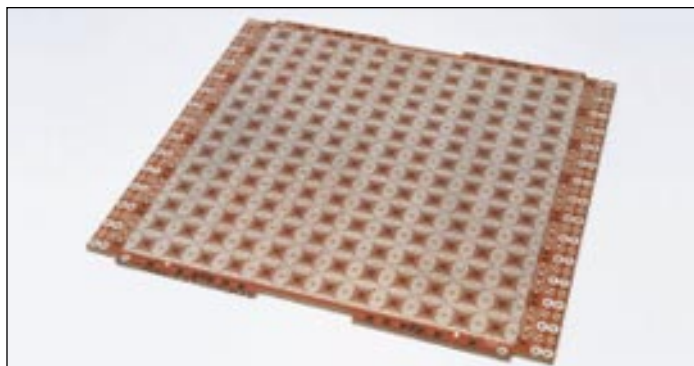
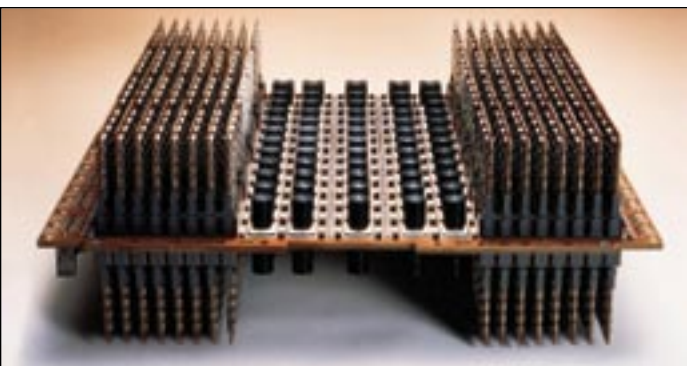
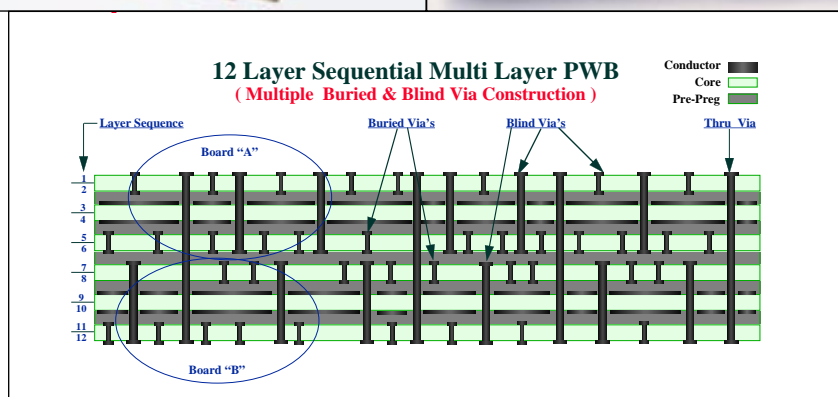


## PRINTED WIRING BOARDS &amp; ASSEMBLIES

*Printed Wiring Board**Printed Circuit Assembly**Cross-section of a sequential laminated Printed Wiring Board*

Fujitsu offers world class manufacturing of custom Printed Wiring Boards (PWBs) and Printed Circuit Assemblies (PCAs) to meet a broad range of customer-driven designs and product applications. We fabricate custom PWBs/PCAs using customers' design data and specifications. There are no specific PWB/PCA product descriptions to publish because all such data is exclusive to each customer and their unique PWB design.

All PWBs are made to order. It is a service-driven, not a product-specific business. Our customers design the product and specify the applicable workmanship and acceptance criteria. We fabricate their PWB/PCA design to meet their specifications utilizing our extensive resources of highly skilled people, the latest equipment, modern facilities and most importantly, process know-how to produce the best-in-class PWBs/PCAs in a timely fashion and at competitive costs.

Fujitsu has over 35 years' experience making some of the most complex and technically advanced PWBs/PCAs in the world. Fujitsu ranks among the top three PWB suppliers in the world today in terms of factory capacity, manufacturing technology, process know-how and investment dollars in new processes/technology R&D.

Fujitsu is well positioned to support volume production of very high density PWBs from 4 to 42 layers.

## Unique Fujitsu Advantages

### **Two Large "World Class" Factories**

- Nagano Factory: 365,000 Sq. Ft. - 2,250 Employees - 160 Process Engineers
- Akashi Factory: 275,000 Sq. Ft. - 875 Employees - 100 Process Engineers
- Total: 640,000 Sq. Ft. - Over 3,000 Employees - 260 Process Engineers

### **Production Capacity = Three Million Sq. Ft./Year**

- One of the Top Three Volume PWB Manufacturers in the World Today
- Over 70% is 8 Layer & Above, High Density Production Product

### **Leading Edge Technology**

- First To Make Single Board CPU For Mainframe Computer (Nov. 1985)
- First To Make Ceramic CPU Board For Supercomputer (Jun. 1990)

### **Over 35 Years Experience In Advanced PWB Technology**

- Volume 4 to 42 Layer / 20:1 Aspect Ratio / .004" Line & Space
- Volume Buried & Blind Via Technology
- Volume BGA, TAB, COB, & Direct Chip Attach Features

### **ISO-9000 Certified**

- Nagano Factory Certified for ISO-9002 in March, 1994
- Akashi Factory Certified for ISO-9002 in March, 1994
- Kawasaki Factory Certified for ISO-9001 in June, 1994

### **100% ODS Free Manufacturing**

- All ODS Have Been Eliminated in Fujitsu's PWB Div. since June, 1993

### **Worldwide Customer Base**

- Europe, Americas and the Far East

## Specifications List

### M/L Constructions

Buried & Blind Vias  
 Sequential Lamination  
 1/4 oz. to 14 oz. Cu  
 .005 in. Buried/Blind Vias  
 .008 in. Through Board Vias  
 Max. 42 Layers / .300 in. Thk.  
 Min. 4 Layers / .016 in. Thk.  
 Plating Aspect Ratio up to 20:1

### Available Materials

Epoxy FR-4  
 Polyimide  
 Cyanate Ester  
 BT Resin  
 Glass Ceramic  
 Teflon

### Pattern Features

Min. Line = 0.004 in.  
 Min. Space = 0.004 in.  
 Min. SMD Component  
 Lead Pitch = 0.010 in.  
 Up To 7 Tracks on 0.100" Grid  
 BGA, TAB, COB, BIT Features

### Surface Finish/Solder Resist

Dryfilm or LPI Solder Resist  
 Solder Resist over Fused Snpb  
 SMOBC with HASL  
 SMOBC with Organic Coating  
 Selective Au/Ni Plating

### Electrical

#### Characteristics

Impedance Control  
 IR Drop  
 Buried Resistors

#### Standard Panel Sizes

10.0 x 20.0	13.0 x 20.0
13.0 x 16.0	16.0 x 20.0
13.0 x 20.0	20.0 x 20.0
16.0 x 20.0	20.0 x 24.0
20.0 x 20.0	21.7 x 28.0
20.0 x 24.0	28.0 x 30.0

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