

Lead free compatible

Tg180 high thermal reliability for Lead free compatible laminate and prepreg

TU-752, TU-75P

TU-752 laminates are made of high quality woven E-glass coated with the epoxy resin system, which provides the laminates with UV-block characteristic, and compatibility with automated optical inspection (AOI) process. These products are suitable for boards that need to survive severe thermal cycles, or to experience excessive assembly work. TU-752 laminates exhibit excellent CTE, superior chemical resistance thermal stability and anti-CAF resistance.

PERFORMANCE AND PROCESSING ADVANTAGES

- Lead Free compatible
- Excellent coefficient of thermal expansion
- Excellent anti-CAF capability
- Superior chemical and thermal resistance
- Fluorescence for AOI
- Optical characteristics provide UV-block property
- High interlayer bonding strength with optimum resin flow
- Low moisture absorption

GENERAL INFORMATION

- **Industry Approvals**

| | |
|-------------------------------|-----------------|
| IPC-4101 Type Designation | /99, /101, /126 |
| UL Designation - ANSI Grade | FR-4 |
| UL File Number | E1 89572 |
| Flammability Rating | 94V-0 |
| Maximum Operating Temperature | 130°C |
- **Standard Availability**

Thickness: 0.002"[0.05mm] to 0.062"[1.58mm], available in sheet or panel form
Copper Foil Cladding: 1/8 to 6oz (HTE) for built-up; 1/8 to 3oz (HTE) for double sides and H to 2oz (MLS)
Prepregs: Available in roll or panel form
Glass Styles: 106, 1080, 2113, 2116, 1506 and 7628, etc.

TYPICAL PROPERTY VALUES FOR TU-752 LAMINATES

| PROPERTY | IPC-4101 | SPEC | TYPICAL VALUES |
|---|---------------------|-------------------|--------------------------|
| Thermal | | | |
| Tg (DMA) | | | 190 °C |
| Tg (DSC) | | | 180 °C |
| Tg (TMA) | E-2/105+des | N/A | 170 °C |
| Td (TGA) | | | 350 °C |
| CTE x-axis | Ambient to Tg | - | 11~15 ppm/°C |
| CTE y-axis | Ambient to Tg | - | 11~15 ppm/°C |
| CTE z-axis | 25 to 260°C | - | 2.7 % |
| Thermal Stress, Solder Float , 288°C | A | > 10 | > 60 sec |
| T-260 | E-2/105+des | N/A | > 60 min |
| T-288 | | | > 15 min |
| Flammability | E-24/125+des | 94V-0 | 94V-0 |
| Electrical | | | |
| Permittivity (RC 50%) | | | |
| 1MHz | C-24/23/50 | < 5.4 | 4.6 |
| 1GHz | C-24/23/50 | - | 4.3 |
| Loss Tangent (RC 50%) | | | |
| 1MHz | C-24/23/50 | < 0.035 | 0.014 |
| 1GHz | C-24/23/50 | - | 0.013 |
| Volume Resistivity | C-96/35/90 | > 10 ⁶ | > 10 ¹⁰ MΩ·cm |
| Surface Resistivity | C-96/35/90 | > 10 ⁴ | > 10 ⁸ MΩ |
| Electric Strength | | > 30 kV/mm | > 40 kV/mm |
| Dielectric Breakdown Voltage | | > 40 kV | > 50 kV |
| Physical | | | |
| Peel Strength, 1.0 oz. Cu foil | A | > 6 | 7~9 lb/inch |
| Flexural Strength | | | |
| Lengthwise | A | > 60,000 | > 65,000 psi |
| Crosswise | A | > 50,000 | > 55,000 psi |
| Bow and Twist | | | |
| 0.020"~0.031" | | Max 1.5 | < 0.8 % |
| 0.032"~0.065" | | Max 1.0 | < 0.8 % |
| >0.066" | | Max 1.0 | < 0.8 % |
| Dimensional Stability | E-4/105+E-2/150 | < 0.03 | < 0.03 % |
| Water Absorption | E-1/105+des+D-24/23 | < 0.8 | 0.18 % |

NOTE:

- 1.The above testing results are based on 1.0mm (0.039") laminates.
- 2.Property values are for information purposes only and are not guaranteed.
- 3.Any sales of these products will be governed by the terms and conditions of the agreement under which they are sold.