

# VT-42C

UL Approval: E214381

Version : Rev. 3

## Datasheets

## CTI 600 Material

VT-42CTC (High CTI) / Laminate

VT-42CPP (High CTI) /Prepreg

### General Information

- **Comparative Tracking Index(CTI): over 600 Volts**
- Dicy Cured System;
- Standard FR-4
- UV Blocking;
- Laser Fluorescing;

### Application

For Single Side\Double Side\Multilayer PWB working in special environment Applications

### Availability

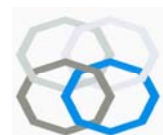
VT-42CTC Laminates are available in thickness from 0.039 inches to 0.200 inches, and with the copper foil from 1/4oz to 12 oz. As CTI value is closely related with the surface roughness, we would like to supply reverse treated copper foil when customer ask for laminates with copper foil over 2 oz.

VT-42CPP prepregs are available in many E-Glass styles, such as 7628,7629,2116,1080,etc.

### 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.



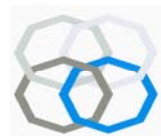
# VT-42C

## Properties Sheets: IPC-4101A Specification Sheet(s)/21

(Test Sample: .036"1/1)

Laminate Properties		Test Condition (IPC-TM-650 or As Noted)	Specification	Typical Value	Unit
<b>Glass Transition Temp.(Tg)</b>	DSC	2.4.25	Above 125	125~130	°C
<b>Flexural Strength</b>	Warp	2.4.4	>415	600	MPa
	Fill		>345	500	
<b>Volume Resistance</b>	After Moisture	2.5.17.1	$\geq 10^6$	$5 \times 10^8$	MΩ-cm
	E-24/125		$\geq 10^3$	$5 \times 10^6$	
<b>Surface Resistance</b>	After Moisture	2.5.17.1	$\geq 10^4$	$5 \times 10^7$	MΩ
	E-24/125		$\geq 10^3$	$5 \times 10^6$	
<b>Electric Strength</b>		2.5.6.2	$\geq 30$	54	KV/mm
<b>Peel strength (1oz)</b>	As Received	2.4.8	$\geq 8$	10-12	Lb / in
	After Thermal		$\geq 8$	9-12	Lb / in
<b>Water Absorption</b>	D-24 / 23	2.6.21	$\leq 0.35$	<0.15	%
	After PCT	1atm.,121°C, 1hour	—	<0.28	%
<b>Z-axis C.T.E</b>	Before Tg	2.4.24	—	40	ppm/°C
	After Tg		220		
<b>Time to Delamination@260°C (T260)</b>		2.4.24.1	—	25	Min
<b>Thermal Stress</b>	Solder Dip 288 °C	2.4.13.1	No delamination	No delamination	—
<b>Breakdown Voltage</b>	D-48/50+D0.5/23	2.5.6	$\geq 40$	60	KV
<b>Arc Resistance</b>	D-48/50+D0.5/23	2.5.1	$\geq 40$	110~120	Sec
<b>Permittivity(1MHZ)</b>	C-24 / 23 / 50	2.5.3,2.5.9,2.5.5	—	4.7-4.9	—
<b>Dissipation Factor(1MHZ)</b>	C-24 / 23 / 50	2.5.3,2.5.9,2.5.5	—	0.016-0.020	—
<b>Flame Retardant</b>	As Received	UL 94	V-1	V-0	—
<b>Comparative Tracking Index(CTI)</b>		UL-7461 ASTM D3638	Grade 0	600(Grade 0)	Volt

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



# VT-42C

## Process Guideline

### Press Condition

1. Heating rate(Rise of Rate) of material: 1.5-3.0°C/min(5~10°F/min)[Material Temperature].
2. Curing Temperature & Time: >45min at more than 170°C(338°F)[Material Temperature]. °C
3. Full Pressure: ≥300psi
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

### Others

- Rough and dirty surface will release the CTI value;
- CTI value of laminates will change after being coated with solder mask.