TU-862S

Core: TU-862S

Prepreg: TU-862P S

TU-862S High 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

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Typical Properties

	Typical Values	Conditioning	IPC-4101 /130
Thermal			
Tg (DMA)	200°C		
Tg (DSC)	175°C	E-2/105	>170°C
Tg (TMA)	165°C		
Td (TGA)	370°C		>340°C
CTE x-axis	11~15 ppm/°C		N/A
CTE y-axis	11~15 ppm/°C	E-2/105	N/A
CTE z-axis	2.2 %		< 3.0%
Thermal Stress, Solder Float, 288°C	> 60 sec	A	> 10 sec
T260	> 60 min		> 30 min
T288	> 60 min	E-2/105	> 15 min
T300	> 30 min		> 2 min
Flammability	94V-0	E-24/125	94V-0
Electrical			
Permittivity (RC50%)			
1GHz (SPC method)	4.3		
5GHz (SPC method)	4.2	E-2/105	N/A
10GHz (SPC method)	4.2		
Loss Tangent (RC50%)			
1GHz (SPC method)	0.011		
5GHz (SPC method)	0.011	E-2/105	N/A
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	A	> 30 KV/mm
Dielectric Breakdown	> 50 KV	A	> 40 KV
Mechanical			
Flexural Strength			
Lengthwise	> 60,000 psi	A	> 60,000 psi
Crosswise	> 50,000 psi	A	> 50,000 psi
Peel Strength, 1.0 oz RTF Cu foil	5~8 lb/in	A	> 4 lb/in
Water Absorption	0.13 %	E-1/105+des+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.

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