

VT-447(B)

VT-447(B) LAMINATE/PREPREG

UL Approval: E214381 Version: Rev. B4 24/08/2016 /127/128/130

GENERAL INFORMATION

- Halogen Free & High Tg
- Black, Light Blocking
- Low Z-CTE
- UV Blocking

APPLICATION

Reinforcement for FPC, Mobile Phone, Smart Phone, Computer, Communication Equipment, Instrumentation, LED, Electronic Game Machine, VCR, etc

AVAILABILITY

- Core Thickness: 0.006" (0.15mm) to 0.040" (1mm), other thickness on request
- Available in roll or panel form
- Copper Foil: 1/4oz to 12oz
- E-Glass styles: 7628, 1506, 2116, other glass fabric on request

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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.

PROPERTIES SHEET IPC-4101E /127 /128 /130

Properties		Test Method	Units	Specification	Typical Value
Thermal Properties					
Tg	DSC	IPC-TM-650 2.4.25	°C	-	-
	TMA	IPC-TM-650 2.4.24	°C	170 minimum	180
Td		ASTM D3850	°C	-	380
T260		IPC-TM-650 2.4.24.1	Minute	30 minimum	60
T288		IPC-TM-650 2.4.24.1	Minute	-	-
Thermal Stress @ 288°C		IPC-TM-650 2.4.13.1	Second	Pass 10s	150
Z-axis CTE	Before Tg	IPC-TM-650 2.4.24	ppm/°C	-	45
	After Tg	IPC-TM-650 2.4.24	ppm/°C	-	190
	Total Expansion (50~260°C)	IPC-TM-650 2.4.24	%	-	2.3
MOT		UL 94	°C	-	130
Electrical Properties					
DK (RC 50%)	@ 1GHz	IPC-TM-650 2.5.5.9	-	5.4 maximum	4.35
DF (RC 50%)	@ 1GHz	IPC-TM-650 2.5.5.9	-	0.035 minimum	0.013



Properties		Test Method	Units	Specification	Typical Value
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 4 (100~175)
Arc Resistance		ASTM D495	Second	-	240
Mechanical Properties					
Peel Strength (1oz)	As received	IPC-TM-650 2.4.8	lb/in (N/mm)	-	6~8 (1.05~1.40)
	After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	-	6~8 (1.05~1.40)
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	0.35
Flammability		UL-94	Rating	V0 minimum	V0

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

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