

VT-42

UL Approval: E214381    Version: Rev. B2

**DATASHEETS**

VT-42 Laminate/Prepreg

## General Information

- Dicy Cured System
- Standard FR-4 (Tg140)
- UV Blocking

## Application

Computer, Communication equipment, Instrumentation, TV, VCR, Electronic game machine, LCD, Automotive, etc

## Availability

- Core Thickness: .002" (0.05mm) to .200" (5mm), available in sheet or panel form
- Copper Foil: 1/4oz to 12oz
- Prepregs are available in roll or panel form
- E-Glass styles: 7628, 1506, 1500, 2113, 2313, 3313, 2116, 1080, 1086, 1078, 106 & 1067, etc

Note: For cores  $\leq .005"$ , it is recommended to use the reverse treated copper due to the low profile. The peel strength for RT foil is  $\approx 1-2$ lbs/in (0.35Kg/m) less than Standard foil.

## Storage Condition & Shelf Life

		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)

Note: The pre-preg exceeding shelf life should be retested.

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### Properties Sheets IPC-4101C Slash Sheet(s)/21

Properties	Test Method	Units	Specification	Typical Value
<b>Thermal Properties</b>				
Glass Transition Temp. (Tg)				
DSC	IPC-TM-650 2.4.25	°C	110 minimum	140
TMA	IPC-TM-650 2.4.24	°C	-	-
Decomposition Temp. (Td) By TGA (at 5% weight loss)	ASTM D3850	°C	-	310
Time to Delamination---T260	IPC-TM-650 2.4.24.1	Minute	-	20
Time to Delamination---T288	IPC-TM-650 2.4.24.1	Minute	-	2
Thermal Stress @ 288°C	IPC-TM-650 2.4.13.1	Second	Pass 10s	300
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
MOT	UL 94	°C	-	130
<b>Electrical Properties</b>				
Dielectric Constant @ 1GHz	IPC-TM-650 2.5.5.9	-	5.4 maximum	4.2
Dissipation Factor @ 1GHz	IPC-TM-650 2.5.5.9	-	0.035 minimum	0.015
Volume Resistivity				
After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ-cm	10 <sup>6</sup> minimum	5*10 <sup>8</sup>
E-24/125	IPC-TM-650 2.5.17.1	MΩ-cm	10 <sup>3</sup> minimum	5*10 <sup>6</sup>
Surface Resistivity				
After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ	10 <sup>4</sup> minimum	5*10 <sup>7</sup>
E24/125	IPC-TM-650 2.5.17.1	MΩ	10 <sup>3</sup> minimum	5*10 <sup>6</sup>
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 3 (175~250)
Arc Resistance	IPC-TM-650 2.5.1	Second	60 minimum	240
<b>Mechanical Properties</b>				
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)
<b>Physical Properties</b>				
Moisture Absorption	IPC-TM-650 2.6.2.1	%	0.80 maximum	0.25
Flammability	UL-94	Rating	V0 minimum	V0

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