

## tec-speed 6.0/6.1 H-PK - VT-770 / VT-770(LK)

UL Approval: E214381 Version: A01

### Laminate/Prepreg

## General Information

- > Halogen Free & High Tg (260°C DMA)
- > Low Dk & Very Low Df
- > Excellent Thermal Reliability
- > High Modulus, Low CTE
- > Suitable for CSP, FCP, SiP, AiP, BGA & PGA, etc.

## Application

- > Handheld Equipment
- > High Frequency & High Speed Applications
- > Satellite Communications
- > Navigation, GPS, LTE

## Availability

- > Core Thickness: 0.0012" (0.03mm) to 0.031" (0.8mm), available in sheet or panel form
- > Copper Foil: 1/7oz (5µm) to 2oz (70µm)
- > Prepregs are available in roll or panel form
- > Thickness 0.02mm to 0.1mm

## Storage Condition

Properties		Prepreg		Laminate
Storage Condition	Temperature	Below 23°C (73°F)	Below 5°C (41°F)	Room
	Relative humidity	Below 55% RH	/	/

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## Properties Sheet

Properties		Test Method	Units	Specification	VT-770	VT-770(LK)
<b>Thermal Properties</b>						
Tg	TMA	IPC-TM-650 2.4.24	°C	170 minimum	230	230
	DMA	IPC-TM-650 2.4.24.4	°C		260	260
Td @ 5% weight loss		ASTM D3850	°C	340 minimum	450	450
T260		IPC-TM-650 2.4.24.1	Minute	30 minimum	>60	>60
T288		IPC-TM-650 2.4.24.1	Minute	15 minimum	>60	>60
Thermal Stress @ 288°C		IPC-TM-650 2.4.13.1	Second	Pass 10s	>600	>600
Z-axis CTE	Before Tg	IPC-TM-650 2.4.24	ppm/°C	60 maximum	25	22
XY-axis CTE		IPC-TM-650 2.4.24.5	ppm/°C	-	9~10	9~10
<b>Electrical Properties</b>						
Dk (RC 50%)	1 GHz	IPC-TM-650 2.5.5.9	-	5.2 maximum	3.5~3.6	3.4~3.5
	10 GHz	IPC-TM-650 2.5.5.13	-		3.4~3.5	3.3~3.4
Df (RC 50%)	1 GHz	IPC-TM-650 2.5.5.9	-	0.035 maximum	0.0030	0.0020
	10 GHz	IPC-TM-650 2.5.5.13	-		0.0040	0.0024
Volume Resistivity	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ-cm	1.0E+4 minimum	5.0E+8	5.0E+8
	E-24/125	IPC-TM-650 2.5.17.1	MΩ-cm	1.0E+3 minimum	5.0E+6	5.0E+6
Surface Resistivity	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ	1.0E+4 minimum	5.0E+7	5.0E+7
	E-24/125	IPC-TM-650 2.5.17.1	MΩ	1.0E+3 minimum	5.0E+6	5.0E+6
Electrical Strength		IPC-TM-650 2.5.6.2	Volt/mil (KV/mm)	762 (30) minimum	1400 (55)	1400 (55)
Dielectric Breakdown		IPC-TM-650 2.5.6	KV	40 minimum	60	60
Comparative Tracking Index (CTI)		ASTM D3638	Rating (Volt)	-	Grade 3 (175-250)	Grade 3 (175-250)
Arc Resistance		ASTM D495	Second	-	195	195
<b>Mechanical Properties</b>						
Peel Strength (12 μm )	As received	IPC-TM-650 2.4.8	lb/in (N/mm)	-	4.0 (0.7)	4.0 (0.7)
	After thermal stress	IPC-TM-650 2.4.8	lb/in (N/mm)	3.0 (0.52) minimum	4.0 (0.7)	4.0 (0.7)
Flexural Modulus	Warp/Fill	IPC-TM-650 2.4.24.4	GPa	-	24~28	24~28
<b>Physical Properties</b>						
Moisture Absorption		IPC-TM-650 2.6.2.1	%	0.80 maximum	0.1	0.1
Flammability		UL-94	Rating	V-0 minimum	V-0	V-0

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

Disclaimer: The information and data contained in this technical literature is based on data and knowledge correct at the time of publishing/printing and is believed to be accurate and is offered in good faith for the benefit of the user. The user should make his own tests to verify the suitability of this product for any application before its use. All data are typical values only and subject to change without notice.