



# TU-742 HF

**Core: TU-742 HF****Prepreg: TU-74P HF**

TU-742 HF/TU-74P HF halogen free materials are made of epoxy resin and E-glass fabric. Unlike conventional FR-4 material using brominated resin as flame retardant, TU-742 HF/TU-74P HF achieve flammability class of UL94V-0 by incorporating nitrogen compounds in the materials. The materials are compatible with the AOI process and exhibit the UV-block characteristic. TU-74P HF is designed for use with TU-742 HF for making multilayer printed wire boards. TU-742 HF is also available for single/double sided application. This series of green materials are designed to eliminate the use of halogenated resins due to the potential hazardous effects from the environmental concerns. TU-742 HF laminates also exhibit superior chemical resistance, thermal stability and CAF resistance.

## Applications

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

## Performance and Processing Advantages

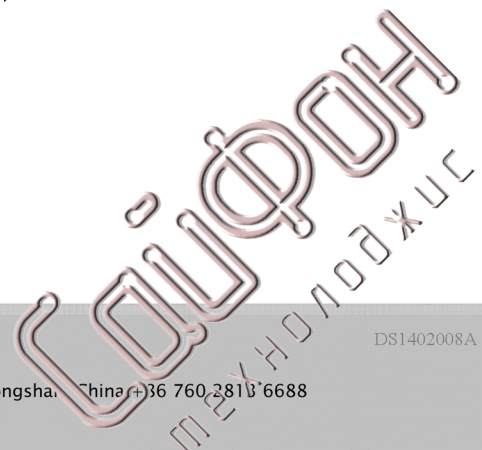
- Halogen, antimony and red phosphorous free
- Environmental friendly materials
- Compatible to PCB processes
- Low coefficient of thermal expansion
- Anti-CAF capability

## 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) 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-742 HF Laminate**

	Typical Values	Test Condition	SPEC
<b>Thermal</b>			
Tg (TMA)	150 °C	E-2/105+des	N/A
Td (TGA)	370 °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	3.1 %	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
<b>Electrical</b>			
Permittivity (RC50%) 1MHz (LCR meter)	4.7	C-24/23/50	< 5.4
1GHz (SPC method/HP4291B)	4.6/4.4		N/A
Loss Tangent (RC50%) 1MHz (LCR meter)	0.013	C-24/23/50	< 0.035
1GHz (SPC method/HP4291B)	0.012/0.010		N/A
Volume Resistivity	> 10 <sup>10</sup> MΩ·cm	C-96/35/90	> 10 <sup>9</sup> MΩ·cm
Surface Resistivity	> 10 <sup>8</sup> MΩ	C-96/35/90	> 10 <sup>4</sup> MΩ
<b>Mechanical</b>			
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	0.15 %	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.
- This product is based on a patent pending technology.

