

Green material Lead free compatible  
Halogen free laminate and prepreg

## TU-742 HF, 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.

### 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

### GENERAL INFORMATION

- Industry Approvals

UL Designation - ANSI Grade	FR-4
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 5oz (HTE) for built-up; 1/3 to 3oz (HTE) for double sides and H to 2oz (MLS)  
Prepregs: Available in roll or panel form  
Glass Styles: 106, 1080, 2113, 2116, 1506 and 7628, etc.

**TYPICAL PROPERTIES FOR TU-742 HF LAMINATES**

PROPERTY	IPC-4101	SPEC	TYPICAL VALUES
<b>Thermal</b>			
Tg (TMA)			150 °C
Td (TGA)	E-2/105+des	N/A	370 °C
CTE x-axis	Ambient to Tg	-	11~15 ppm/°C
CTE y-axis	Ambient to Tg	-	11~15 ppm/°C
CTE z-axis	25 to 260°C	-	3.1 %
<b>Thermal Stress,</b>			
Solder Float , 288°C	A	> 10	> 60 sec
T-260	E-2/105+des	N/A	> 60 min
Flammability	E-24/125+des	94V-0	94V-0
<b>Electrical</b>			
<b>Permittivity (RC 50%)</b>			
1MHz ( LCR meter )	C-24/23/50	< 5.4	4.7
1GHz ( HP4291B )	C-24/23/50		4.4
<b>Loss Tangent (RC 50%)</b>			
1MHz ( LCR meter )	C-24/23/50	< 0.035	0.013
1GHz ( HP4291B )	C-24/23/50	-	0.010
Volume Resistivity	C-96/35/90	> 10 <sup>6</sup>	> 10 <sup>10</sup> MΩ·cm
Surface Resistivity	C-96/35/90	> 10 <sup>4</sup>	> 10 <sup>8</sup> MΩ
<b>Mechanical</b>			
<b>Peel Strength</b>			
1.0 oz. Cu foil	A	> 6	8~11 lb/inch
<b>Flexural Strength</b>			
Lengthwise	A	> 60,000	> 60,000 psi
Crosswise	A	> 50,000	> 50,000 psi
<b>Bow and Twist</b>			
0.020"~0.031"		Max 1.5	< 0.8 %
0.032"~0.065"		Max 1.0	< 0.8 %
>0.066"		Max 1.0	< 0.8 %
Water Absorption	E-1/105+des+D-24/23	< 0.8	0.15 %

## NOTE:

1.Property values are for information purposes only and are not guaranteed.

2.Any sales of these products will be governed by the terms and conditions of the agreement under which they are sold.