Professional Manufacturer in Copper Clad Laminates

Ventec

UL Approval: E214381
Version : Rev. 3

VT-575

Datasheets

High Tg & Next Generation Lead Free Material

VT-575TC/Laminate VT-575PP/Prepreg

General Information

- **High Tg FR-4**
- **High Td FR-4 (Td 325℃)**
- Dicy Cured System
- UV Blocking
- Laser Fluorescing

Application

For Single Side\Double Side\Multilayer PWB Applications

Availability

VT-575TC Laminates are available in thickness from .002” to .200” and with the copper foil from 1/4oz to 12oz; Ventec can supply either reverse treated (RT) or double side treated copper foil. For cores ≤ .005”, it is recommended to use the reverse treated copper due to the low profile. The peel strength for RT foil is ≈1-2lbs/in (0.35Kg/m) lower than Standard foil.

VT-575PP pre-pregs are available in many E-Glass styles, such as 7628, 7629, 1506, 1500, 2113, 2313, 3313, 2116, 1080, 1086, 1078, 106 & 1067.

Storage Condition & Shelf Life

		Prepreg		Laminate
Storage Condition	Temperature	Below 23℃(73℉)	Below 5℃(41℉)	Room
	Relative Humidity	Below 55%RH	/	/
Shelf Time*		3 Months	6 Months	12 Months(airproof)

The pre-preg exceeding shelf time should be retested.

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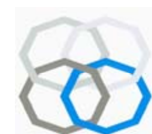

VT-575

Properties Sheet: IPC-4101B Specification Sheet(s)/21, 24, 26, 99,101, 124

(Test Sample: .036”1/1)

Test Item		Test Condition (IPC-TM-650 or As Noted)	Unit	Specification (IPC-4101 B)	Typical Value	
					VT-575	Normal FR-4
Flexural Strength	Warp	2.4.4	MPa	>415	560	600
	Fill			>345	450	500
Peel Strength (1 oz)	As Received	2.4.8	Lb/in	8.0 min	10.57	10~12
	After Heated				10.75	9~12
Glass Transition Temp. (Tg)	**DSC**	2.4.25	℃	—	175	136~140
	DMA	2.4.24.4			185	145~150
Decomposition Temp. (Td),TGA		ASTM D3850	℃	—	325	290~310
Z-axis C.T.E.	Before Tg	TMA	ppm/℃	60	45	50
	After Tg			300	220	250
Moisture Absorption	D-24/23	2.6.2	%	0.35 max	0.25	0.25
	After PCT	1atm.,121℃, 1hour	%	—	0.36	0.28
Volume Resistance	After Moisture	2.5.17.1	MΩ-cm	≥10^6	5x10^8	5x10^8
	E-24/125			≥10^3	5x10^6	5x10^6
Surface Resistance	After Moisture	2.5.17.1	MΩ	≥10^4	5x10^7	5x10^7
	E-24/125			≥10^3	5x10^6	5x10^6
Electric Strength		2.5.6.2	KV/mm	≥30	54	54
Dielectric Constant (Dk)	250 MHz	2.5.5.3,2.5.5.9,2.5.5.5	—	5.4 max	4.43	4.42
	750 MHz				4.40	4.39
	1.0 GHz				4.38	4.38
	2.0 GHz				4.36	4.36
Dispassion Factor (Df)	250 MHz	2.5.5.3,2.5.5.9,2.5.5.5	—	0.035 max	0.022	0.022
	750 MHz				0.021	0.021
	1.0 GHz				0.021	0.021
	2.0 GHz				0.020	0.020
Thermal Stress	288°C,Solder Dip	2.4.13.1	Sec.	60 Sec.	200~220	90~120
Pressure Cook Test		15psi/30min/ 288°C/10sec.	Cycle	2 Cycles min.	8~9	6~8
T260		2.4.24.1	Minute	>30	45	20
T288		2.4.24.1	Minute	>5	8	3
Flammability		UL94	—	V1	V0	V0
Comparative Tracking Index (CTI)		UL-7461 ASTM D3638	Volt	—	175~250 (Grade 3)	175~250 (Grade 3)

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

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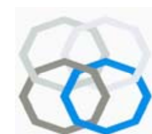

VT-575

Process Guideline

Press Condition
1. Heating rate(Rise of Rate) of material:
Programmable Press: 1.5-3.0℃/min (3~5℉/min)   Manual Press:3~6℃/min (5~10℉/min)
2. Curing Temperature & Time: >50min at more than 180℃(356℉) [Material Temperature]
3. Full Pressure: ≥250-300psi
4. Vacuuming should be continued until over 140℃ (284℉) [Material Temperature]

Typical Drilling Parameters (φ0.3-1.0 mm)		
1. Spindle Speed:	64-105	KRPM
2. Feed Rate:	100-150	Inch / min
3. Retract Rate:	596-600	Inch / min
4. Chip Load:	0.7~2.0	mil / Rev.

Desmearing Process
Desmear rate of **VT-575** is less than that of the conventional FR-4;
Minor adjustments to the desmear process may be necessary for the higher Tg materials.
Check with your chemical supplier for recommendations.

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