TU-872 LK

Core: TU-872 LK

Prepreg: TU-87P LK

TU-872 LK 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 LK material is suitable for environmental protection lead free process and also compatible with FR-4 processes. TU-872 LK laminates also exhibit excellent CTE, superior chemical resistance, thermal stability, CAF resistance, and toughness enhanced by an allyl network forming compound.

Applications

- 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 most FR-4 processes
- Lead free 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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Typical Properties for TU-872 LK Laminate

	Typical Values	Conditioning	IPC-4101 /126
Thermal			
Tg (DMA)	220°C		
Tg (DSC)	200°C	E-2/105	> 170°C
Tg (TMA)	190°C		
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	2.5 %		< 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)	3.8	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	> 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	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	0.15 %	E-1/105+D-24/23	< 0.5 %

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

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