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Tg150 epoxy multilayer laminate and prepreg

TU-622-5, TU-62P-5

TU-622-5 laminates are made of high quality woven E-glass coated with the epoxy resin system, which provides the laminates with UV-block characteristic, and compatibility with automated optical inspection (AOI) process. TU-62P-5 is designed for use with TU-622-5 following standard processing conditions to make FR-4 thin-core multilayer printed circuit boards. TU-622-5 laminates also exhibit superior chemical resistance thermal stability.

PERFORMANCE AND PROCESSING ADVANTAGES

- Cost effective way to meet the higher Tg requirement
- Use friendly FR-4 processing conditions such as oxide, press, drilling and desmear
- High chemical and thermal resistance
- Superior dimensional stability, thickness uniformity and flatness
- Reduced Z-axis thermal expansion
- Fluorescence for AOI
- Optical characteristics provide UV-block property
- High interlayer bonding strength with optimum resin flow
- Superior dielectric thickness control
- Wide processing window for maximum lamination performance

GENERAL INFORMATION

- Industry Approvals

UL Designation - ANSI Grade	FR-4
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 5oz (HTE) for built-up; 1/3 to 12oz (HTE) for double sides and H to 2oz (MLS)
Prepregs: Available in roll or panel form
Glass Styles: 106, 1080, 2113, 2116, 1506 and 7628, etc.

TYPICAL PROPERTIES FOR TU-622-5 LAMINATES

PROPERTY	IPC-4101	SPEC	TYPICAL VALUES
Thermal			
Tg (DMA)	E-2/105+des	N/A	155 ℃
Tg (DSC)			145 ℃
Tg (TMA)			135 ℃
Td (TGA)			310 ℃
CTE x-axis	Ambient to Tg	-	14~18 ppm/℃
CTE y-axis	Ambient to Tg	-	14~18 ppm/℃
CTE z-axis	25 to 260℃	-	4.1 %
Thermal Stress, Solder Float , 288℃	A	> 10	> 60 sec
T-260	E-2/105+des	N/A	> 20 min
Flammability	E-24/125+des	94V-0	94V-0
Electrical			
Permittivity (RC 50%)	(IPC-TM-650 2.5.5.9)		
1MHz	C-24/23/50	< 5.4	4.5
1GHz	C-24/23/50	-	4.2
Loss Tangent (RC 50%)	(IPC-TM-650 2.5.5.9)		
1MHz	C-24/23/50	< 0.035	0.016
1GHz	C-24/23/50	-	0.015
Volume Resistivity	C-96/35/90	$> 10^6$	$> 10^{10}$ MΩ·cm
Surface Resistivity	C-96/35/90	$> 10^4$	$> 10^8$ MΩ
Physical			
Peel Strength, 1.0 oz. Cu foil	A	> 6	9~12 lb/inch
Flexural Strength			
Lengthwise	A	> 60,000	> 80,000 psi
Crosswise	A	> 50,000	> 70,000 psi
Bow and Twist			
0.020"~0.031"		Max 1.5	< 0.8 %
0.032"~0.065":		Max 1.0	< 0.8 %
>0.066"		Max 1.0	< 0.8 %
Dimensional Stability	E-4/105+E-2/150	< 0.03	< 0.03 %
Water Absorption	E-1/105+des+D-24/23	< 0.8	0.18 %

NOTE:
1. Property values are for information purposes only and are not guaranteed.
2. Any sales of these products will be governed by the terms and conditions of the agreement under which they are sold.