VT-42 (Black)

Laminate/Prepreg

Version: B4 /21

General Information

- Dicy Cured System
- Standard FR4 (Tg140˚C)
- Black, Light Blocking
- UV Blocking

Application

LED, Instrumentation, Watch, etc

Availability

- Core Thickness: 0.007" (0.18mm) to 0.040" (1mm), available in sheet or panel form
- Copper Foil: 1/4oz to 12oz
- Prepregs are available in roll or panel form
- E-Glass styles: 7628, other glass fabric on request

Note: For cores 0.005", it is recommended to use the reverse treated copper due to the low profile. The peel strength for RT foil is ≈1-2lbs/in (0.35Kg/m) less than standard foil.

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 /21

Properties		Test Method	Units	Specification	Typical Value
Thermal Properties					
Tg	DSC	IPC-TM-650 2.4.25	°C	110 minimum	140
	TMA	IPC-TM-650 2.4.24	°C	–	–
Td		ASTM D3850	°C	–	305
T260		IPC-TM-650 2.4.24.1	Minute	–	10
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	–	50
	After Tg	IPC-TM-650 2.4.24	ppm/°C	–	250
	Total Expansion (50~260°C)	IPC-TM-650 2.4.24	%	–	3.75
X-Y CTE		IPC-TM-650 2.4.24	ppm/°C	–	12~14
MOT		UL 94	°C	–	130
Electrical Properties					
DK @ 1GHz		IPC-TM-650 2.5.5.9	–	5.4 maximum	4.5
DF @ 1GHz		IPC-TM-650 2.5.5.9	–	0.035 maximum	0.018
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	–	111
Mechanical Properties					
Peel Strength (1oz)	As received	IPC-TM-650 2.4.8	lb/in (N/mm)	–	10~12 (1.7~2.0)
	After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	6 (1.05) minimum	9~12 (1.5~2.0)
Flexural Strength	Warp	IPC-TM-650 2.4.4	Kpsi (MPa)	60 (415) minimum	87 (600)
	Fill	IPC-TM-650 2.4.4	Kpsi (MPa)	50 (345) minimum	72 (500)
Physical Properties					
Moisture Absorption		IPC-TM-650 2.6.2.1	%	0.80 maximum	0.25
Flammability		UL-94	Rating	V-0 minimum	V-0

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

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