



TU-862S

Core: TU-862S

Prepreg: TU-862P S

TU-862S Hi-Tg halogen free Mid-loss material is made of high performance epoxy resin and regular woven E-glass fabric, designed with lower dielectric constant and dissipation factor for high speed mid-loss multilayer circuit server board applications. Unlike conventional FR-4.0 material using brominated resin as flame retardant. TU-862S achieves flammability class of UL94V-0 by incorporating phosphorus and nitrogen compounds in the materials. TU-862S material is suitable for environmental protection lead free process and also compatible with FR-4 processes. This green material is designed to achieve thermal robust, mid-loss signal attenuation and eliminate the use of potential hazardous halogenated resins.

Applications

- Backpanel, High performance computing
- Line cards, Storage
- Servers, Telecom, Base station
- Office Routers

Performance and Processing Advantages

- Lower Dk & Df performance, mid-loss applications
- Lead free process compatible
- Environmental friendly materials
- Compatible to PCB processes
- Low coefficient of thermal expansion
- Moisture resistance
- Anti-CAF capability

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] to 0.062" [1.58mm], available in sheet or panel form
- Copper Foil Cladding: 1/3 to 4 oz for built-up & double sides
- Prepregs: Available in roll or panel form
- Glass Styles: 106, 1080, 3313, 2116 etc and other prepreg grades are available upon request





Typical Properties			
	Typical Values	Test Condition	SPEC
Thermal			
Tg (DMA)	200 °C	E-2/105+des	N/A
Tg (DSC)	175 °C		
Tg (TMA)	165 °C		
Td (TGA)	370 °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	2.2 %	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
Electrical			
Permittivity (RC50%)		C-24/23/50	N/A
1GHz (SPC method)	4.3		
5GHz (SPC method)	4.2		
10GHz (SPC method)	4.2		
Loss Tangent (RC50%)		C-24/23/50	N/A
1GHz (SPC method)	0.011		
5GHz (SPC method)	0.011		
10GHz (SPC method)	0.012		
Volume Resistivity	> 10 ¹⁰ MΩ·cm	C-96/35/90	> 10 ⁶ MΩ·cm
Surface Resistivity	> 10 ⁸ MΩ	C-96/35/90	> 10 ⁴ MΩ
Electric Strength	> 40 KV/mm		> 30 KV/mm
Dielectric Breakdown Voltage	> 50 KV		> 40 KV
Mechanical			
Flexural Strength		A	> 60,000 psi
Lengthwise	> 60,000 psi		
Crosswise	> 50,000 psi	A	> 50,000 psi
Peel Strength, 1.0 oz. Cu foil	7~9 lb/in	A	> 4 lb/in
Water Absorption	0.13 %	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.

