



# TU-84P MF

Prepreg: TU-84P MF

TU-84P MF medium flow, halogen-free prepreg consist of optimal resin flow specially formulated for unique purpose bonding application. The special design TU-84P MF medium flow, halogen-free prepreg is appropriate for applying in multiple layer rigid-flex bonding, heat sink bonding and die cavity board application. TU-84P MF medium flow prepreg also provide excellent bonding performance with a variety of polyimide materials and with excellent high Tg, low CTE thermal performance for sequential lamination and lead-free processes.

## Applications

- Rigid-flex
- Heat sink, Cavity

## Performance and Processing Advantages

- Stable resin flow and resin filling capability
- Excellent bonding strength with polyimide materials
- Low resin powder dust generation
- Higher Tg and halogen free characteristics
- Lead Free process compatible
- Reduced Z-axis thermal expansion
- Superior dimensional stability, thickness uniformity and flatness
- Good drilling processability
- Excellent through-hole and soldering reliability
- Superior dielectric thickness control
- Compatible with AOI process with UV-block property

## Industry Approvals

- IPC-4101E Type Designation : /127, /128, /130
- IPC-4101E/130 Validation Services QPL Certified
- 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] (106 type x 1 ply) to 0.003" [0.08mm] (1080 type x 1 ply)
- Prepregs: Available in roll or panel form
- Glass Styles: 106 and 1080, other prepreg grades are available upon request





Typical Properties for TU-84P MF Prepreg			
	Typical Values	Test Condition	SPEC
<b>Thermal</b>			
Tg (DMA)	190 °C	E-2/105+des	N/A
Tg (TMA)	165 °C		
Td (TGA)	390 °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	2.1 %	50 to 260°C	< 3.0%
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		> 15 min
Flammability	94V-0	E-24/125+des	94V-0
<b>Electrical</b>			
Permittivity (RC50%)	4.4	C-24/23/50	N/A
1GHz (HP4291B)			
5GHz (SPC method)			
10GHz (SPC method)			
Loss Tangent (RC50%)	0.010	C-24/23/50	N/A
1GHz (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
<b>Mechanical</b>			
Young's Modulus	26 GPa	A	N/A
Warp Direction			
Fill Direction	24 GPa		
Flexural Strength	> 75,000 psi	A	> 60,000 psi
Lengthwise			> 50,000 psi
Crosswise	> 65,000 psi	A	
Peel Strength, 1.0 oz. Cu foil	9~12 lb/in	A	> 4 lb/in
Dimensional Stability	< 0.03%	E-4/105+E-2/150	< 0.03 %
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.

