

VT-464G

UL Approval: E214381 Version: Preliminary 1 /130

Laminate/Prepreg

General Information

- > SLF Material
- > Halogen Free & High Tg
- > Low Dk & Very Low Df
- > Excellent Thermal Reliability
- > High Modulus & Low CTE

Application

Handheld equipment, High Frequency & High Speed, Satellite Communication, Navigation, GPS, LTE, etc

Availability

- > Core Thickness: 0.0012" (0.03mm) to 0.200" (5mm), available in sheet or panel form
- > Copper Foil: 1/4oz to 12oz
- > Prepregs are available in roll or panel form
- > E-Glass styles: 7628, 1506, 2113, 3313, 2116, 1080, 1078, 106, 1067, 1037, 1027, 1017 etc

Properties		Prepreg		Laminate
Storage Condition	Temperature	Below 23°C (73°F)	Below 5°C (41°F)	Room
	Relative humidity	Below 55% RH	/	/
Shelf Life		3 months	6 months	24 months (airproof)

The prepreg exceeding shelf life should be retested.

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Properties Sheet IPC-4101E /130

Properties		Test Method	Units	Specification	Typical Value
Thermal Properties					
Tg	DSC	IPC-TM-650 2.4.25	°C	170 minimum	230
Td		ASTM D3850	°C	340 minimum	420
T260		IPC-TM-650 2.4.24.1	Minute	30 minimum	>60
T288		IPC-TM-650 2.4.24.1	Minute	15 minimum	>60
Thermal Stress @ 288°C		IPC-TM-650 2.4.13.1	Second	Pass 10s	>600
Z-axis CTE	Before Tg	IPC-TM-650 2.4.24	ppm/°C	60 maximum	30
	After Tg	IPC-TM-650 2.4.24	ppm/°C	300 maximum	NA
	Total Expansion [50~260°C]	IPC-TM-650 2.4.24	%	3.0 maximum	1.4
X-Y CTE		IPC-TM-650 2.4.24.5	ppm/°C	–	9/10
MOT		UL 94	°C	–	130
Electrical Properties					
DK	@ 1GHz	Cavity Resonator	–	5.2 maximum	3.5/3.3
(RC 50%/70%)	@ 2GHz	Cavity Resonator	–	–	3.4/3.2
DF	@ 1GHz	Cavity Resonator	–	0.035 maximum	0.003/0.003
(RC 50%/70%)	@ 2GHz	Cavity Resonator	–	–	0.004/0.004
Volume Resistivity	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ-cm	1.0E+4 minimum	5.0E+8
	E-24/125	IPC-TM-650 2.5.17.1	MΩ-cm	1.0E+3 minimum	5.0E+6
Surface Resistivity	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ	1.0E+4 minimum	5.0E+7
	E-24/125	IPC-TM-650 2.5.17.1	MΩ	1.0E+3 minimum	5.0E+6
Electrical Strength		IPC-TM-650 2.5.6.2	Volt/mil (KV/mm)	762 [30] minimum	1400 [55]
Dielectric Breakdown		IPC-TM-650 2.5.6	KV	40 minimum	60
Comparative Tracking Index (CTI)		ASTM D3638	Rating (Volt)	–	Grade 3 [175~250]
Arc Resistance		ASTM D495	Second	60 minimum	195
Mechanical Properties					
Peel Strength (1oz)	As received	IPC-TM-650 2.4.8	lb/in (N/mm)	–	6.0 (1.05)
	After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	6 (1.05) minimum	6.0 (1.05)
Flexural Modulus	Warp	IPC-TM-650 2.4.24.4	GPa	–	27-29
	Fill	IPC-TM-650 2.4.24.4	GPa	–	25-28
Physical Properties					
Moisture Absorption		IPC-TM-650 2.6.2.1	%	0.80 maximum	0.10
Flammability		UL-94	Rating	V-0	V-0

All test data provided are typical values and not intended to be specification values.

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