



Validation Services High-Tg and High Thermal Reliability Laminate and Prepreg  
LISTED



# TU-768

Core: TU-768

Prepreg: 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.

## Applications

- Consumer Electronics
- Server, workstation
- Automotive

## 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

## Industry Approvals

- IPC-4101E Type Designation : /98, /99, /101, /126
- IPC-4101E/126 Validation Services QPL Certified
- UL Designation – ANSI Grade: FR-4.0
- 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: 1/8 to 12 oz (HTE) for built-up; 1/8 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.



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Typical Properties for TU-768 Laminate			
	Typical Values	Conditioning	IPC-4101 /126
<b>Thermal</b>			
Tg (DMA)	190°C	E-2/105	> 170°C
Tg (DSC)	180°C		
Tg (TMA)	170°C		
Td (TGA)	350°C		
CTE x-axis	11~15 ppm/°C	E-2/105	N/A
CTE y-axis	11~15 ppm/°C		N/A
CTE z-axis	2.7 %		< 3.0%
Thermal Stress, Solder Float, 288°C	> 60 sec	A	> 10 sec
T260	> 60 min	E-2/105	> 30 min
T288	> 15 min		> 15 min
T300	> 2 min		> 2 min
Flammability	94V-0	E-24/125	94V-0
<b>Electrical</b>			
Permittivity (RC50%)	4.4/4.3 4.3 4.3	E-2/105	< 5.2 N/A N/A
1GHz (SPC method/HP 4291B)			
5GHz (SPC method)			
10GHz (SPC method)			
Loss Tangent (RC50%)	0.019/0.018 0.021 0.023	E-2/105	< 0.035 N/A N/A
1GHz (SPC method/HP4291B)			
5GHz (SPC method)			
10GHz (SPC method)			
Volume Resistivity	> 10 <sup>10</sup> MΩ·cm	C-96/35/90	> 10 <sup>6</sup> MΩ·cm
Surface Resistivity	> 10 <sup>8</sup> MΩ	C-96/35/90	> 10 <sup>4</sup> MΩ
Electric Strength	> 40 KV/mm	A	> 30 KV/mm
Dielectric Breakdown Voltage	> 50 KV	A	> 40 KV
<b>Mechanical</b>			
Young's Modulus	25 GPa 22 GPa	A	N/A
Warp Direction			
Fill Direction			
Flexural Strength	> 60,000 psi > 50,000 psi	A	> 60,000 psi
Lengthwise		A	> 50,000 psi
Crosswise			
Peel Strength, 1.0 oz RTF Cu foil	7~9 lb/in	A	> 4 lb/in
Water Absorption	0.18 %	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.