

tec-speed 6.0 - VT-462S

UL Approval: E214381 Version: 6 /91 /102

Laminate/Prepreg

General Information

- > Very Low Dk & Very Low Loss
- > Excellent Thermal Reliability
- > Lead Free Process Compatible
- > High Tg
- > Ease of Manufacturing

Application

- > High speed Networking equipment
- > IC Tester
- > High Frequency Measuring Instruments and Devices

Availability

- > Core Thickness: 0.002" (0.05mm) to 0.200" (5mm), available in sheet or panel form
- > Copper Foil: 1/3oz to 3oz
- > Prepregs are available in roll or panel form
- > E-Glass styles: 2116, 2113, 1078, 106, etc
- > Ability of Processing Copper Type: HTE, RTF, VLP & HVLP

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 /91 /102

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 170	
Td		ASTM D3850	°C	340 minimum 400	
T260		IPC-TM-650 2.4.24.1	Minute	30 minimum >60	
T288		IPC-TM-650 2.4.24.1	Minute	15 minimum >30	
Thermal Stress @ 288°C		IPC-TM-650 2.4.13.1	Second	Pass 10s >600	
Z-axis CTE	Before Tg	IPC-TM-650 2.4.24	ppm/°C	60 maximum 48	
	After Tg	IPC-TM-650 2.4.24	ppm/°C	300 maximum 260	
	Total Expansion (50-260°C)	IPC-TM-650 2.4.24	%	3.5 maximum 2.8	
X-Y CTE		IPC-TM-650 2.4.24	ppm/°C	- 11-13	
MOT		UL 94	°C	- 130	
Electrical Properties					
DK (RC 50%)	@ 1GHz	IPC-TM-650 2.5.5.9	-	-	3.6
	@ 10GHz	IPC-TM-650 2.5.5.13	-	-	3.5
DF (RC 50%)	@ 1GHz	IPC-TM-650 2.5.5.9	-	-	0.003
	@ 10GHz	IPC-TM-650 2.5.5.13	-	-	0.005
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	1372 (54)
Dielectric Breakdown		IPC-TM-650 2.5.6	KV	40 minimum	60
Comparative Tracking Index (CTI)		ASTM D3638	Rating (Volt)	-	Grade 4 (175-250)
Arc Resistance		ASTM D495	Second	60 minimum	124
Mechanical Properties					
Peel Strength (1oz)	As received	IPC-TM-650 2.4.8	lb/in (N/mm)	-	6.0 (1.05)
	After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	4.0 (0.70) minimum	6.0 (1.05)
Flexural Strength	Warp	IPC-TM-650 2.4.4	Kpsi (MPa)	60 (415) minimum	80 (560)
	Fill	IPC-TM-650 2.4.4	Kpsi (MPa)	50 (345) minimum	65 (450)
Physical Properties					
Moisture Absorption		IPC-TM-650 2.6.2.1	%	0.80 maximum	0.10
Flammability		UL-94	Rating	V1 minimum	V0

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

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