

# VT-4B7H

UL Approval: E214381 Version: 29/11/2023

## Metal Base Laminate

### General Information

- > Thermal conductivity -- 7.0 W/mK
- > Tg 210°C
- > MOT 155°C
- > Ceramic Filled
- > Halogen Free
- > Flammability UL94 V-0

### Application

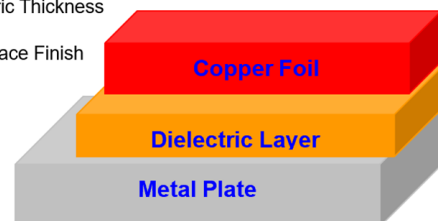
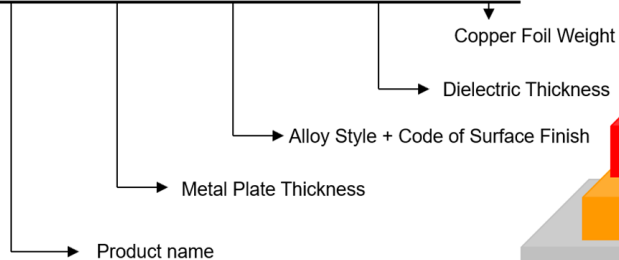
- > High Working Voltage [ $\geq 500$  Volts]
- > Power Conversion
- > Power Modulus
- > Motor Drives & Controllers
- > Rectifiers
- > Power Supply

### Storage Condition

		Laminate
Storage Condition	Temperature	Room
	Relative humidity	/

### Designation of IMS Laminate

**VT-4B7H 1.5mmAl 5052A.004"Dielectric1oz Cu**



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### Laminate Properties

Item		Test Method (IPC-TM-650) or as noted	Unit	Dielectric Thickness	
				100µm	150µm
Thermal Conductivity		ISO 22007-2	W/m*K	7.0	
Thermal Impedance		ISO 22007-2	°C*in <sup>2</sup> /W	0.022	0.035
Tg	DMA	IPC-TM-650 2.4.24.4	°C	210	
Td	TGA	ASTM D3850	°C	420	
Thermal Stress	Solder Dip @ 288°C	IPC-TM-650 2.4.13.1	Minute	≥5	
Hi-Pot Withstand	DC	IPC-TM-650 2.5.7.2	V	>600	
Breakdown Voltage	AC	IPC-TM-650 2.5.6.3	V	8000	10000
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	IPC-TM-650 2.5.17.1	MΩ-cm	5.0E+8	
	E-24/125			3.0E+7	
Surface Resistance	After Moisture	IPC-TM-650 2.5.17.1	MΩ	2.0E+7	
	E-24/125			5.0E+6	
Peel Strength (1oz)	As Received	IPC-TM-650 2.4.8	Lb/in	5.2	
CTI	As Received	ASTM D3638	V	600	
Flammability	As Received	UL 94	Rating	V-0	
RTI	Electric	UL 746E	°C	155	
	Mechanical	UL 746E	°C	155	

(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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## Metal Base Laminate

### Availability

### Metal Plate Selection

Item		Thermal Conductivity (W/mK)	Hardness (HV)	Tensile Strength (MPa)	Density (g/cm <sup>3</sup> )	CTE (ppm/ °C)	Standard Thickness (mm)
Aluminum (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
	CTE II	170	45	189	2.7	19.0	1.0, 1.5, 2.0
Copper (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		.004" (100µm), .006" (150µm)
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 Weight		Hoz, 1oz, 2oz, 3oz, 4oz, 5oz, 6oz

Remark: Additional options could be possible upon request.

### Surface Finish for Aluminum 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