tec-speed 5.0 - VT-464G

UL Approval: E214381 Version: 02/12/2024 /130

Laminate/Prepreg

General Information

- Halogen Free & High Tg
- Very Low Dk & Very Low Loss
- Excellent Thermal Reliability

Application

Server, Storage, Switches, Routers, High Performance Computing, High Speed Network Equipment

Availability

- Core Thickness: 0.002" (0.05mm) to 0.030" (0.762mm), available in sheet or panel form
- Copper Foil: 1/3oz to 2oz
- Prepregs are available in roll or panel form
- E-Glass styles: 3313, 2116, 1078, 1067, 106 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	TMA	IPC-TM-650 2.4.24	°C	170 minimum	175
	DMA	IPC-TM-650 2.4.24.4			200
Td		ASTM D3850	°C	340 minimum	400
T260		IPC-TM-650 2.4.24.1	Minute	30 minimum	>60
T288		IPC-TM-650 2.4.24.1	Minute	15 minimum	>30
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	35
	After Tg	IPC-TM-650 2.4.24	ppm/°C	300 maximum	200
	Total Expansion (50~260°C)	IPC-TM-650 2.4.24	%	3.5 maximum	2.1
Electrical Properties					
Dk	@ 1GHz	IPC-TM-650 2.5.5.9	–	5.2 maximum	3.81
	@ 10GHz	Cavity Resonator	–	–	3.62
Df	@ 1GHz	IPC-TM-650 2.5.5.9	–	0.035 maximum	0.0031
	@ 10GHz	Cavity Resonator	–	–	0.0050
Volume Resistivity	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ-cm	1.0E+4 minimum	6.0E+8
	E-24/125	IPC-TM-650 2.5.17.1	MΩ-cm	1.0E+3 minimum	6.0E+6
Surface Resistivity	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ	1.0E+4 minimum	6.0E+7
	E-24/125	IPC-TM-650 2.5.17.1	MΩ	1.0E+3 minimum	6.0E+6
Electrical Strength		IPC-TM-650 2.5.6.2	Volt/mil (KV/mm)	762 (30) minimum	1372 (54)
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		IPC-TM-650 2.5.1	Second	60 minimum	124
Mechanical Properties					
Peel Strength (1oz RTF2)	As received	IPC-TM-650 2.4.8	lb/in (N/mm)	–	5.0 (0.88)
	After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	6 (1.05) minimum	5.0 (0.88)
Flexural Modulus	Warp	IPC-TM-650 2.4.24.4	Kpsi (MPa)	60 (415) minimum	80 (560)
	Fill	IPC-TM-650 2.4.24.4	Kpsi (MPa)	50 (345) minimum	65 (450)
Physical Properties					
Moisture Absorption		IPC-TM-650 2.6.2.1	%	0.80 maximum	0.08
Flammability		UL-94	Rating	V-0 minimum	V-0

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

Disclaimer: The information and data contained in this technical literature is based on data and knowledge correct at the time of publishing/printing and is believed to be accurate and is offered in good faith for the benefit of the user. The user should make his own tests to verify the suitability of this product for any application before its use. All data are typical values only and subject to change without notice.