

VT-441C(G1)

Version: 09/03/2025 /127 /128

Laminate/Prepreg

General Information

- > Phenolic Cured System
- > Halogen Free & Mid-Tg
- > FR15.1 & MOT 150°C
- > CTI Grade-1
- > UV Blocking
- > CAF Resistance
- > Low Z-CTE
- > Excellent Thermal Reliability

Application

Automotive, Instrumentation, Communication Equipment, Electronic Game Machine, White Goods, etc.

Availability

- > Core Thickness: 0.004" (0.10mm) to 0.200" (5mm), available in sheet or panel form
- > Copper Foil: 1/2oz to 12oz
- > Prepregs are available in roll or panel form
- > E-Glass styles: 7628, 2116, 1080

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.

VT-441C(G1)

Version: 09/03/2025 /127 /128

Laminate/Prepreg

Properties Sheet IPC-4101E /127 /128

Properties	Test Method	Units	Specification	Typical Value	
Thermal Properties					
Tg	IPC-TM-650 2.4.25	°C	150 minimum	155	
Td	ASTM D3850	°C	325 minimum	385	
T260	IPC-TM-650 2.4.24.1	Minute	30 minimum	>60	
T288	IPC-TM-650 2.4.24.1	Minute	5 minimum	>15	
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 @ 1GHz	IPC-TM-650 2.5.5.9	-	5.4 maximum	4.6	
Df @ 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+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	1200~1400 (54)	
Dielectric Breakdown	IPC-TM-650 2.5.6	KV	40 minimum	60	
Comparative Tracking Index (CTI)	ASTM D3638	Rating (Volt)	-	Grade 1 (600>CTI≥400)	
Arc Resistance	ASTM D495	Second	-	187	
Mechanical Properties					
Peel Strength (1oz)	As received	IPC-TM-650 2.4.8	lb/in (N/mm)	-	8.0~8.5 (1.4~1.49)
	After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	6 (1.05) minimum	8.0~8.5 (1.4~1.49)
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.