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Low Dk/Df and High Thermal Reliability Laminate and Prepreg







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TU-872 SLK

Core: TU-872 SLK

Prepreg: TU-87P SLK

TU-872 SLK is based on a high performance modified epoxy FR-4 resin. This material is reinforced with regular woven E-glass and designed with low dielectric constant and low dissipation factor for high speed low loss and high frequency multilayer circuit board application. TU-872 SLK material is suitable for environmental protection lead free process and also compatible with FR-4 processes. TU-872 SLK laminates also exhibit excellent moisture resistance, improved CTE, superior chemical resistance, thermal stability, CAF resistance, and toughness enhanced by an allyl network forming compound.

Applications

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

Performance and Processing Advantages

- Excellent electrical properties
- Dielectric constant less than 4.0
- Dissipation factor less than 0.010
- Stable and flat Dk/Df performance
- Compatible with modified FR-4 processes
- Excellent moisture resistance and Lead Free reflow process compatible
- Improved Z-axis thermal expansion
- Anti-CAF capability
- Superior dimensional stability, thickness uniformity and flatness
- Excellent through-hole and soldering reliability

Industry Approvals

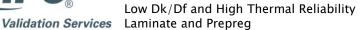
- IPC-4101E Type Designation : /29, /99, /101, /126
- IPC-4101E/126 Validation Services QPL Certified
- UL Designation ANSI Grade: FR-4.0
- UL File Number: E189572
- Flammability Rating: 94V-0
- Maximum Operating Temperature: 130°C

Standard Availability

- Thickness: 0.002" [0.05mm] to 0.062" [1.58mm], available in sheet or panel form
- Copper Foil Cladding: 1/3 to 5 oz for built-up & double sides
- Prepregs: Available in roll or panel form
- Glass Styles: 106, 1080, 3313, 2116 and other prepreg grades are available upon request.



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Delivering Value through Innovation and Dedication

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Typical Properties for TU-872 SLK Laminate				
	Typical Values	Conditioning	IPC-4101 /126	
Thermal				
Tg (DMA)	220 °C			
Tg (DSC)	200 °C	E-2/105	> 170°C	
Tg (TMA)	190 ℃	L-2/103		
T L (TC A)	240.00		2.400	

TY (DIMA)	220 C		
Tg (DSC)	200 °C	F 2/10F	> 170°C
Tg (TMA)	190 ℃	E-2/105	
Td (TGA)	340 °C		> 340°C
CTE x-axis	12~15 ppm/°C		N/A
CTE y-axis	12~15 ppm/°C	E-2/105	N/A
CTE z-axis	2.3 %		<3.0%
Thermal Stress,			
Solder Float, 288°C	> 60 sec	A	> 10 sec
T260	60 min		> 30 min
T288	20 min	E-2/105	> 15 min
T300	5 min		> 2 min
Flammability	94V-0	E-24/125	94V-0
Electrical			
Permittivity (RC50%)			
1GHz (SPC method/4291B)	4.0/3.8		< 5.2
5GHz (SPC method)	3.9	E-2/105	_
10GHz (SPC method)	3.8		-
Loss Tangent (RC50%)			
1GHz (SPC method/4291B)	0.008/0.006		
5GHz (SPC method)	0.008	E-2/105	< 0.035
10GHz (SPC method)	0.009	·	
Volume Resistivity	> 10 ¹⁰ MΩ • cm	C-96/35/90	> 106 MΩ • cm
Surface Resistivity	> 10 ⁸ MΩ	C-96/35/90	$> 10^4 \text{M}\Omega$
Electric Strength	> 40 KV/mm	A	> 30 KV/mm
Dielectric Breakdown	> 50 KV	A	N/A
Mechanical			
Young's Modulus			
Warp Direction	26 GPa	A	N/A
Fill Direction	24 GPa		
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	4~7 lb/in	A	> 4 lb/in
Water Absorption	0.13 %	E-1/105+D-24/23	< 0.5 %

- 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.
- 3. This product is based on a patent pending technology.

