thermal-bond 3.0F VT-4B3H RCF

UL Approval: E214381 Version: 11/09/2025

Thermally Conductive Resin Coated Film Bondply

Resin Coated Film (RCF) Bondply is an unreinforced adhesive system coated onto PET film for use in high performance and high reliability multilayer PCB stack-ups.

VT-4B3H is a high Tg, ceramic-filled, thermally conductive (3.2 W/mK), halogen-free thermoset resin system, specifically designed for use in multilayer PCBs requiring enhanced levels of heat management and thermal conductivity. Thermal-bond RCF can be combined with other Ventec laminate & prepreg systems including tec-thermal IMS, VT-5A2 and VT-4A2H thermally conductive laminates & prepregs in hybrid stackups.

General Information

- Thermal Conductivity – 3.2 W/mK
- Tg 180ºC
- Ceramic Filled
- Halogen Free
- Flammability (UL94 V-0)
- UL MOT 155ºC
- Easy handling (like rubber)

Application

- High Thermal
- High Working Voltage [≥500Volts]
- Heavy Copper Filled
- Power Conversion
- Monitor Drives
- Rectifiers, Power Supply
- Metal in Board (MiB) applications including Coins and Inserts, Pedestal, etc.

Availability

Press Ply Thickness	75µ/100µ/125µ/150µ (0.003"/0.004"/ 0.005"/ 0.006")
Panel Size	460*610mm, 510*610mm, 533*610mm. 18.11*24.02", 20.08*24.02", 20.98*24.02". or as required

Carrier Film Type	
PET (Standard)	T

RCF Part Numbers

Description	Part Number	PPT (µm)	Flow Range
thermal-bond 3.0F RCF Regular Flow PPT 75µm	4B3H-FT R-075	75	100-250
thermal-bond 3.0F RCF High Flow PPT 75µm	4B3H-FT H-075	75	250-450
thermal-bond 3.0F RCF Regular Flow PPT 100µm	4B3H-FT R-100	100	150-300
thermal-bond 3.0F RCF High Flow PPT 100µm	4B3H-FT H-100	100	300-500
thermal-bond 3.0F RCF Regular Flow PPT 125µm	4B3H-FT R-125	125	200-350
thermal-bond 3.0F RCF High Flow PPT 125µm	4B3H-FT H-125	125	350-550
thermal-bond 3.0F RCF Regular Flow PPT 150µm	4B3H-FT R-150	150	250-400
thermal-bond 3.0F RCF High Flow PPT 150µm	4B3H-FT H-150	150	400-600

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Properties

Properties		Test Method	Units	75µm	100µm	125µm	150µm
Thermal Properties							
Thermal Conductivity		ISO 22007-2	W/mK	3.2			
Thermal Impedance		ISO 22007-2	°C*in²/W	0.036	0.048	0.061	0.072
Tg	DMA	IPC-TM-650 2.4.24.4	°C	180			
Td	TGA	ASTM D3850	°C	395			
Thermal Stress @ 288°C solder dip		IPC-TM-650 2.4.13.1	Minute	≥5			
CTE (X/Y)	TMA	IPC-TM-650 2.4.24.5	ppm/°C	17~20			
Electrical Properties							
Dk @ 1MHz	C-24 / 23 / 50	IPC-TM-650 2.5.5.3	–	4.8			
Df @ 1MHz	C-24 / 23 / 50	IPC-TM-650 2.5.5.3	–	0.016			
Volume Resistance	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ-cm	5.0E+8			
	E-24/125	IPC-TM-650 2.5.17.1	MΩ-cm	3.0E+7			
Surface Resistance	After Moisture Resistance	IPC-TM-650 2.5.17.1	MΩ	2.0E+7			
	E-24/125	IPC-TM-650 2.5.17.1	MΩ	5.0E+6			
Z-axis CTE	Total Expansion (50~260°C)	IPC-TM-650 2.4.24	%	1.78			
	Before Tg	IPC-TM-650 2.4.24	ppm/°C	30~35			
	After Tg	IPC-TM-650 2.4.24	ppm/°C	85~90			
Hi-Pot Withstand	DC	IPC-TM-650 2.5.7	Volt	2000	3000	4000	5000
Breakdown Voltage	AC	IPC-TM-650 2.5.6.3	Volt	7000	8000	9000	10000
Mechanical Properties							
Peel Strength (1oz)	As received	IPC-TM-650 2.4.8	lb/in	8.0			
CTI	As received	ASTM D3638	Volt	600			
Physical Properties							
Flammability	As received	UL-94	Rating	V-0			

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

Storage Condition

		RCF	
Storage Condition	Temperature	< 23°C (73°F)	< 5°C (41°F)
	Relative Humidity	< 55%	/