = 25V
C_{oss} Output Capacitance	ALL	—	400	—	pF	V_{GS} = 0V
C_{rss} Reverse Transfer Capacitance	ALL	—	100	—	pF	f = 1MHz
$t_{d(on)}$ Turn-on Delay Time	ALL	—	45	—	ns	V_{DD} = 25V
t_r Rise Time	ALL	—	65	—	ns	V_{GS} = 12V
$t_{d(off)}$ Turn-off Delay Time	ALL	—	90	—	ns	I_D = 16A
t_f Fall Time	ALL	—	70	—	ns	see fig. 5 & 6
Thermal Resistance $R_{\theta jc}$ Junction-to-case	ALL	—	—	1.0	°C/W	
Gate Charge (To 10V) V_{GS}	PA125N40, PA125N60	—	62	—	nc	I_D = 6A
	PB125N60, PB125N80	—	70	—		
	PC125N130, PC125N180	—	70	—		BV_{DS} = .5 BV_{DSS}
Gate Charge Figure of Merit	PA125N40	—	3	—	nvs	GCFM = ($R_{DS(on)}$) (Gate Charge to 10V)
	PA125N60	—	4	—		
	PB125N60	—	5	—		
	PB125N80	—	6	—		
	PC125N130	—	10	—		
	PC125N180	—	13	—		

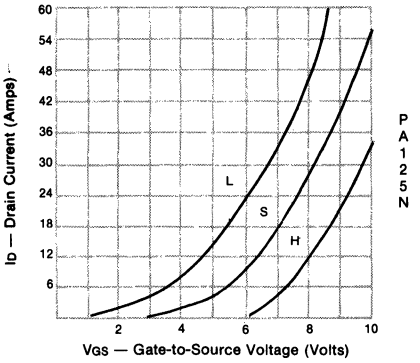
Specifications subject to change without notice.

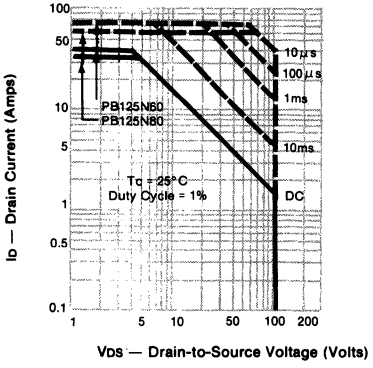
TYPICAL CHARACTERISTICS AT Tc = 25°C

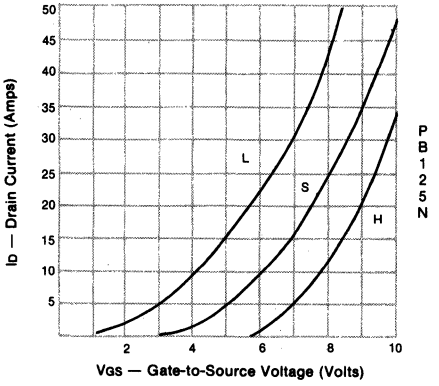
SAFE OPERATING AREA

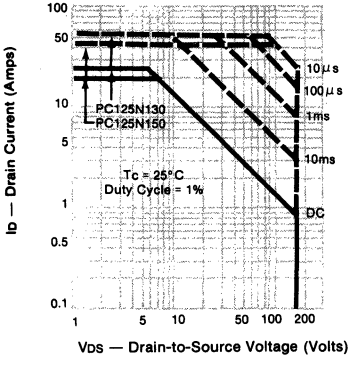


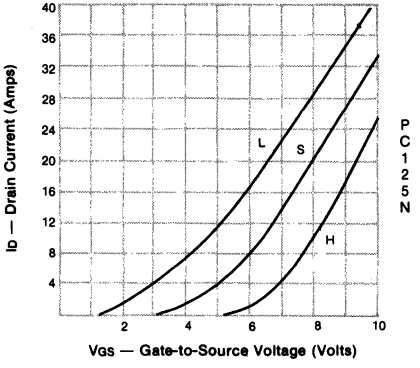
TRANSFER CHARACTERISTICS





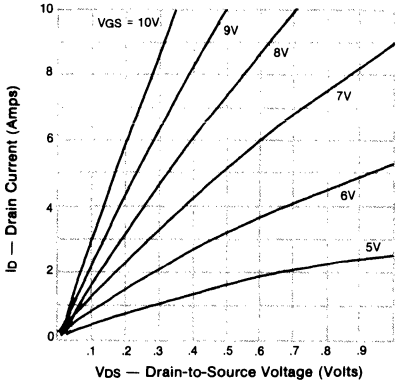






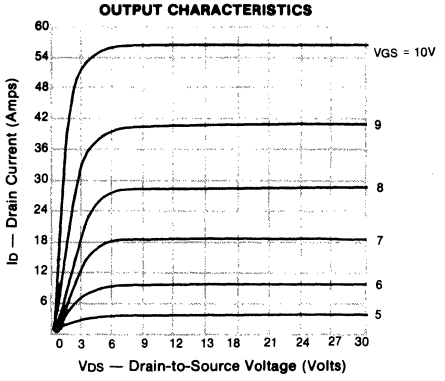
125 WATT MOSFET
YMOS POWER TRANSISTORS

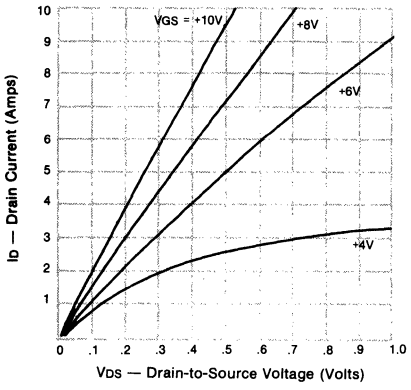
SATURATION CHARACTERISTICS



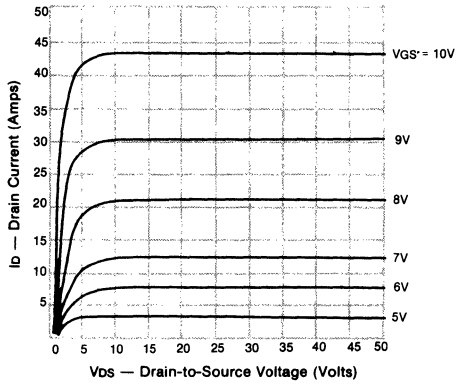
PA125N

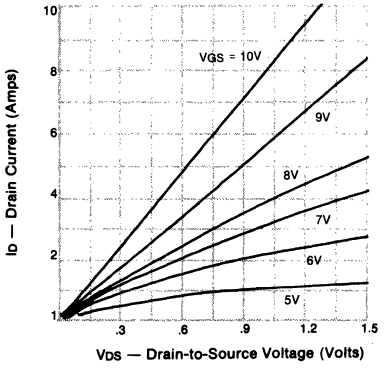
OUTPUT CHARACTERISTICS



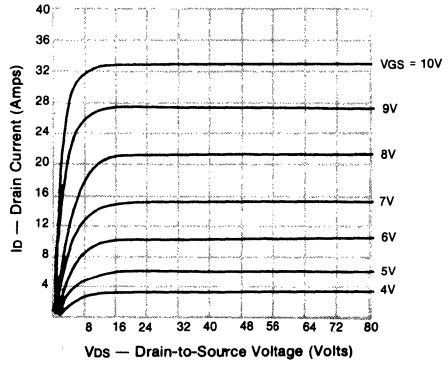


PB125N



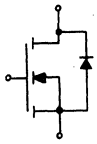


PC125N



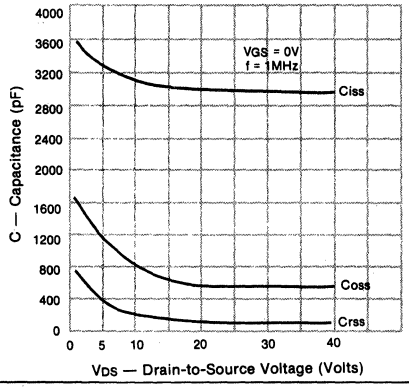
125 WATT MOSFET
YMOS POWER TRANSISTORS

SOURCE — DRAIN DIODE RATINGS AND CHARACTERISTICS

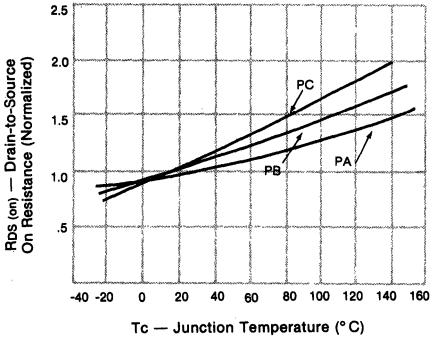
PARAMETERS	TYPE	MIN	TYP	MAX	UNIT	TEST CONDITIONS
I_{DR} Continuous Reverse Drain Current	PA125N40	—	—	44	A	Modified MOSFET Symbol showing Reverse P-N Diode 
	PA125N60	—	—	36		
	PB125N60	—	—	36		
	PB125N80	—	—	31		
	PC125N130	—	—	24		
	PC125N180	—	—	20		
I_{DRM} Pulsed Reverse Drain Current	PA125N40	—	—	88	A	
	PA125N60	—	—	72		
	PB125N60	—	—	72		
	PB125N80	—	—	60		
	PC125N130	—	—	48		
	PC125N180	—	—	40		
V_{SD} Forward Diode Voltage	ALL	—	1.2	—	V	$I_S = I_{DR}$, $V_{GS} = 0V$
t_{rr} Reverse Recovery Time	ALL	—	145	—	ns	$I_F = I_{DR}$, $dI/dt = 10A/\mu s$ see fig. 3 & 4
	ALL	—	180	—	ns	$I_F = I_{DR}$ $dI/dt = 10A/\mu s$, $T_J = 150°C$

NOTES:
1. The effective input capacitance Cin = Cgs + (1 + |AV|) Cgd for switching applications will be relatively low due to very small value of Cgd.
2. V_{GS} = 12V for PMH parts.
* Pw = 300 μs: Duty Cycle = 2%.

CAPACITANCE



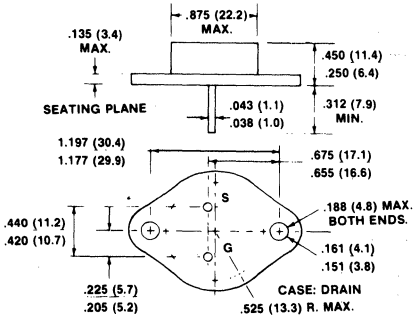
NORMALIZED $R_{DS(on)}$ vs T_C



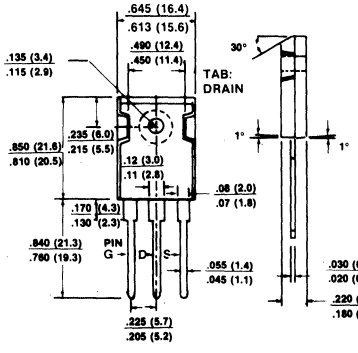
PACKAGE DIAGRAMS

All dimensions in inches and (millimeters)

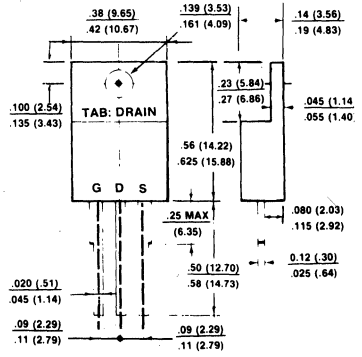
TO-3



TO-3P



TO-220



TEST CIRCUITS AND WAVEFORMS

FIGURE 1 — CLAMPED INDUCTIVE TEST CIRCUIT

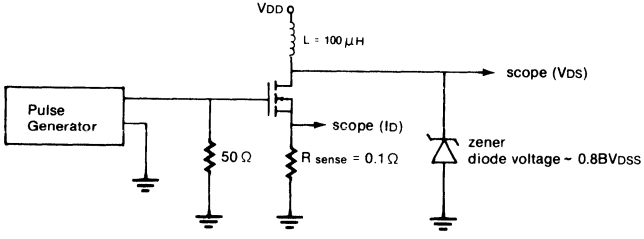


FIGURE 2 — CLAMPED INDUCTIVE WAVEFORM

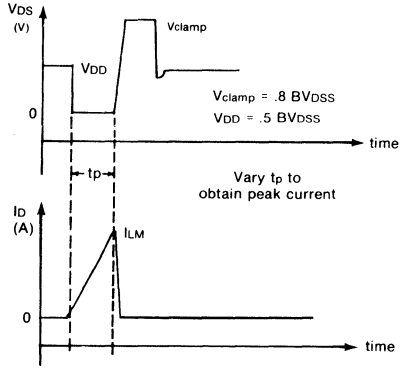


FIGURE 3 — JEDEC REVERSE RECOVERY CIRCUIT

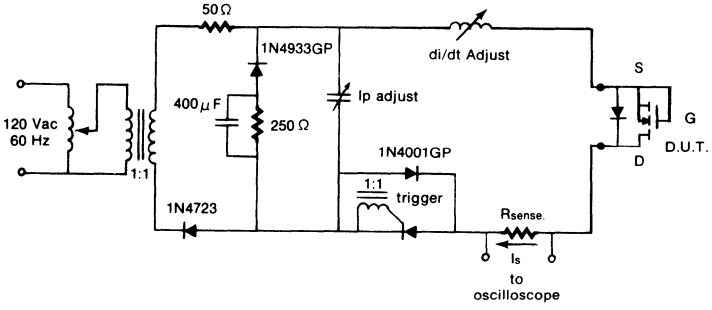


FIGURE 4 — REVERSE RECOVERY WAVEFORM

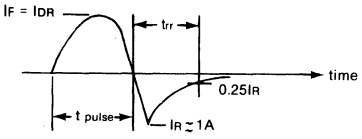


FIGURE 5 — SWITCHING TIME TEST CIRCUIT

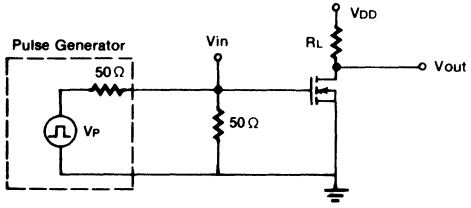


FIGURE 6 — DEFINITION OF SWITCHING TIMES

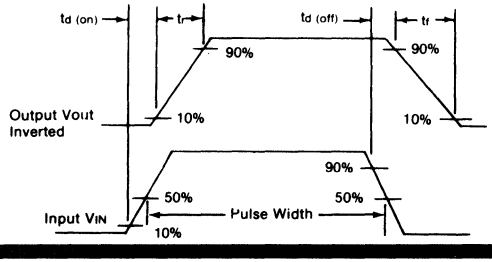
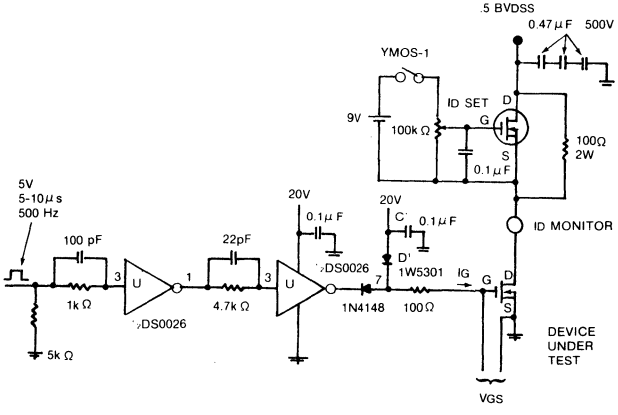


FIGURE 7 — GATE CHARGE CIRCUIT



PACKAGING BULK AND TAPE AND REEL

Packaging Codes

Code	Packaging Types
PKG1	Bulk
PKG2	26MM Horizontal Reel
PKG3	26MM Horizontal Ammo Pack
PKG4	Std. Horizontal Reel (Metric 52.4MM)
PKG5	Horizontal Reel (English Dimensions 2.0″)
PKG6	Avisert, Cathode Up, Reel
PKG7	Avisert, Cathode Up, Reel, Lead Coating
PKG8	Avisert, Cathode Up, Ammo Pack
PKG9	Avisert, Cathode Up, Ammo Pack, Lead Coating
PKG10	Avisert, Cathode Down, Reel
PKG11	Avisert, Cathode Down, Reel, Lead Coating
PKG12	Avisert, Cathode Down, Ammo Pack
PKG13	Avisert, Cathode Down, Ammo Pack, Lead Coating
PKG14	Panasert, Cathode Up, Reel
PKG15	Panasert, Cathode Up, Reel, Lead Coating
PKG16	Panasert, Cathode Up, Ammo Pack
PKG17	Panasert, Cathode Up, Ammo Pack, Lead Coating
PKG18	Panasert, Cathode Down, Reel
PKG19	Panasert, Cathode Down, Reel, Lead Coating
PKG20	Panasert, Cathode Down, Ammo Pack
PKG21	Panasert, Cathode Down, Ammo Pack, Lead Coating
PKG22	Other
PKG23	Std. Horizontal Ammo Pack (Metric 52MM)
PKG24	Horizontal Ammo Pack (English Dimensions)
PKG25	Surface Mount, 12MM Tape, 7″ Diameter Reel
PKG26	Surface Mount, 12MM Tape, 13″ Diameter Reel
PKG29	Metric Horizontal Reel, 14″ Diameter Reel (52.4MM Spacing)
PKG30	Metric Horizontal Reel, 14″ Diameter Reel (63.5MM Spacing)
PKG31	Metric Horizontal Reel, 14″ Diameter Reel (73MM Spacing)

REEL PACKAGING

Axial lead units are packed in accordance with EIA Standard RS-296-D plus specifications given below and the diagrams given below which are referred to in the specifications.

Table 1

COMPONENT CASE TYPE	UNITS PER REEL	COMPONENT SPACING "A" FIG.		TAPE SPACING "B" FIG. 3		APPROX. REEL DIMENSION "D" FIG.		ALIGNMENT ALIGNMENT "E" FIG.		APPROX. GROSS WEIGHT PER REEL PACKED	
	ea.	in.	mm	in.	cm	in.	cm	in.	mm	lbs.	kg.
DO15/F126	3500	.200	5.0	2.06	5.24	13	33	.047	1.2	5.06	2.3
G4	2500	.200	5.0	2.06	5.24	13	33	.047	1.2	5.29	2.4
GP20	1200	.395	10.0	2.06	5.24	13	33	.047	1.2	3.52	1.6
DO201AD	1200	.395	10.0	2.06	5.24	13	33	.047	1.2	5.50	2.5
DO41	5000	.200	5.0	2.06	5.24	13	33	.047	1.2	5.76	2.6
GP10 Verticle	2000	See Fig. 4 & 5		—	—	14	36	.079	2.0	2.40	1.09
DO204AP	4000	.200	5.0	2.06	5.24	13	33	.047	1.2	5.76	2.6
G3	1500	.395	10.0	2.06	5.24	13	33	.047	1.2	4.80	2.2
DO204MB	4000	.200	5.0	2.06	5.24	13	33	.047	1.2	3.47	1.7
P600	700	.395	10.0	2.06	5.24	13	33	.047	1.2	5.06	2.3
GL41 Surface Mount	1500/5000	See Fig. 6				7/13	178/330	See Fig. 6		.471/1.49	.214/.68
GL27 Surface Mount	400/1200	See Fig. 6				7/13	178/330	See Fig. 6		.84/2.53	.382/1.15
GP10/GP15	5000/3500	.200	5.0	2.5	6.35	14	35.6	.047	1.2	6.0/5.2	2.7/2.36
GP10	5000	.200	5.0	2.874	7.3	14	35.6	.047	1.2	6.0	2.7

The C dimension of Fig. 3 is between 125" (3.175) and .250" (6.35) greater than the length of the component involved.
Dimensions in inches and (millimeters).

Table 2

	Metric Spec.		
Component T Body Dia.	Components spacing A (Lead to lead)	Inside tape spacing B	Cumulative pitch tolerance
	± 0.5 mm (.020")	± 1.5 mm (.059")	
0 mm to 5 mm (0 to .197")	5.0 mm	52.4 mm	Not exceed 1.0 mm over 20 consecutive components
5.01 mm to 10 mm (.197" to .394")	10 mm	52.4 mm	Not exceed 1.0 mm over 10 consecutive components

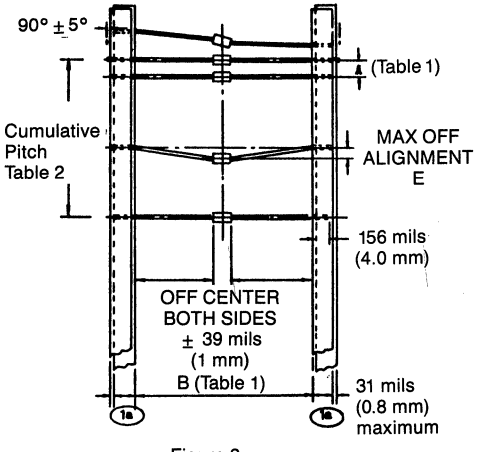


Figure 3

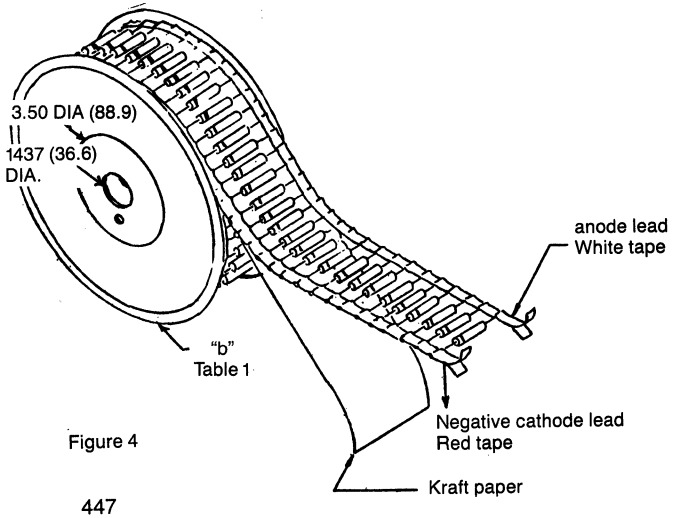
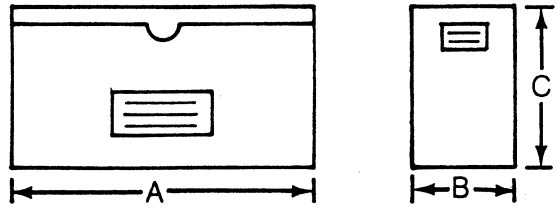


Figure 4

BULK PACKAGING

Device Type	Box Size		Quantity	Gross Weight	
	In.	cm.	ea.	lbs	kg.
GL41 Surface Mount	8 x 3.5 x 1	20.3 x 8.8 x 2.54	4000	.55	.25
GL27 Surface Mount	8 x 3.5 x 1	20.3 x 8.8 x 2.54	1000	.55	.25
DO41	11.75 x 5.125 x 2.5	29.8 x 13.0 x 6.3	5000	2.38	1.08
DO15, DO204AP, F-126	8 x 3.5 x 1	20.3 x 8.8 x 2.54	500	.55	.25
GP20	12 x 3.6 x 2.5	30.4 x 9.1 x 6.3	1000	1.76	.8
P600	12 x 3.6 x 2.5	30.4 x 9.1 x 6.3	500	2.30	1.0
G4, G3	12 x 3.2 x 2.5	30.4 x 8.1 x 6.3	1000	2.5	1.1
DO204MB	8 x 3.5 x 1	20.3 x 8.8 x 2.54	1000	.77	.35
TO220, TO220CT	Anti-Static Plastic Tubes 20.5 in length	52 in length	50 per tube	.308	.14
TO3P	Anti-Static Plastic Tubes 20.5 in length	52 in length	30 per tube	.572	.26
TO3	Polyfoam Container 12.8 x 6.8 x 3.0	32.5 x 17.3 x 7.6	50	1.54	0.70
DO201AD	12 x 3.6 x 2.5	30.4 x 9.1 x 6.3	1000	2.5	1.1
KBP, 2KBP Polyfoam Container	14.8 x 8.8 x 3.5	37.6 x 22.3 x 8.9	550	7.0	3.2
KBU4, 6, 8 Polyfoam Container	14.8 x 8.8 x 3.5	37.6 x 22.3 x 8.9	400	7.5	3.4
KBL Polyfoam Container	14.8 x 8.8 x 3.5	37.5 x 22.0 x 9.0	500	7.5	3.4
KBPC8	8.8 x 8.8 x 1.8	22.3 x 22.3 x 4.5	200	3.52	1.6
KBPC1, KBPC6	4.8 x 7.8 x 1.8	19.8 x 19.8 x 4.5	200	2.2	1.0
KBPC 10/35, GIB25, 25SP	14.8 x 8.8 x 3	37.6 x 22.3 x 7.6	100	7.0	3.2
GIB35 Polyfoam Container	10.0 x 6.3 x 1.7	25.4 x 16.0 x 4.3	36	3.3	1.5
15IP	8.8 x 6 x 2.3	22.3 x 15.2 x 5.8	60	1.87	.85
AR, ARLC	Plastic Bags		200	.84	.38
DF-M Anti-Static Plastic Tubes	20.5 length	52 length	50 per tube	.12	.05
WM	Plastic Bags		100	.37	.17
GPP1, 5, ERF1, 3, 5, SCH3, 5	2.0 x 2.0 x .35 Chip Tray	5.1 x 5.1 x 0.9	100	.042	.019
EFR8	2.0 x 2.0 x .35	5.1 x 5.1 x 0.9	800	.044	.020
SCH1	2.0 x 2.0 x .35	51. x 5.1 x 0.9	400	.042	.019
SCH10	2.0 x 2.0 x .35	5.1 x 5.1 x 0.9	49	.042	.019

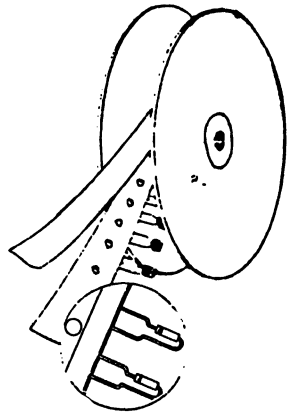
AMMO BOX PACKAGING



Packaging	Available Products	Packaging Codes	Dimension "A"	Dimension "B"	Dimension "C"	Q'ty per Box
26MM Horizontal	DO-41 Outline					3K
Ammo Pack	DO-15 Outline	PKG 3	274MM	44MM	95MM	1.5K
52MM Horizontal	DO-41	PKG 23				3K
Ammo Pack	DO-15 Outline	PKG 24	254MM	79MM	110MM	2K
Vertical (Avisert, Panasert) Ammo Pack	GP10, RGP10 0.65MM Lead Diameter	PKG 8, 9, 12, 13, 16 17, 20, 21	328MM	42MM	200MM	2K

PACKING METHODS

Avisert:	Panasert:
PKG6	PKG14
PKG7	PKG15
PKG8	PKG16
PKG9	PKG17
PKG10	PKG18
PKG11	PKG19
PKG12	PKG20
PKG13	PKG21



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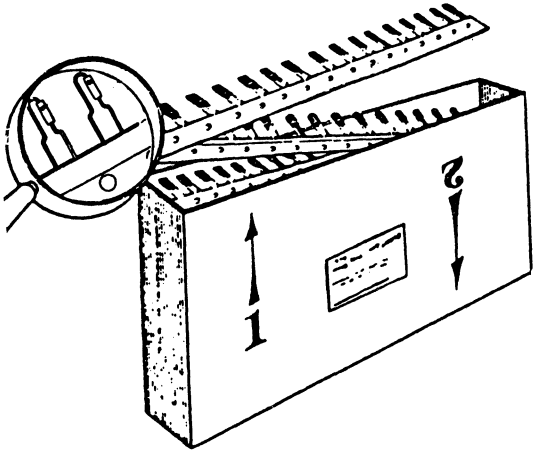
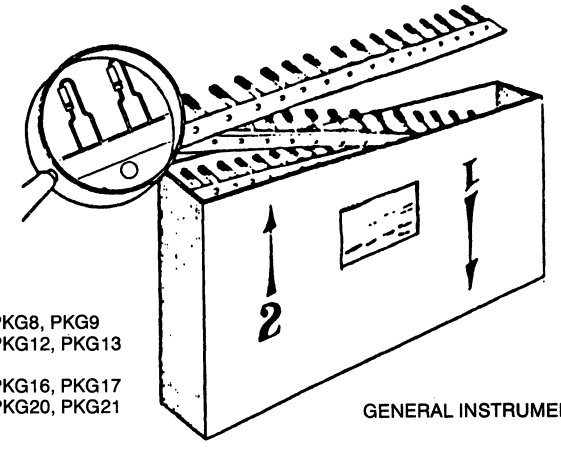
PKG10, PKG11

PKG14, PKG15
PKG18, PKG19





PKG8, PKG9
PKG12, PKG13

PKG16, PKG17
PKG20, PKG21

GENERAL INSTRUMENT

VERTICAL REEL PACKAGING

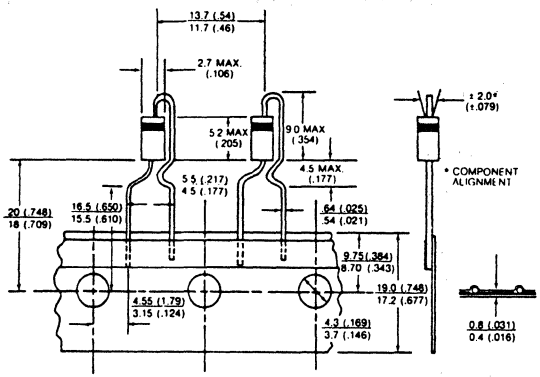


FIG. 4 — PANASERT

Standard polarity cathode oriented away from sproket holes.
(Optional polarity cathode oriented toward sprocket holes.)

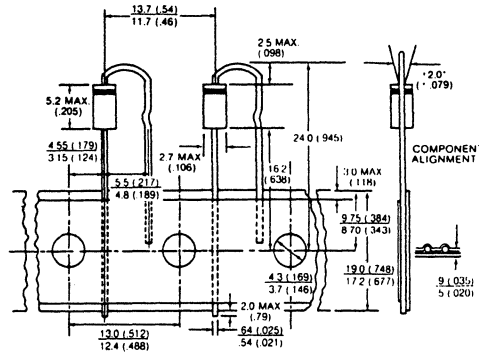
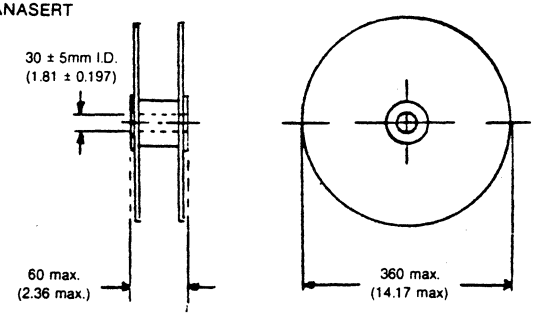


FIG. 5 — AVISERT

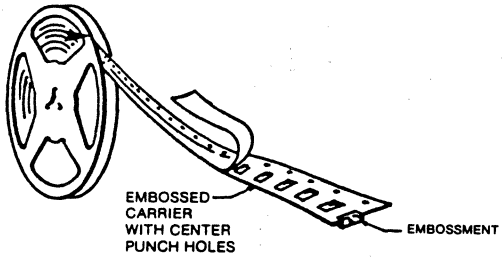


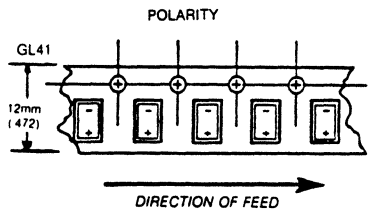
ALL DIMENSIONS IN MILLIMETERS (INCHES)

Package per EIA/JEDEC standard RS-468. Available on reels or fan fold box (ammo pack).
Available only for GP10 products utilizing 0.65mm (.25) diameter leads.

SURFACE MOUNT DEVICE PACKAGING

Packaged per EIA/JEDEC standard RS-481, using 12mm blister tape.
Available on 7 inch (1500 ct.) or 13 inch (5000 ct.) diameter reels.
Available products: GL41, RGL41, EGL41, 1N6478 THRU 1N6484 and ZGL41.





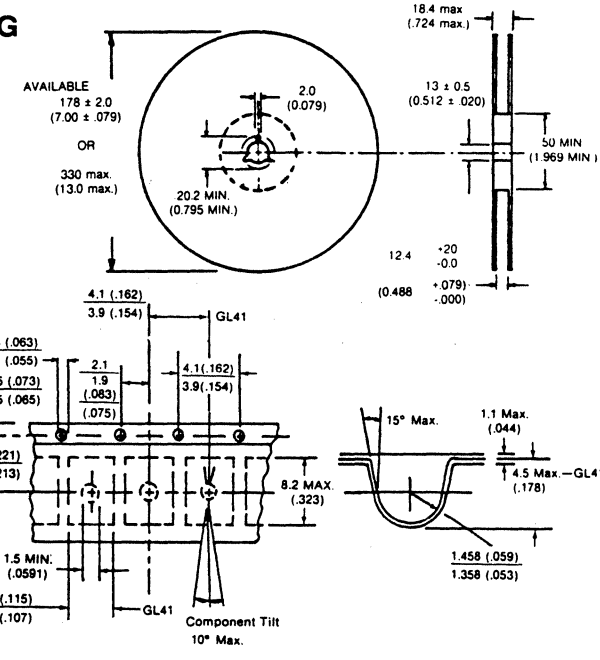


FIG. 6

ALL DIMENSIONS IN MILLIMETERS (INCHES)

GENERAL INSTRUMENT

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Canoga Pk, CA 91303
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Carlsbad
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Ewing-Foley
895 Sherwood Avenue
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Tel: (415) 941-4525

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El Segundo
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TWX: 910-348-7141

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Suite 204
Santa Ana
Tel: (714) 545-3230

Varigon Associates Inc.
22976 El Toro Road
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El Toro
Tel: (714) 855-0233

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TWX: 910-938-0390

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TWX: 910-253-5941

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P.O. Box 242
Greenwood
Tel: (317) 888-2260
TWX: 810-260-2231

Valentine & Associates
1638 Lincolnway East
Suite B
Southbend
Tel: (219) 288-7070
TWX: 810-260-2231

IOWA

Dy-Tronix Inc.
Suite 103
23 Twixt Town Road
Cedar Rapids
Tel: (319) 377-8275

KANSAS

Dy-Tronix Inc.
1999 Amidon
Suite 322
Wichita
Tel: (316) 838-0834

MASSACHUSETTS

Bay Colony Representatives Inc.
1610 Worcester Road
Suite 344A
Framingham
Tel: (617) 620-0607
TLX: 951588

MICHIGAN

Rathsburg Associates
16621 E. Warren Avenue
Detroit
Tel: (313) 882-1717
TWX: 810-243-4064

MINNESOTA

Hi-Tech
11200 W. 78th St.
Suite 210
Eden Prairie, MN 55344
Tel: (612) 944-7274
TWX: 910-997-1169

MISSOURI

Dy-Tronix Inc.
3407 Bridgeland
Bridgeton
Tel: (314) 291-4777
TWX: 910-726-0646

Dy-Tronix Inc.
8801 E. 63rd Street
Suite 108
Raytown
Tel: (816) 356-6340

NEW JERSEY

Janco Technology
71 Grand Avenue
Palisades Park
Tel: (201) 941-4008
(203) 743-9436

Technical Marketing Group
705 Cedar Lane
Teaneck
Tel: (201) 692-0200
TWX: 710-990-5086

NEW MEXICO

Q.A. Electronics
2730 San Pedro N.E.
Suite H
Albuquerque, NM 87110
Tel: (505) 888-1121
Tlx: 660444

NEW YORK

Quality Components Inc.
116 East Fayette Street
Manilus
Tel: (315) 682-8885
TWX: 710-545-0663

Quality Components Inc.
3343 Harlem Road
Buffalo
Tel: (716) 837-5430

Technical Marketing Group
20 Broad Hollow Road
Suite 3001
Melville
Tel: (516) 351-8833
TWX: 910-997-3030

NORTH CAROLINA

Zucker Associates Inc.
P.O. Box 19868
Raleigh
Tel: (919) 782-8433
TWX: 510-928-0513

OHIO

G & H Sales Company
P.O. Box 43290
7754 Camargo Road
Cincinnati
Tel: (513) 272-0580
TWX: 810-460-8868

G & H Sales Company
P.O. Box 91
Grove City
Tel: (614) 878-1128

G & H Sales Company
P.O. Box 391088
36370 Timber Lane Drive
Solon
Tel: (216) 248-8490

OKLAHOMA

Bonser-Philhower
4614 So. Knoxville
Tulsa
Tel: (918) 744-9964

OREGON

Vantage
7100 S.W. Hampton
Suite 205
Tigard
Tel: (503) 620-3280

PENNSYLVANIA

Bresson Associates
107 Forrest Avenue
Narberth
Tel: (215) 664-6460
TWX: 510-662-4468

Russel F. Clark Co. Inc.
10517 Lindberg Avenue
Pittsburgh
Tel: (412) 242-9500

TEXAS

Bonser-Philhower
8200 Mopac Expressway
Suite 120
Austin, TX 78759
Tel: (512) 346-9186

Bonser-Philhower
689 W. Renner Road
Suite C
Richardson
Tel: (214) 234-8438
TWX: 910-867-4752

Bonser-Philhower
11321 Richmond Avenue
Suite 100A
Houston, TX 77082
Tel: (713) 531-4144
TWX: 910-880-4053

Q.A. Electronics
444 Executive Center Blvd.
Suite 117
El Paso, TX 79902
Tel: (915) 533-2658

UTAH

Straube Associates Inc.
3509 South Main Street
Salt Lake City
Tel: (801) 263-2640
TWX: 910-925-4026

WASHINGTON

Vantage
300 120th Avenue N.E.
Bldg. 7 Suite 207
Bellevue
Tel: (206) 455-3460
TWX: 910-443-2308

WISCONSIN

Metcom Assoc. Corp.
237 S. Curtis Road
West Allis
Tel: (414) 476-1300
TWX: 910-262-3183

PUERTO RICO

Electronic Sales Associates
Calle 203-GO-11
Country Club 3rd Ext.
Rio Piedras, PR 00924
Tel: (809) 762-6459/6707
TLX: 345-0328

CANADA

Davetek Marketing
8148 Riel Place
Vancouver, B.C.
V5S 4B3
Tel: (604) 430-3680

Pipe-Thompson Ltd.
5468 Dundas Street West
Suite 206
Islington, Ontario
Canada M9B 6E3
Tel: (416) 236-2355
TWX: 610-492-4367

INTERNATIONAL SALES OFFICES

Germany, France, Austria and Switzerland
General Instrument Deutschland GmbH
Freischuetzstr 96
8000 Munchen 81
Tel: (49-89) 95997-27
Telex: 524523

ITALY
G.I. Italia Divisione Semiconduttori Discreti
Via Quintiliano 27
20138 Milano, Italy
Tel: (02) 552258/504605/5062584
Telex: 314233

UNITED KINGDOM
General Instrument (UK) Ltd.
Time House, Ruislip
Middlesex, England
Tel: 8956-33355 & 8956-35670
Telex: 23272

TAIWAN
General Instrument of Taiwan, Ltd.
233 Pao Chiao Road
Hsin Tien, Taipei, Taiwan
Tel: 9113860

JAPAN
General Instrument International Corp.
Fukide Building, 5th Floor
1-13 Toranomon 4-Chrome
Minato-Ku, Tokyo 105, Japan
Tel: (03) 437-0281 (GIIC)

CHINA
General Instrument Hong Kong Ltd.
Room 1104-1107, Tower B, Mandarin Plaza
14 Science Museum Road
Tsimshatsui East, Kowloon
Hong Kong
Tel: 3-7226577
Telex: 54606 GIHKHX

GENERAL INSTRUMENT

AUTHORIZED DISTRIBUTORS

NAME	ADDRESS	CITY/STATE	TELEPHONE #
Hallmark Electronics	4900 Bradford Drive	Huntsville, AL 35807	(205) 837-8700
Marshall Industries	3313 Memorial Pky. South	Huntsville, AL 35801	(205) 881-9235
Pioneer Electronics	4825 University Square	Huntsville, AL 35805	(205) 837-9300
RM Alabama, Inc.	4702 Governors Dr., SW	Huntsville, AL 35805	(205) 852-1550
Anthem Electronics	17071-1 E. Weber Drive	Tempe, AZ 95281	(602) 244-0900
Arizona Components	2901-A McDowell Road	Phoenix, AZ 85009	(602) 269-5655
Arrow Electronics	2127 W. 5th Place	Tempe, AZ 85281	(602) 968-4800
Bell Industries	1705 W. 4th Street	Tempe, AZ 85281	(602) 966-7800
Hallmark Electronics	4040 East Raymond	Phoenix, AZ 85040	(602) 437-1200
Marshall Industries	835 West 22nd Street	Temp, AZ 85281	(602) 968-6181
Sterling Electronics	3501 East Broadway Rd.	Phoenix, AZ 85040	(602) 268-2121
Wyle Laboratories	17855 N. Black Canyon Fwy	Phoenix, AZ 85023	(602) 249-2232
ACI Electronics	345 Paseo Tesoro	Walnut, CA 91789	(818) 331-0735
All American	2908 Oregon Court G-2	Torrance, CA 90503	(213) 320-0240
Anthem Electronics	174 Component Drive	San Jose, CA 95131	(408) 946-8000
Anthem Electronics	4125 Sorrento Valley Blvd.	San Diego, CA 92121	(619) 279-5200
Anthem Electronics	2991 Dow Avenue	Tustin, CA 92680	(714) 730-8000
Anthem Electronics	20640 Bahama Street	Chatsworth, CA 91311	(818) 700-1000
Arrow Electronics	9511 Ridgehaven Court	San Diego, CA 92123	(619) 565-4800
Arrow Electronics	19748 Dearborne Street	Chatsworth, CA 91311	(213) 701-7500
Arrow Electronics	521 Weddell Drive	Sunnyvale, CA 94086	(408) 745-6600
Arrow Electronics	1808 Tribute Rd. Suite C	Sacramento, CA 95815	(916) 925-7456
Arrow Electronics	2961 Dow Avenue	Tustin, CA 92680	(714) 838-5422
Bell Industries	1161 N. Fairoaks Avenue	Sunnyvale, CA 94086	(408) 734-8570
Bell Industries	306 E. Alondra Blvd.	Gardena, CA 90247	(213) 515-1800
Bell Industries	12322 Monarch Street	Garden Grove, CA 92641	(714) 220-0681
Bell Industries	1829A De Havilland Drive	Thousand Oaks, CA 91320	(805) 499-6821
Bell Industries	500 Giuseppe Ct. Suite #6	Roseville, CA 95678	(916) 969-3100
Diplomat Electronics	1283 F Mr. View Alviso Rd.	Sunnyvale, CA 94086	(408) 734-1900
Diplomat/Westates	9787 Aero Drive	San Diego, CA 92123	(619) 292-5693
Diplomat/Westates	20151 Bahama St.	Chatsworth, CA 91311	(213) 341-4411
Diplomat/Westates	140 McCormick Avenue	Costa Mesa, CA 92626	(714) 549-8401
Future Electronics	225 Charcot Avenue	San Jose, CA 95131	(408) 945-9100
Hallmark Electronics	2221 E. Rosecrans Avenue	El Segundo, CA 90245	(213) 643-9101
Hallmark Electronics	6341 Auburn Blvd. Suite B	Citrus Heights, CA 95610	(916) 722-8600
Hallmark Electronics	3878 Ruffin Road	San Diego, CA 92123	(619) 268-1201
Hallmark Electronics	110 Ringwood Ct.	San Jose 95131	(408) 946-0900
Hallmark Electronics	8130 Remmet Avenue	Canoga Park, CA 91304	(818) 716-7300
Hallmark Electronics	14831 Franklin Avenue	Tustin, CA 92680	(714) 669-4700
Marshall Industries	8015 Deering Avenue	Canoga Park, CA 91304	(213) 999-5001
Marshall Industries	3039 Kilgore Ave. #140	Rancho Cordova, CA 95670	(916) 635-9700
Marshall Industries	10105 Carroll Canyon Rd.	San Diego, CA 92131	(619) 578-9600
Marshall Industries	788 Palomar Avenue	Sunnyvale, CA 94086	(408) 732-1100
Marshall Industries	17321 Murphy Avenue	Irvine, CA 92714	(714) 660-0951
Marshall Industries	9674 Telstar Avenue	El Monte, CA 91731	(818) 442-7204
Master Distributors, Inc.	1301 Olympic Blvd.	Santa Monica, CA 92807	(213) 452-1336
Pacesetter Electronics	5417 E. La Palma Ave.	Anaheim, CA 92807	(714) 779-5855
Pacesetter Electronics	543 Weddell Drive	Sunnyvale, CA 94086	(408) 734-5470
Pacesetter Electronics	3137 W. Warner Avenue	Santa Ana, CA 92704	(213) 233-5800
Semispecialists of Amer.	1726 Manhattan Bch. Blvd.	Manhattan Beach, CA 90266	(213) 276-0861
Wyle Laboratories	3000 Bowers Avenue	Santa Clara, CA 95051	(408) 727-2500
Wyle Laboratories	1115 Sun Center Drive	Rancho Cordova, CA 95670	(916) 628-5282
Wyle Laboratories	9525 Chesapeake Drive	San Diego, CA 92123	(619) 565-9171
Wyle Laboratories	124 Maryland Street	El Segundo, CA 90245	(213) 322-8100
Wyle Laboratories	17872 Cowan Avenue	Irvine, CA 92714	(714) 863-9953
Wyle Laboratories	18910 Teller Avenue	Irvine, CA 92715	(714) 851-9958
Zeus Components	1130 Hawk Circle	Anaheim, CA 92807	(714) 632-6880
Zeus Components	3350 Scott Blvd., Bdg. 64	Santa Clara, CA 95051	(408) 727-0714
Anthem Electronics	8200 S. Akron Street	Englewood, CO 80112	(303) 790-4500
Arrow Electronics	2121 South Hudson	Denver, CO. 80222	(303) 758-2100
Bell Industries	8155 W. 48th Avenue	Wheatridge, CO 80033	(303) 424-1985
Diplomat Electronics	96 Inverness Dr. E Unit R	Englewood, CO 80112	(303) 740-8300
Future Electronics	9046 Marshall Court	Westminster, CO 80030	(303) 650-0123
Hallmark Electronics	6950 South Tucson Way	Englewood, CO 80112	(303) 694-1662
Marshall Industries	7000 N. Broadway	Denver, CO 80221	(303) 427-1818
Sterling Electronics	7304 S. Alton Way	Englewood, CO 80112	(303 796-7338
Wyle Laboratories	451 E. 124th Avenue	Thornton, CO 80241	(303) 457-9953

GENERAL INSTRUMENT

AUTHORIZED DISTRIBUTORS

NAME	ADDRESS	CITY/STATE	TELEPHONE #
Almo Electronics	3714 Whitney Avenue	Hamden, CT 06518	(203) 288-6556
Arrow Electronics	12 Beaumont Road	Wallingford, CT 06514	(203) 265-7741
Diplomat Electronics	52 Federal Road	Danbury, CT 06810	(203) 797-9674
Falcon Electronics	5 Higgins Road	Milford, CT 06460	(203) 878-5272
Future Electronics	69 North Street	Danbury, CT 06810	(203) 743-9594
JV Electronics	690 Main Street	East Haven, CT 06512	(203) 469-2321
Marshall Industries	Village Lane, PO Box 200	Wallingford, CT 06492	(203) 265-3822
Pioneer Harvey	112 Main Street	Norwalk, CT 06851	(203) 853-1515
All American Transistor	P.O. Box 380338	Miami, FL 33138	(305) 621-8282
Arrow Electronics	350 Fairway Drive	Deerfield Beach, FL 33441	(305) 429-8200
Arrow Electronics	50 Woodlake Drive, W	Palm Bay, FL 32905	(305) 725-1480
Diplomat Electronics	2120 Calumet Street	Clearwater, FL 33515	(813) 443-4514
Future Electronics	207 Range Road	Clearwater, FL 33575	(813) 441-4771
Graham Electronics	10810 72 St. N Suite 201	Largo, FL 33542	(813) 541-4434
Hallmark Electronics	15301 Roosevelt Bvd.	Clearwater, FL 33520	(813) 530-4543
Hallmark Electronics	7233 Lake Ellenor Drive	Orlando, FL 32809	(305) 855-4020
Hallmark Electronics	3161 S.W. 15th Street	Pompano Beach, FL 33069	(305) 971-9280
Hammond Electronics	1230 W. Central Avenue	Orlando, FL 32805	(305) 849-6060
Hammond Electronics	6600 N.W. 21st Avenue	Ft. Lauderdale, FL 33309	(305) 973-7103
Marshall Industries	4205 34 St., S.W.	Orlando, FL 32805	(305) 841-1878
Pioneer Electronics	674 S. Military Rd.	Deerfield Beach, FL 33441-3024	(305) 428-8877
Pioneer Electronics	221 North Lake Blvd.	Altamonte Sp., FL 32701	(305) 834-9090
Semispecialists of Amer.	359 Whooping Loop	Altamonte Sp., FL 32701	(305) 831-6201
Summit Distributors	1200 Stirling Rd. Bldg. 6	Dania, FL 33004	(305) 920-6253
Arrow Electronics	2979 Pacific Drive	Norcross, GA 30071	(404) 449-8252
Diplomat Electronics	6659 Peachtree Ind. Blvd.	Norcross GA 30092	(404)449-4133
Dixie Electronics	1234 Gordon Park Road	Augusta, GA 30901	(404) 722-2055
Hallmark Electronics	6410 Atlantic Blvd.	Norcross, GA 30071	(404) 447-8000
Marshall Electronics	43648 Shackelford Road	Norcross, GA 30093	(404) 923-5750
Pioneer Electronics	5835B Peachtree Corners E	Norcross, GA 30092	(404) 448-1711
Advent Electronics	7110 N. Lyndon Street	Rosemont, IL 40016	(312) 298-4210
Arrow Electronics	495 Lunt Avenue	Schaumburg, IL 60195	(312) 397-3440
Bell Industries	3422 W. Touhy Avenue	Skokie, IL 60645	(312) 982-9210
Diplomat Electronics	1071 Judson Street	Bensenville, IL 60106	(312) 595-1000
Hallmark Electronics	1177 Industrial Drive	Bensenville, IL 60106	(312) 860-3800
Marshall Industries	1261 Wiley Road Unit F	Schaumburg, IL 60195	(312) 490-0155
Newark Electronics	500 N. Polaski Road	Chicago, Il 60624	(312) 638-4411
Pioneer/Chicago	1551 Carmen Drive	Elk Grove Vlg, IL 60007	(312) 437-9680
RM Illinois, Inc.	180 Crossen	Elk Grove Vil., IL 70007	(312) 364-6622
Semiconductor Specialists	195 Spangler Avenue	Elmhurst, IL 60126	(312) 279-0169
Advent Electronics	8446 Moller Road	Indianapolis, IN 46268	(317) 872-4910
Arrow Electronics	2781 Rand Road	Indianapolis, IN 46241	(317) 243-3953
Ft. Wayne Electronics	3606 E. Maumec Avenue	Ft. Wayne, IN 46803	(219) 423-3422
Graham Electronics	3433 West Boulevard	Ft. Wayne, IN 46803	(219) 423-3422
Pioneer/Indiana	6408 Castleplace Drive	Indianapolis, IN 46250	(317) 849-7300
RM Indiana, Inc.	7031 Corporate Circle Dr.	Indianapolis, IN 46278	(317) 291-7110
Advent Electronics	682 58 Ave., Court SW	Cedar Rapids, IA 52401	(319) 363-0221
Arrow Electronics	375 Collins Avenue N.E.	Cedar Rapis, IA 52402	(319) 395-7230
Deeco, Inc.	2500 16 Avenue SW	Cedar Rapids, IA 52404	(319) 365-7551
Hallmark Electronics	10815 Lakeview Drive	Lenexa, KS 66219	(913) 888-4747
All American Transistor	1136 Taft Street	Rockeville, MD 20850	(301) 251-1205
Almo Electronics	8502 Dakota Drive	Gaithersburg, MD 20877	(301) 670-0090
Arrow Electronics	8300 Guilford Rd. Suite H	Columbia, MD 21046	(301) 247-5200
Diplomat Electronics	9150 Rumsey Road	Columbia, MD 21045	(301) 995-1226
Future Electronics	8980 Route 108	Columbia, MD 21045	(301) 621-4394
Hallmark Electronics	10240 Old Columbia	Columbia, MD 21046	(202) 621-1685
Marshall Industries	16760 Oakmont Avenue	Gaithersburg, MD 20760	(301) 840-9450
Pioneer/Washington	9100 Gaither Road	Gaithersburg, MD 20760	(301) 921-0660
A.W. Mayer Company	34 Linnell Circle	Billerica, MA 01821	(617) 229-2255
ACI Electronics	124 Cummings Park	Woburn, MA 01888	(617) 935-7230
Arrow Electronics	Arrow Drive	Woburn, MA 01801	(617) 933-8130
Diplomat Electronics	28 Cummings Park	Woburn, MA 01801	(717) 935-6611
Falcon Electronics	100 Pennsylvania Avenue	Framingham, MA 01701	(617) 626-2128
Future Electronics	133 Flanders Road	Westboro, MA 01581	(617) 366-2400
Green-Shaw Company	701 Bridge Street	Newton, MA 02195	(617) 969-8900
Marshall Industries	One Wilshire Road	Burlington, MA 01803	(617) 272-8200
Pioneer Harvey	44 Hartwell	Lexington, MA 02173	(617) 861-9200

AUTHORIZED DISTRIBUTORS

NAME	ADDRESS	CITY/STATE	TELEPHONE #
Sager Electronics	60 Research Road	Hingham, MA 02043	(617) 749-6700
Sterling Electronics	411 Waverly Oaks Road	Waltham, MA 02154	(617) 894-6200
Zeus Components	429 Marrett Road	Lexington, MA 02173	(617) 863-8800
Advent Electronics	24713 Crestview Court	Farmington His, MI 48018	(313) 477-1650
Arrow Electronics	3810 Varsity Drive	Ann Arbor, MI 48104	(313)971-8220
Arrow Electronics	3510 Roger B. Chaffee Dr.	Grand Rapids, MI 49508	(616) 243-0912
Pioneer/Michigan	13485 Stamford	Livonia, MI 48150	(313) 437-9680
RM Michigan, Inc.	4310 Roger B. Chaffee Dr.	Grand Rapids, MI 49508	(616) 531-9300
Arrow Electronics	5230 W. 73 St.	Edina, MN 55435	(612) 830-1800
Hallmark Electronics	7838 12 Avenue South	Bloomington, MN 55420	(612) 854-3223
Industrial Components	5229 Edina Boulevard	Minneapolis, MN 55435	(612) 831-2666
Joel Company	612-11th Avenue South	Minneapolis, MN 55343	(612) 935-6202
Marshall Industries	13810 24 Ave. N. Ste. 460	Plymouth, MN 55441	(612) 559-2211
Pioneer/Twin Cities	10203 Bren Road East	Minnetonka, MN 55343	(612) 935-5444
Semiconductor Specialists	1500 E. 79th Street #106	Minneapolis, MN 55420	(612) 854-8841
Arrow Electronics	2380 Schuetz	St. Louis, MO 63141	(314) 567-6888
Hallmark Electronics	13750 Shoreline Drive	Earth City, MO 63045	(314) 291-5350
Semiconductor Specialists	3805 N. Oak Traffic Way	Kansas City, MO 64116	(816) 452-3900
Scott Electronics	4040 Adams Street	Lincoln, NE 68504	(402) 466-8221
Arrow Electronics	1 Perimeter Drive	Manchester, NH 03103	(603) 668-6968
Arrow Electronics	6000 Lincoln Drive East	Marlton, NJ 08053	(609) 596-8000
Arrow Electronics	2 Industrial Road	Fairfield,NJ 07006	(201) 575-5300
Diplomat/1PC Corporation	490 S. Riverview Drive	Totowa, NJ 07512	(201) 785-1830
General Radio	6000 Pennsylvania Street	Camden, NJ 08012	(609) 964-8560
Hallmark Electronics	107 Fairfield Road	Fairfield, NJ 07006	(201) 575-4415
Hallmark Electronics	1000 Midlantic Drive	Mount Laurel, NJ 08054	(201) 575-3510
Marshall Industries	101 Fairfield Road	Fairfield, NJ 07006	(201) 340-1900
Marshall Industries	102 Gaither Drive Unit 2	Mt. Laurel, NJ 08054	(609) 234-9100
Pioneer Harvey	45 Route 46	Pinebrook, NJ 07058	(201) 575-3510
Solid State	46 Farrand Street	Blomfield, NJ 07003	(201) 429-8700
Sterling Electronics	7744 Pfeiffer Blvd.	Perth Amboy, NJ 08861	(201) 442-8000
Arrow Electronics	2360 Alamo Avenue, S.E.	Albuquerque, NM 87106	(505) 243-4566
Bell Industries	11728 Linn N.E.	Albuquerque, NM 87123	(505) 292-2700
Sterling Electronics	3540 D Pan American Fwy.	Albuquerque, NM 87107	(505) 884-1900
ADD Electronics	7 Adler Drive	East Syracuse, NY 13057	(315) 437-0300
Arrow Electronics	7705 Maltage Drive	Liverpool, NY 13088	(315) 652-1000
Arrow Electronics	3000 S. Winton Road	Rochester, NY 14623	(716) 427-0300
Diplomat Electronics	4610 Wetzel Road	Liverpool, NY 13088	(315) 652-5000
Future Electronics	7453 Morgan Rd.	Liverpool, NY 13088	(315) 451-2371
Intercept Electronics	Robinhill Corp. Pk. Rt.22	Patterson, NY 12563	(914) 878-6630
Marshall Industries	1260 Scottsville Road	Rochester, NY 14624	(716) 235-7620
Marshall Industries	129 Brown St.	Johnson City, NY 13790	(607) 754-1570
Pioneer Harvey	P.O. Box 1208/Vesta Pky.	Binghamton, NY 18211	(607) 748-8211
Pioneer Harvey	840 Fairport Park	Fairport, NY 14450	(716) 381-7070
Rome Electronics	216 E. Erie Blvd.	Rome, NY 13440	(315) 337-5400
Summit Distributors	916 Main Street	Buffalo, NY 14202	(716) 884-3450
ACI Electronics	200 Newton Road	Plainview, NY 11803	(516) 293-6630
All American Elect. Corp.	90 13th Avenue	Ronkonkoma, NY 11779	(516) 981-3935
Arrow Electronics	25 Hub Drive	Melville, NY 11742	(516) 694-6800
Arrow Electronics	20 Oser Avenue	Happauge, NY 11787	(516) 231-1000
Diplomat Electronics	110 Marcus Drive	Melville, NY 11747	(516) 454-6400
Hallmark Electronics	1 Comac Loop	Ronkonkoma, NY 11779	(516) 737-0600
Jaco Electronics Inc.	145 Oser Avenue	Happauge, NY 11787	(516) 273-5500
Marshall Industries	275 Oser Avenue	Happauge, NY 11787	(516) 273-2424
Pioneer Harvey	60 Crossways Park West	Woodbury, NY 11797	(516) 921-8700
Semispecialists of Amer.	564 Smith Street	Farmingdale, NY 11735	(516) 293-2710
Vantage	356 Veteran's Highway	Commack, NY 11725	(516) 543-2000
Zeus Components	100 Midland Avenue	Port Chester, NY 10573	(914) 937-7400

GENERAL INSTRUMENT

AUTHORIZED DISTRIBUTORS

NAME	ADDRESS	CITY/STATE	TELEPHONE #
Arrow Electronics	938 Burke Street	Winston-Salem, NC 27107	(919) 725-8711
Arrow Electronics	5240 Green's Dairy Road	Raleigh, NC 27601	(919) 876-3132
Dixie Electronics	5020 F. Departre Dr.	Raleigh, NC 27604	(919) 872-0808
Dixie Electronics	2220 S. Tyrone St.	Charlotte, NC 28234	(704) 377-5413
Dixie Electronics	123 New Leicester Hwy.	Ashville, NC 28806	(704) 252-8000
Dixie Electronics	1021 R. Burke Street	Winston-Salem, NC 27102	(919) 724-5961
Hallmark Electronics	5237 North Boulevard	Raleigh, NC 27604	(919) 872-0712
Hammond Electronics	2923 Pacific Aveneu	Greensboro, NC 27406	(919) 275-6391
Pioneer Electronics	9801-A Southern Pine Blvd.	Charlotte, NC 28210	(704) 527-8188
Arrow Electronics	7620 McEwen Road	Centerville, OH 45459	(513) 435-5563
Arrow Electronics	6238 Cockran Road	Solon, OH 44139	(216) 248-3990
Bell Industries	118 W. Park Road	Dayton, OH 45459	(513) 435-8660
Graham Electronics	239 Northland Blvd.	Cincinnati, OH 45246	(513) 772-1661
Hallmark Electronics	400 E. Wilson Bridge Rd.	Worthington, OH 43085	(614) 891-4555
Hallmark Electronics	5821 Harper Road	Solon, OH 44139	(216) 349-4632
Marshall Industries	5905 B. Harper Road	Solon, OH 44139	(216) 248-1788
Marshall Industries	6212 Executive Blvd.	Dayton, OH 45424	(513) 236-8088
Micro-Mil, Div. of Bell	118 Westport Road	Dayton, OH 45459	(513) 434-8231
Pioneer/Cleveland	4800 E. 131st Street	Cleveland, OH 44105	(216) 587-3600
Pioneer/Dayton	4433 Interpoint Blvd.	Dayton, OH 45404	(513) 9900
Stotts Friedman Company	2600 E. River Road	Dayton, OH 45439	(513) 298-5555
Hallmark Eletronics	5460 S. 103 Avenue	Tulsa, OK 74145	(918) 835-8458
Arrow Electronics	10260 S.W. Nimbus Bldg. M	Portland, OR 97223	(503) 684-1690
Bell Industries	6024 S.W. Jean Road	Lake Oswego, OR 97034	(503) 241-4115
Marshall Industries	8230 S.W. Nimbus Avenue	Beaverton, OR 97005	(503) 644-5050
Wyle Laboratories	5289 N.E. Elam Young Pkwy.	Hillsboro, OR 97123	(503) 640-6000
Advacom Inc.	5620 West Road	McDean, PA 16426	(814) 476-7774
Almo Electronics	9815 Roosevelt Blvd.	Philadelphia, PA 19114	(215) 698-4021
Almo Electronics	4550 McKnight Road	Pittsburgh, PA 15247	(412) 931-5990
Arrow Electronics	650 Seco Road	Monroeville, PA 15146	(412) 856-7000
Arrow Electronics	Pleasant Valley Avenue	Moorestown, NJ 08057	(609) 235-1900
General Radio	600 Pennsylvania Street	Camden, NJ 08102	(609) 964-8560
Hallmark Electronics	2091 Springdale Road	Cherry Hill, NJ 08003	(215) 335-7300
Marshall Industries	102 Gaither Dr., Unit 2	Mt. Laurel, PA 08054	(215) 627-1920
Pioneer Electronics	261 Gibralter Road	Horsham, PA 19044	(215) 674-4000
RM Electronics	110 Gibralter Road	Horsham, PA 19044	(215) 674-1181
Semiconductor Specialists	1000 RIDC Plaza Suite 207	Pittsburgh, PA 15238	(412) 963-7241
Shap Electronics	10071 Sandmeyer Lane	Philadelphia, PA 19116	(215) 969-3300
Pioneer/Pittsburgh	259 Kappa Drive	Pittsburgh, PA 15238	(412) 782-2300
Dixie Electronics	P.O. Box 408	Columbia, SC 29202	(803) 779-5332
Dixie Electronics	531 E. Palmetto Street	Florence, SC 29510	(803) 669-8201
Hammond Electronics	1035 Lowndes Hill Road	Greenville, SC 29602	(803) 233-4121
Dixie Electronics	6639 Clinton Highway	Knoxville, TN 37912	(615) 938-4131
Dixie Electronics	Suncrest Drive, Box 8215	Gray, TN 27615	(615) 477-3838
Hallmark Electronics	12211 Technology Blvd.	Austin, TX 78757	(512) 258-8848
Pioneer/Austin	9901 Burnet Road	Austin, TX 78758	(512) 835-4000
Pioneer/Dallas	13710 Omega Drive	Dallas, TX 75240	(214) 386-7300
Pioneer/Houston	5853 Point West Drive	Houston, TX 77036	(713) 988-5555
Arrow Electronics	3220 Commander Drive	Carrollton, TX 75006-2507	(214) 386-7500
Arrow Electronics	10125 Metropolitan Drive	Austin, TX 78757	(512) 835-4180
Hallmark Electronics	8000 West Geln	Houston, TX 77061	(713) 781-6100
Hallmark Electronics	10375 Rockwood Road	Dallas, TX 75238	(214) 343-5000
Jaco Electronics	1209 Glenville Drive	Richardson, TX 75080	(214) 235-9575
Marshall Industries	3698 Westchase Drive	Houston, TX 77042	(713) 789-9300
Marshall Industries	14205 Proton Road	Dallas, TX 75243	(214) 233-5200
R.M. Electronics	1801 Royal Lane Suite 800	Dallas, TX 75229	(214) 869-2080
Sterling Electronics	2335-A Kramer Lane	Austin, TX 78758	(512) 836-1341
Sterling Electronics	4201 Southwest Freeway	Houston, TX 77027	(713) 627-9800
Sterling Electronics	11090 Stemmons Freeway	Dallas, TX 75229	(214) 243-1600

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Diplomat Electronics	3007 S.W. Temple	Salt Lake City, UT 84115	(801) 486-4134
Future Electronics	2250 South Redwood Road	SAlt Lake City, UT 84119	(801) 972-8489
Wyle Laboratories	1959 South 4130 West	Salt Lake City, UT 84104	(801) 974-9953
Semispecialists of Amer.	118 Spruce Street	Rutland, VT 05701	(802) 775-7126
Sterling Electronics	4325 November Aveneu	Richmond, VA 23231	(804) 226-2190
Arrow Electronics	14320 N.E. 21st Street	Bellevue, WA 98005	(206) 643-4800
Bell Industries	1900 132nd Ave., N.E.	Bellevue, WA 98005	(206) 747-1515
Future Electronics	4-13107 Northrup Way	Bellevue, WA 98005	(206) 881-8199
Marshall Industries	14102 N.E. 21st Street	Bellevue, WA 98007	(206) 575-3120
Wyl Laboratories	1750 132nd Ave., N.E.	Bellevue, WA 98005	(206) 453-8300
Arrow Electronics	434 W. Rawson	Oak Creek, WI 53154	(414) 764-6600
Bell Industries	913 W. Mound Drive	Waukesha, WI 53186	(414) 547-8879
Hallmark Electronics	9657 S. 20th Street	Oak Creek, WI 53154	(414) 761-3000
RM Electronics	2626 S. 162 Street	New Berlin, WI 53151	(414) 784-4420
Taylor Electronics	1000 W. Donges Bay Road	Mequon, WI 53092	(414) 241-4321
Future Electronics	237 Hymus Blvd	Pnt. Clare, Que, CN H9R5C7	(514) 694-7710
Electrosonic Inc.	1100 Gordon Baker Road	Willowdale, Ontario	(416) 494-1666
Future Electronics	1050 Baxter Road	Ottowa, ONT K2C 3P2	(613) 8313
Future Electronics	82 St. Regis Crescent No.	Downsview, ONT M3J 123	(416) 638-4771
R-A-E Electronics	500 Norfinch Drive	Downsview, ONT M2N1Y4	(416) 736-1588
Future Electronics	3070 Kingway	Vancouver, BC V5R 5J7	(604) 438-5545
R-A-E Industrial Elect.	3455 Gardener Court	Burnaby, VCR VSG 4J7	(604) 291-8866

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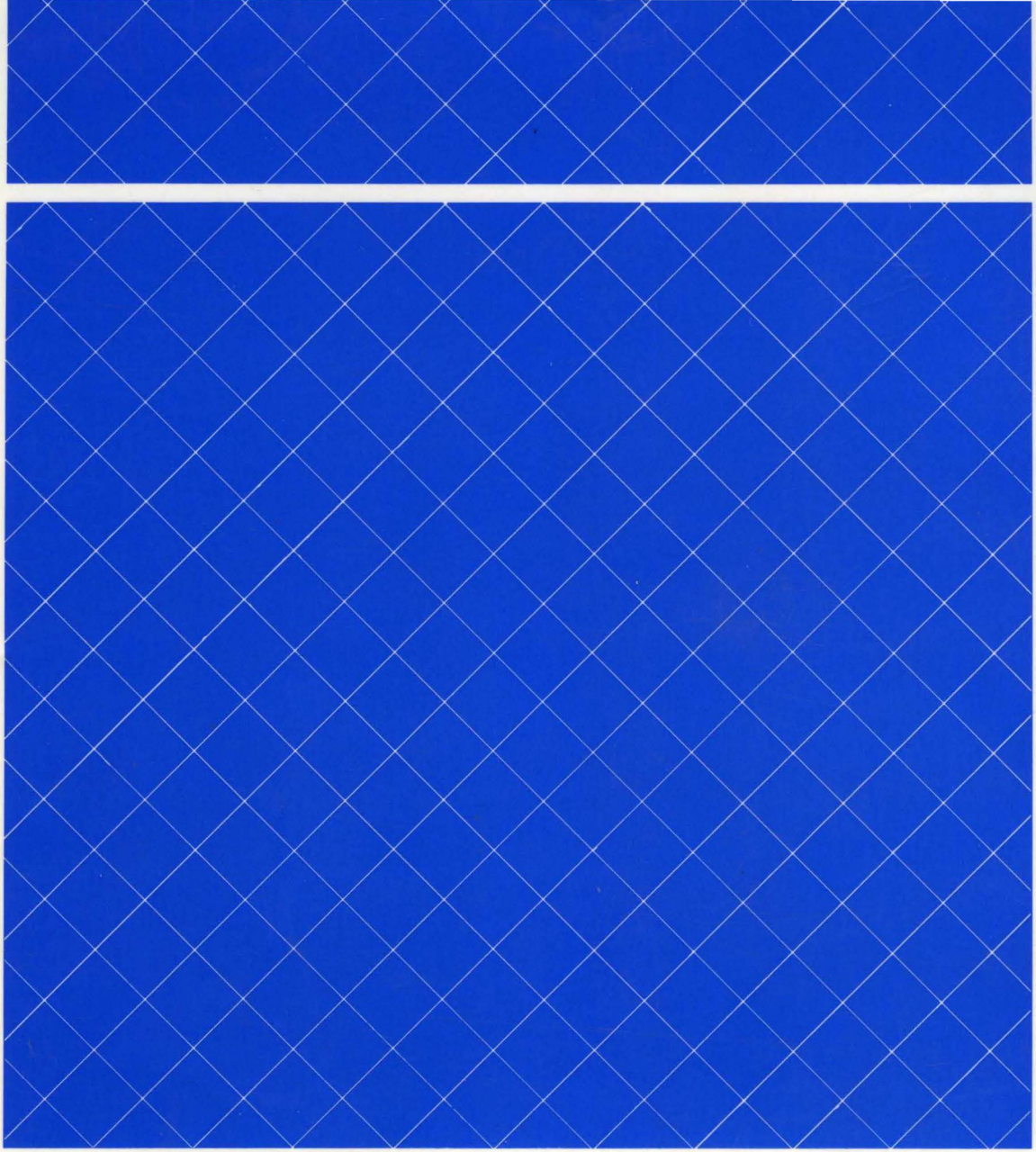

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