

VT-4B5

UL Approval: E214381 Version: 23/08/2023

Metal Base Laminate

General Information

- > Thermal conductivity -- 4.2 W/mK
- > Ceramic Filled
- > Halogen Free
- > Flammability UL94 V-0
- > MOT 130°C

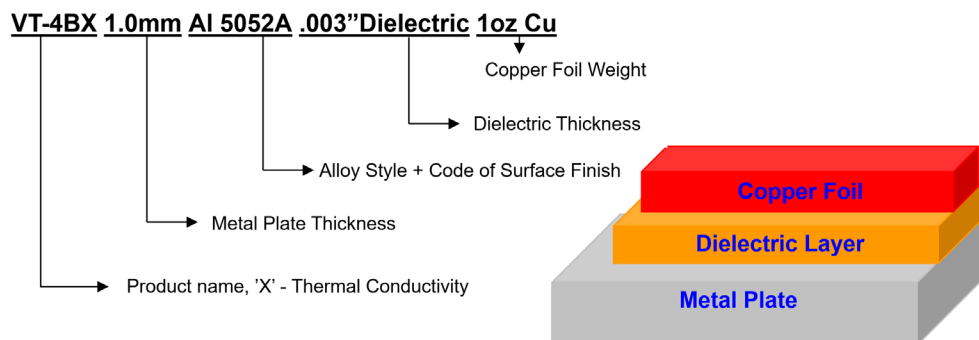
Application

- > High Beam & Low Beam
- > Power Conversion
- > Controllers
- > Motor Drives
- > Rectifier
- > Power Supply

Storage Condition

		Laminate
Storage Condition	Temperature	Room
	Relative humidity	/

Designation of IMS Laminate



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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	0.020	0.029	0.038	0.058	0.076
Tg	DSC	2.4.25	°C				
	DMA	2.4.24.4					
Td	TGA	ASTM D3850	°C				
Thermal Stress	Solder Dip @ 288°C	2.4.13.1	Minute				
Hi-Pot Withstand	DC	2.5.7.2	V				
Breakdown Voltage	AC	2.5.6.3	4000	7000	8000	10000	12000
Dk @ 1MHz	C-24 / 23 / 50	2.5.5.3	-				
Df @ 1MHz	C-24 / 23 / 50	2.5.5.3	-				
Volume Resistance	After Moisture	2.5.17.1	MΩ-cm				
	E-24/125						
Surface Resistance	After Moisture	2.5.17.1	MΩ				
	E-24/125						
Peel strength (1oz)	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	UL 746E	°C				

(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

Item		Thermal Conductivity (W/mK)	Hardness (HV)	Tensile Strength (MPa)	Density (g/cm ³)	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	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	.002" (50µm), .003" (75µm), .004" (100µm), .006" (150µm), .008" (200µm)
Standard Size	Imperial (inch)
	Metric (mm)
Copper Weight	Hoz, 1oz, 2oz, 3oz, 4oz, 5oz, 6oz

Remark: Additional options could be possible upon request.

Surface Finish for Aluminium 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