

VT-4B5H

UL Approval: E214381 Version: 23/08/2023

Metal Base Laminate

General Information

- > Thermal conductivity -- 4.2 W/mK
- > Tg 180°C
- > MOT 155°C
- > Ceramic Filled
- > Halogen Free
- > Flammability UL94 V-0

Application

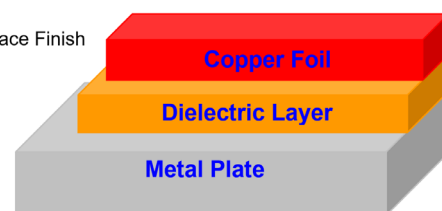
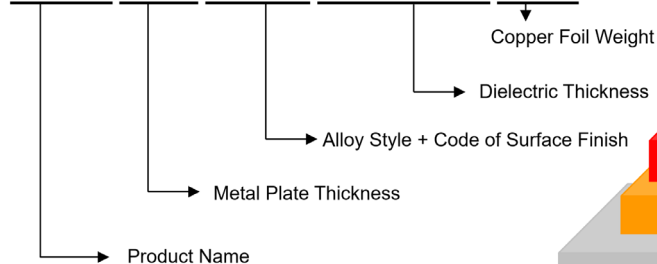
- > High Beam & Low Beam
- > Power Conversion
- > Power Modulus
- > Motor Drives & Controllers
- > Rectifiers
- > Power Supply
- > Other high temperature and/or high voltage applications

Storage Condition

		Laminate
Storage Condition	Temperature	Room
	Relative humidity	/

Designation of IMS Laminate

VT-4B5H 1.5mm Al 5052A .004"Dielectric 1oz Cu



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Laminate Properties

Item	Test Method (IPC-TM-650)	Unit	Dielectric Thickness					
			50µm	75µm	100µm	150µm	200µm	
Thermal Conductivity	ISO22007-2	W/m*K	4.2					
Thermal Impedance	ISO22007-2	°C*in ² /W	0.019	0.029	0.038	0.057	0.076	
Tg	DSC	2.4.25	180					
	DMA	2.4.24.4	210					
Td	TGA	ASTM D3850	400					
Thermal Stress	Solder Dip @ 288°C	2.4.13.1	≥5					
Hi-Pot Proof Test	DC	2.5.7.2	>600					
Breakdown Voltage	AC	2.5.6.3	4000	7000	8000	10000	12000	
Dk @ 1MHz	C-24 / 23 / 50	2.5.5.3	4.8					
Df @ 1MHz	C-24 / 23 / 50	2.5.5.3	0.016					
Volume Resistance	After Moisture	2.5.17.1	MΩ-cm	5.0E+8				
	E-24/125			3.0E+7				
Surface Resistance	After Moisture	2.5.17.1	MΩ	2.0E+7				
	E-24/125			5.0E+6				
Peel Strength (1oz Cu)	As Received	2.4.8	Lb/in					
CTI	As Received	ASTM D3638	V					
Flammability	As Received	UL 94	Rating					
RTI	Electric	UL 746E	°C					
	Mechanical		155					

Remark:

- (1) All test data provided are typical values and not intended to be specification values.
- (2) Hi-Pot proof test (600VDC) is performed 100% on the whole working panels (with copper foil). Any higher requirement of Hi-Pot test can be AABUS.
- (3) Breakdown test is a destructive test, which is done on substrate (without copper foil) of a random sample in the FQC laboratory.

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.

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Availability

Metal Plate Selection

Alloy Style		Thermal Conductivity (W/mK)	Hardness (HV)	Tensile Strength (MPa)	Density (g/cm ³)	CTE (ppm/°C)	Standard Thickness (mm)
Al	5052H32	138	68	215	2.7	23.8	1.0, 1.5, 2.0, 3.0
	6061T6	167	95	276	2.7	23.6	1.0, 1.5, 2.0
	CTEII	170	45	189	2.7	19	1.0, 1.5, 2.0
Cu	C1100	386	95	310	8.9	16.8	1.0, 1.5, 2.0

Remark: Additional thicknesses could be available upon request.

Laminate

Item	Availability	
Dielectric Thickness	.002" (50µm), .003" (75µm), .004" (100µm), .006" (150µm), .008" (200µm)	
Standard Size	Imperial (inch)	18.11*24.02, 20.08*24.02, 20.98*24.02
	Metric (mm)	460*610, 510*610, 533*610
Copper Foil Weight	Hoz, 1oz, 2oz, 3oz, 4oz, 5oz, 6oz	

Remark: Additional options could be available upon request.

Surface Finish for Aluminum (Al) Plate

Code	Surface Finish
None	Default Brushing
"A"	Anodizing
"ER I"	High Emissivity

Protective Film for Metal Plate

Type	Material	Max Operation Temperature
Standard	PET	170 °C
High Temperature	Polyimide	270 °C