

Lead free compatible**Hi-Tg high thermal reliability for Lead free compatible laminate and prepreg**

TU-768, TU-768P

TU-768/ TU-768P laminate/ prepreg are made of high quality woven E-glass coated with the epoxy resin system, which provides the laminates with UV-block characteristic, and compatibility with automated optical inspection (AOI) process. These products are suitable for boards that need to survive severe thermal cycles, or to experience excessive assembly work. TU-768 laminates exhibit excellent CTE, superior chemical resistance and thermal stability plus CAF resistance property.

PERFORMANCE AND PROCESSING ADVANTAGES

- Lead Free process compatible
- Excellent coefficient of thermal expansion
- Anti-CAF property
- Superior chemical and thermal resistance
- Fluorescence for AOI
- Moisture resistance

GENERAL INFORMATION

- **Industry Approvals**

UL Designation – ANSI Grade	FR-4
UL File Number	E1 89572
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: 1/8 to 12oz (HTE) for built-up; 1/8 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-768 LAMINATES

PROPERTY	IPC-4101	SPEC	TYPICAL VALUES
Thermal			
T _g (DMA)			190 °C
T _g (DSC)			180 °C
T _g (TMA)	E-2/105+des	N/A	170 °C
T _d (TGA)			350 °C
CTE x-axis	Ambient to T _g	-	11~15 ppm/°C
CTE y-axis	Ambient to T _g	-	11~15 ppm/°C
CTE z-axis	25 to 260°C	-	2.7 %
Thermal Stress, Solder Float , 288°C			
	A	> 10	> 60 sec
T-260			> 60 min
T-288	E-2/105+des	N/A	> 15 min
Flammability	E-24/125+des	94V-0	94V-0
Electrical			
Permittivity (RC 50%)			
1GHz (HP 4291B)			4.3
5GHz (SPC method)	C-24/23/50	< 5.4	4.3
10GHz (SPC method)			4.3
Loss Tangent (RC 50%)			
1GHz (HP 4291B)			0.019
5GHz (SPC method)	C-24/23/50	< 0.035	0.021
10GHz (SPC method)			0.023
Volume Resistivity	C-96/35/90	> 10 ⁶	> 10 ¹⁰ MΩ·cm
Surface Resistivity	C-96/35/90	> 10 ⁴	> 10 ⁸ MΩ
Electric Strength		>30 kV/mm	> 40 kV/mm
Dielectric Breakdown Voltage		>40 kV	> 50 kV
Mechanical			
Young's Modulus			
Warp Direction	-	G Pa	25
Fill Direction			22
Flexural Strength			
Lengthwise	A	> 60,000	> 65,000 psi
Crosswise	A	> 50,000	> 55,000 psi
Peel Strength			
1.0 oz. Cu foil	A	> 4	7~9 lb/inch
Water Absorption	E-1/105+des+D-24/23	< 0.8	0.18 %

NOTE:

- Property values are for information purposes only and are not guaranteed.
- Any sales of these products will be governed by the terms and conditions of the agreement under which they are sold.