

VT-42

UL Approval: E214381

Version : Rev. 3

Datasheets

VT-42RD/TC/Laminate VT-42PP/Prepreg

General Information

- Dicy Cured System
- Standard FR-4 (Tg140)
- UV Blocking
- Laser Fluorescing

Application

For Single Side\Double Side\Multilayer PWB Applications

Availability

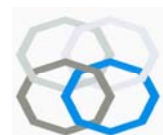
VT-42TC Laminates are available in thickness from .002"to .200" and with the copper foil from 1/4oz to 12oz; Ventec can supply either reverse treated (RT) or double side treated copper foil. For cores $\leq .005$ ", it is recommended to use the reverse treated copper due to the low profile. The peel strength for RT foil is $\approx 1-2$ lbs/in (0.35Kg/m) less than Standard foil.

VT-42PP 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°C (73°F)	Below 5°C (41°F)	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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Properties Sheets: IPC-4101B Specification Sheet(s)/21

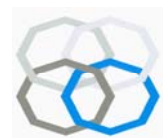
(Test Sample: .036"1/1)

Laminate Properties		Test Condition (IPC-TM-650 or As Noted)	Specification (IPC-4101 B)	Typical Value	Unit
Glass Transition Temp.(Tg)	DSC	2.4.25	—	140	°C
Decomposition Temp. (Td)	TGA	ASTM D3850	—	310	°C
Flexural Strength	Warp	2.4.4	>415	600	MPa
	Fill		>345	500	
Volume Resistance	After Moisture	2.5.17.1	≥10 ⁶	5×10 ⁸	MΩ-cm
	E-24/125		≥10 ³	5×10 ⁶	
Surface Resistance	After Moisture	2.5.17.1	≥10 ⁴	5×10 ⁷	MΩ
	E-24/125		≥10 ³	5×10 ⁶	
Electric Strength		2.5.6.2	≥30	54	KV/mm
Peel strength (1oz)	As Received	2.4.8	≥8	10~12	Lb / in
	After <i>Heated</i>		≥8	9~12	Lb / in
Moisture Absorption	D-24 / 23	2.6.21	≤0.35	<i>0.25</i>	%
	After PCT	1atm.,121°C, 1hour	—	<i>0.28</i>	%
Z-axis C.T.E	Before Tg After Tg	2.4.24	—	50 250	ppm/°C
Z-axis Total Expansion(50-260°C)		2.4.24	—	3.5	%
Time to Delamination@260°C (T260)		2.4.24.1	—	20	Min
Thermal Stress	Solder Dip 288°C	2.4.13.1	No Delamination	No Delamination	—
Breakdown Voltage	D-48/50+D0.5/23	2.5.6	≥40	60	KV
Arc Resistance	D-48/50+D0.5/23	2.5.1	≥40	110~120	Sec
Permittivity(1MHZ)	C-24 / 23 / 50	<i>2.5.5.3,2.5.5.9,2.5.5.5</i>	—	4.4~4.7	—
Dissipation Factor(1MHZ)	C-24 / 23 / 50	<i>2.5.5.3,2.5.5.9,2.5.5.5</i>	—	0.018~0.022	—
Flammability	As Received	UL 94	V-1	V-0	—
Comparative Tracking Index(CTI)		UL-7461 ASTM D3638	—	175~250 (Grade 3)	Volt
<i>*Conductive Anodic Filament (Anti-CAF)</i>		<i>85°C, RH85%; Bias Voltage: 100 V; [IPC-TM-650 2.6.25] Min. Hole Size, 0.3 mm Min. Hole Space,0.43mm</i>	<i>Insulation Resistance over 100MΩ</i>	<i>Pass 1000Hrs</i>	<i>/</i>

※ Standard VT-42 Products can not meet Anti-CAF requirement.

We can supply Anti-CAF type marked with VT-42 (Anti-CAF) to customer who has such a requirement.

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



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Process Guideline

Press Condition

1. Heating rate(Rise of Rate) of material [Material Temperature]:
Programmable Press: 1.5-3.0°C/min (3~5°F/min) Manual Press :3~6°C/min (5~10°F/min)
2. Curing Temperature & Time: >45min at more than 170°C (338°F) [Material Temperature]
3. Full Pressure: ≥250-280psi
4. Vacuuming should be continued until **over 140°C** (284°F) [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

Standard FR-4 Desmear Process