

tec-speed 6 Series

UL Approval: E214381 Version: 2

Data Sheet tec-speed 6.0 = VT-462S
 tec-speed 6.1 = VT-462S(LK)
 Laminate / Prepreg

General Information

- Very Low Dk & Very Low Loss
- Excellent Thermal Reliability
- Lead-free
- High Tg
- Ease of Manufacturing

Application

- High speed Network equipment
- IC Tester
- High frequency measuring instruments and devices

Availability

- Core Thickness: .002" (0.05mm) to .020" (0.5mm), 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, LVP & HLVP

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 Time		3 Months	6 Months	24 Months (airproof)

Note: The prepreg exceeding shelf life should be retested.

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Properties Sheet

Properties	Test Method	Units	Specification	Typical Value		
				VT-462S	VT-462S(LK)	
Glass Transition Temp. (Tg)						
DSC	IPC-TM-650 2.4.25	°C	170 minimum	-	-	
TMA	IPC-TM-650 2.4.24	°C	-	170	170	
Td	ASTM D3850	°C	340 minimum	400	400	
T260	IPC-TM-650 2.4.24.1	Minute	30 minimum	>60	>60	
T288	IPC-TM-650 2.4.24.1	Minute	15 minimum	>30	>30	
Z-axis CTE						
Before Tg	IPC-TM-650 2.4.24	ppm/°C	60 maximum	48	48	
After Tg	IPC-TM-650 2.4.24	ppm/°C	300 maximum	260	260	
Total Expansion (50~260°C)	IPC-TM-650 2.4.24	%	3.5 maximum	2.8	2.60	
Thermal Stress @ 288°C	IPC-TM-650 2.4.13.1	Second	Pass 10s	>600	>600	
Dielectric Constant (RC50%)	@ 1GHz	IPC-TM-650 2.5.5.9	-	5.2 maximum	3.6	3.3
	@ 10GHz	IPC-TM-650 2.5.5.13	Cavity Resonator	-	3.5	3.2
Dissipation Factor (RC50%)	@ 1GHz	IPC-TM-650 2.5.5.9	-	0.035 maximum	0.003	0.0027
	@ 10GHz	IPC-TM-650 2.5.5.13	Cavity Resonator	-	0.005	0.004
Volume Resistivity						
After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ-cm	10 ⁴ minimum	5*10 ⁸	5*10 ⁸	
E-24/125	IPC-TM-650 2.5.17.1	MΩ-cm	10 ³ minimum	5*10 ⁶	5*10 ⁶	
Surface Resistivity						
After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ	10 ⁴ minimum	5*10 ⁷	5*10 ⁷	
E24/125	IPC-TM-650 2.5.17.1	MΩ	10 ³ minimum	5*10 ⁶	5*10 ⁶	
Electrical Strength	IPC-TM-650 2.5.6.2	Volt/mil (KV/mm)	762 (30) minimum	1200~1400 (54)	1200~1400 (54)	
Dielectric Breakdown	IPC-TM-650 2.5.6	KV	40 minimum	60	60	
Comparative Tracking Index (CTI)	ASTM D3638	Rating (Volt)	-	Grade 4 (100~175)	Grade 4 (100~175)	
Arc Resistance	IPC-TM-650 2.5.1	Second	60 minimum	124	124	
Peel Strength (1oz)						
As received	IPC-TM-650 2.4.8	lb/in (N/mm)	-	6.0 (1.1)	6.0 (1.1)	
After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	6 (1.05) minimum	6.0 (1.1)	6.0 (1.1)	
Flexural Strength						
Warp	IPC-TM-650 2.4.4	Kpsi (MPa)	60 (415) minimum	80 (560)	80 (560)	
Fill	IPC-TM-650 2.4.4	Kpsi (MPa)	50 (345) minimum	65 (450)	65 (450)	
Moisture Absorption	IPC-TM-650 2.6.2.1	%	0.80 maximum	0.10	0.10	
Flammability	UL-94	Rating	V0 minimum	V0	V0	

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