TU-865S

Core: TU-865S

Prepreg: TU-865P S

TU-865S CTI≥600 material is made of epoxy resin and E-glass fabric. It's a halogen free material and design to have both features for harsh environment, high reliability application and superior electrical performance at the same time. TU-865S achieves flammability class of UL94V-0 by incorporating phosphorous and nitrogen compounds. The material is compatible with the AOI process and exhibit the UV-block characteristic. TU-865S P is prepreg designed for use with TU-865S laminate for making multilayer printed wire boards. TU-865S is also available for single/double sided application. This series of green materials eliminate the use of halogenated resins with excellent performance due to the potential hazardous effects from the environmental concerns. These products are suitable for boards that need to survive severe thermal cycling, or to experience excessive assembly work. TU-865S laminates also exhibit superior chemical resistance, dimensional stability and moisture resistivity for lead free soldering assembly and CAF resistance.

Applications

- Automotives, Harsh environments

Performance and Processing Advantages

- Halogen, antimony, and red phosphorous free
- Higher comparative tracking index (CTI) performance
- Mid-loss performance category material
- Low coefficient of thermal expansion
- Excellent moisture resistance
- Lead free processing compatible
- Anti-CAF capability
- Environmental friendly materials

Industry Approvals

- IPC-4101E Type Designation : /127, /128, /130
- UL Designation - No-ANSI Grade
- UL File Number: E189572
- Flammability Rating: 94V-0

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
- Prepregs: Available in roll or panel form
- Glass Styles: 106, 1080, 2113, 2116, 1506 and 7628 etc.

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Typical Properties for TU-865S Laminate

	Typical Values	Conditioning	IPC-4101E /130
Thermal			
Tg (DMA) Tg (DSC) Tg (TMA) Td (TGA)	>200°C 170°C 165°C 400°C	E-2/105	 >170°C >340°C
CTE x-axis CTE y-axis CTE z-axis	11~15 ppm/°C 11~15 ppm/°C 2.8 %	E-2/105	N/A N/A < 3.0%
Thermal Stress, Solder Float, 288°C	 > 60 sec	A	 > 10 sec
T260 T288	> 60 min > 60 min	E-2/105	> 30 min > 15 min
Flammability	94V-0	E-24/125	94V-0
CTI(Volts)	≥ 600 V	A	N/A
Electrical			
Permittivity (RC50%) 1 GHz (SPC method) 10GHz (SPC method)	 5.0 4.9	E-2/105	 N/A
Loss Tangent (RC50%) 1 GHz (SPC method) 10GHz (SPC method)	 0.014 0.015	E-2/105	 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	> 50 KV	-	> 40 KV
Mechanical			
Flexural Strength Lengthwise Crosswise	 > 60,000 psi > 50,000 psi	 A A	 > 60,000 psi > 50,000 psi
Peel Strength, 1.0 oz. Cu foil	 5~8 lb/in	A	 > 4 lb/in
Water Absorption	0.13 %	E-1/105+D-24/23	< 0.8 %

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.

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