TU-901 (T)

Core : TU-901 (T)
Prepreg : TU-901P (T)

TU-901 (T) Tg240 material is made of high performance robust resin system and E-glass fabric. It's a halogen free material and designed to have high modulus, thermal robust, low Dk/Df, low CTE and ultra-low insertion loss features at the same time. TU-901 (T) laminate and TU-901P (T) prepreg are designed to achieve high reliability multilayer, substrate, SiP, radio frequency and ultra-thin HDI boards design and applications. The product is suitable for boards that need stringent X, Y dimensional stability, low board distortion or need to experience excessive harsh environmental work with excellent signal integrity performance. TU-901 (T) materials also exhibit superior chemical resistance, high rigidity, PCB process friendly, excellent long term reliability and CAF performance.

Applications

- Substrate
- HDI, ELIC Design
- High speed / frequency applications
- Aerospace & Military – Harsh environments

Performance and Processing Advantages

- Ultra-High Tg characteristics
- Ultra-Low insertion loss material
- Low coefficient of X/Y/Z thermal expansion
- Excellent resin filling capability for thin dielectric thickness design
- Lead free & modified FR4 processes compatible
- Halogen free environmental friendly material

Industry Approvals

- IPC-4101E Specification Number : 134
- UL File Number : E189572
- ANSI Grade : N/A
- Flammability Rating: 94V-0
- Maximum Operating Temperature: 160°C

Standard Availability

- Thickness: 0.002" [0.05mm] to 0.020" [0.51mm], available in sheet or panel form
- Copper Foil cladding: 1/3 to 2 oz
- Prepregs: Available in roll or panel form
- Glass Styles: 1027, 1067, 1078, 3313 and 2116 etc. and others upon request

The newly developed products are slightly modified and updated after more data has been collected.

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Typical Properties

	Typical Values	Test Conditions
Thermal		
Tg (DMA) Tg (TMA) Td (TGA)	240 °C 180 °C 430 °C	E-2/105
CTE x/y axis* CTE z-axis CTE z-axis CTE z-axis*	6/8 ppm/°C 10/11 ppm/°C 20-30 ppm/°C 70-80ppm/°C 0.8 %	Ambient to Tg (Tensile) Ambient to Tg (Compressing) Ambient to Tg Tg to 260°C 50 to 260°C
Thermal Stress, Solder Float, 288°C	> 60 sec	A
T260 T288 T300	> 60 min > 60 min > 60 min	E-2/105
Flammability	94V-0	E-24/125
Electrical		
Permittivity (RC70%) 10GHz (SPDR method) Impedance simulation DK	 3.64 3.15	E-2/105
Loss Tangent (RC70%) 10GHz (SPDR method)	 0.0034	E-2/105
Volume Resistivity	> 10^{10} MΩ·cm	C-96/35/90
Surface Resistivity	> 10^{8} MΩ	C-96/35/90
Electric Strength	> 40 kV/mm	A
Dielectric Breakdown Voltage	> 50 KV	A
Mechanical		
Flexural Strength Lengthwise Crosswise	 > 60,000 psi > 50,000 psi	 A A
Peel Strength 1 oz. RTF Cu foil	 >3.5 lb/in	 A
Water Absorption	0.08 %	E-1/105+des+D-24/23

NOTE:
1. Property values are for information purposes only and not intended for specification.
2. Any sales of these products will be governed by the terms and conditions of the agreement under which they are sold.
3. This product is based on a patent pending technology.
4. Mark*:Tensile#2116*1ply THK=0.1mm / Compressing#2116*10ply, THK=1.0mm)

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