

# VT-90H DATASHEET

VT-90H Laminate / Prepreg

UL Approval: E214381    Version: Rev. B5

## POLYIMIDE

### General Information

- Tg 250°C
- High Td (Td 400°C)
- Improved Fracture Toughness
- Low Z-axis CTE
- Non Brominated Chemistry

### Application

- Chip Manufacturers
- Engine/Flight Controls
- Power Supply /Backplane
- Military and Burn-in Board

### Availability

- Core Thickness: .002”(0.05mm) to .125” (3mm), available in sheet or panel form
- Copper Foil: 1/4oz to 6oz
- Prepregs are available in roll or panel form
- E-Glass styles: 7628, 1506, 1500, 2113, 2313,3313, 2116, 1080, 106 etc.

Note: Double side treated copper foil and reverse copper foil are not suggested using on VT-90H laminates because the peel strength would not be as good as conventional material's.

### 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 prepreg exceeding shelf life should be retested.

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### Properties Sheet IPC-4101D Slash Sheet(s) /40, /41

Properties	Test Method	Units	Specification	Typical Value
<b>Thermal Properties</b>				
Glass Transition Temp. (Tg)	DSC	IPC-TM-650 2.4.25	°C	-
	TMA	IPC-TM-650 2.4.24	°C	200 minimum
Td		ASTM D3850	°C	400
T260		IPC-TM-650 2.4.24.1	Minute	>60
T288		IPC-TM-650 2.4.24.1	Minute	>60
Thermal Stress @ 288°C		IPC-TM-650 2.4.13.1	Second	Pass 10s
Z-axis CTE	Before Tg	IPC-TM-650 2.4.24	ppm/°C	50
	After Tg	IPC-TM-650 2.4.24	ppm/°C	145
	Total Expansion (50~260°C)	IPC-TM-650 2.4.24	%	1.2
MOT		UL 94	°C	140
<b>Electrical Properties</b>				
Dielectric Constant @ 1GHz		IPC-TM-650 2.5.5.9	-	5.4 maximum
Dissipation Factor @ 1GHz		IPC-TM-650 2.5.5.9	-	0.035 maximum
Volume Resistivity	After Moisture Resistance	IPC-TM-650 2.4.17.1	MΩ-cm	10 <sup>6</sup> minimum
	E-24/125	IPC-TM-650 2.5.17.1	MΩ-cm	10 <sup>6</sup> minimum
Surface Resistivity	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ	10 <sup>6</sup> minimum
	E-24/125	IPC-TM-650 2.5.17.1	MΩ	10 <sup>6</sup> minimum
Electrical Strength		IPC-TM-650 2.5.6.2	Volt/mil (KV/mm)	762 (30) minimum
Dielectric Breakdown		IPC-TM-650 2.5.6	KV	40 minimum
Comparative Tracking Index (CTI)		ASTM D3638	Rating (Volt)	-
Arc Resistance		ASTM D495	Second	120 minimum
<b>Mechanical Properties</b>				
Peel Strength (1oz)	As received	IPC-TM-650 2.4.8	lb/in (N/mm)	-
	After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	5.14 (0.90) minimum
Flexural Strength	Warp	IPC-TM-650 2.4.4	Kpsi (MPa)	60 (415) minimum
	Fill	IPC-TM-650 2.4.4	Kpsi (MPa)	47 (325) minimum
<b>Physical Properties</b>				
Moisture Absorption		IPC-TM-650 2.6.2.1	%	1.0 maximum
Flammability		UL-94	Rating	HB minimum

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