

Core : TU-747T**Prepreg : TU-747P T**

TU-747T

TU-747T/TU-747P T halogen free materials are made of epoxy resin and regular E-glass fabric. Unlike conventional FR-4 material using brominated resin as flame retardant, TU-747T/TU-747P T achieve flammability class of UL94V-0 by incorporating phosphorous compounds in the materials. TU-747T is designed for regular multilayer and HDI sequential lamination consumer applications. The materials are compatible with the UV/AOI process, black or brown oxide treatment FR-4 processes. TU-747T laminates also exhibit superior chemical resistance, thermal stability and CAF long term reliability.

Applications

- NB, PC, consumer
- Server, workstation
- Mobile Communication

Performance and Processing Advantages

- Halogen, antimony and red phosphorous free
- Environmental friendly materials
- Compatible to PCB processes
- Low coefficient of thermal expansion
- Anti-CAF capability

Industry Approvals

- IPC-4101 Type Designation : /127, /128
- UL Designation – ANSI Grade: FR-4.1
- 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 5 oz, HTE or RTF grade foil upon request.
- Prepregs: Available in roll or panel form
- Glass Styles: 1027, 1037, 106, 1067, 1078, 1080, 2113, 2116, 1506 and 7628 etc. Others fabric types upon request.



Typical Properties For TU-747T Laminate			
	Typical Values	Test Condition	SPEC
Thermal			
Tg (TMA)	150 °C	E-2/105+des	N/A
Td (TGA)	380 °C		> 325°C
CTE x-axis	11~15 ppm/°C	Ambient to Tg	N/A
CTE y-axis	11~15 ppm/°C	Ambient to Tg	N/A
CTE z-axis	2.9 %	50 to 260°C	< 3.5%
Thermal Stress, Solder Float, 288°C	> 60 sec	A	> 10 sec
T-260	> 60 min	E-2/105+des	> 30 min
T-288	> 60 min		> 5 min
Flammability	94V-0	E-24/125+des	94V-0
Electrical			
Permittivity (RC75%) 1GHz (SPC method/HP4291B)	3.8/3.6	C-24/23/50	< 5.4 N/A
Loss Tangent (RC75%) 1GHz (SPC method/HP4291B)	0.014/0.012	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
Mechanical			
Flexural Strength Lengthwise	> 60,000 psi	A	> 60,000 psi
Crosswise	> 50,000 psi	A	> 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"	< 0.8%	A	Max 1.5
0.032" ~ 0.065"	< 0.8%		Max 1.0
> 0.066"	< 0.8%		Max 1.0
Water Absorption	0.12 %	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.

