



TU-668

Core: TU-668

Prepreg: TU-668P

TU-668/ TU-668P laminate/ prepreg are made of high quality woven E-glass coated with the epoxy resin system, which provides the laminates 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-668 laminates exhibit excellent CTE, superior chemical resistance, and thermal stability for lead free soldering assembly with general CAF resistance.

Applications

- Automotive
- Consumer Electronics

Performance and Processing Advantages

- Lead Free process compatible
- Excellent coefficient of thermal expansion
- Anti-CAF property
- Use friendly FR-4 processing conditions such as oxide, press, drilling and desmear
- 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

Industry Approvals

- IPC-4101 Type Designation : /21, /98, /99, /101
- UL Designation – ANSI Grade: FR-4.0
- UL File Number: E189572
- 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: 1/3 to 6 oz (HTE) for built-up; 1/3 to 3 oz (HTE) for double sides and H to 2 oz (MLS)
- Prepregs: Available in roll or panel form
- Glass Styles: 106, 1080, 2113, 2116, 1506 and 7628 etc.





| Typical Properties for TU-668 Laminate | | | |
|---|---------------------------------------|---|-------------------------------|
| | Typical Values | Test Condition | SPEC |
| Thermal | | | |
| Tg (DMA) Tg (DSC) Tg (TMA) Td (TGA) | 160 °C 150 °C 140 °C 340 °C | E-2/105+des | N/A |
| CTE x-axis CTE y-axis CTE z-axis | 11~15 ppm/°C 11~15 ppm/°C 3.2 % | Ambient to Tg Ambient to Tg 50 to 260°C | N/A N/A < 3.5% |
| Thermal Stress, Solder Float, 288°C | > 60 sec | A | > 10 sec |
| T-260 T-288 | > 60 min > 10 min | E-2/105+des | > 30 min > 5 min |
| Flammability | 94V-0 | E-24/125+des | 94V-0 |
| Electrical | | | |
| Permittivity (RC50%) 1MHz (LCR meter) 1GHz (SPC method/HP4291B) | 4.7 4.4/4.3 | C-24/23/50 | < 5.4 N/A |
| Loss Tangent (RC50%) 1MHz (LCR meter) 1GHz (SPC method/HP4291B) | 0.016 0.018/0.014 | C-24/23/50 | < 0.035 N/A |
| Volume Resistivity | > 10 ¹⁰ MΩ·cm | C-96/35/90 | > 10 ⁶ MΩ·cm |
| Surface Resistivity | > 10 ⁸ MΩ | C-96/35/90 | > 10 ⁴ MΩ |
| Electric Strength | > 40 KV/mm | | > 30 KV/mm |
| Dielectric Breakdown Voltage | > 50 KV | | > 40 KV |
| Mechanical | | | |
| Flexural Strength Lengthwise Crosswise | > 75,000 psi > 65,000 psi | A A | > 60,000 psi > 50,000 psi |
| Peel Strength, 1.0 oz. Cu foil | 8~11 lb/in | A | > 4 lb/in |
| Bow and Twist 0.020"~0.031" 0.032"~0.065" >0.066" | < 0.8% < 0.8% < 0.8% | A | Max 1.5 Max 1.0 Max 1.0 |
| Dimensional Stability | < 0.03% | E-4/105+E-2/150 | < 0.03 % |
| Water Absorption | 0.13 % | E-1/105+des+D-24/23 | < 0.8 % |

NOTE:

- Property values are for information purposes only and not intended for specification.
- Any sales of these products will be governed by the terms and conditions of the agreement under which they are sold.

