VT-447C

Laminate/Prepreg

UL Approval: E214381 Version: 31/08/2024 /127 /128 /130

General Information

- Phenolic Cured System
- Halogen Free & High Tg
- FR15.1 & MOT 150°C
- CTI 600V
- UV Blocking
- High Voltage CAF Resistance
- Low Z-CTE
- Excellent Thermal Reliability

Application

PEV & HEV Automotive, BAPV, Instrumentation, Communication Equipment, Electronic Game Machine, White Goods, etc.

Availability

- Core Thickness: 0.004" (0.10mm) to .200" (5mm), available in sheet or panel form
- Copper Foil: 1/2oz to 6oz
- Prepregs are available in roll or panel form
- E-Glass styles: 7628, 2116, 1080

Storage Condition

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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IPC-4101E /127 /128 /130

Properties		Test Method	Units	Specification	Typical Value
Thermal Properties					
Tg		IPC-TM-650 2.4.25	°C	170 min	175
Td		ASTM D3850	°C	340	385
T260		IPC-TM-650 2.4.24.1	Minute	30 minimum	>60
T288		IPC-TM-650 2.4.24.1	Minute	15 minimum	>20
Thermal Stress @ 288°C		IPC-TM-650 2.4.13.1	Second	Pass 10s	>200
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	190
	Total Expansion (50~260°C)	IPC-TM-650 2.4.24	%	3.5 maximum	2.2
MOT		UL 746E	°C	–	150
Electrical Properties					
Dk (RC 50%)	@ 1GHz	IPC-TM-650 2.5.5.9	–	5.4 maximum	4.6
Df (RC 50%)	@ 1GHz	IPC-TM-650 2.5.5.9	–	0.035 maximum	0.011
Volume Resistivity	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ-cm	1.0E+6 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	1200~1400 (54)
Dielectric Breakdown		IPC-TM-650 2.5.6	KV	40 minimum	60
Comparative Tracking Index (CTI)		ASTM D3638	Rating (Volt)	–	Grade 0 (>600)
Arc Resistance		ASTM D495	Second	–	187
Mechanical Properties					
Peel Strength (1oz)	As received	IPC-TM-650 2.4.8	lb/in (N/mm)	–	8 (1.4)
	After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	6 (1.05) minimum	8 (1.4)
Flexural Strength	Warp	IPC-TM-650 2.4.4	KPsi (MPa)	60 (415) minimum	72 (500)
	Fill	IPC-TM-650 2.4.4	KPsi (MPa)	50 (345) minimum	58 (400)
Physical Properties					
Moisture Absorption		IPC-TM-650 2.6.2.1	%	0.80 maximum	0.18
Flammability		UL-94	Rating	V-0 minimum	V-0

Note: All test data provided are typical values and are 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.