

VT-4BD

UL Approval: E214381 Version: 27/01/2025

Metal Base Laminate

General Information

- > Thermal conductivity -- 16 W/mK
- > Ceramic Filled
- > Halogen Free
- > Flammability UL94 V-0
- > MOT 150°C
- > High Tg 210°C
- > Suitable for High Temperature Applications

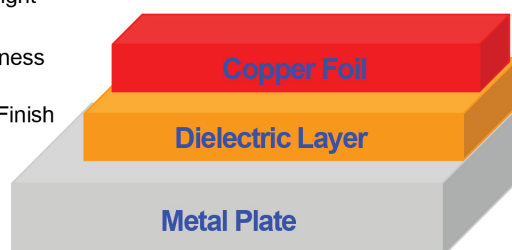
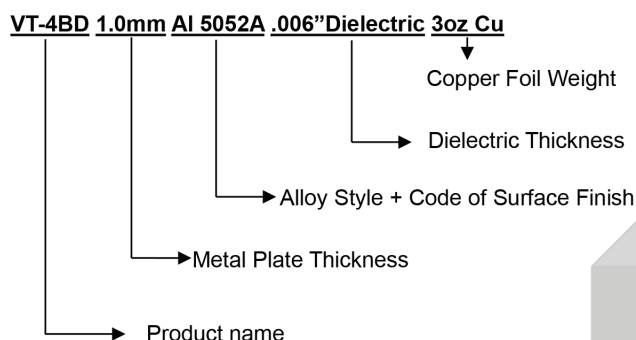
Application

- > Super Bright Lighting
- > Power Modules (IGBT)
- > Controllers
- > Motor Drives
- > Rectifiers
- > Power Supply & Power Conversion

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) or as noted	Unit	Dielectric Thickness
				200µm
Thermal Conductivity		ISO 22007-2	W/m*K	16
Thermal Impedance		ASTM D5470	°C*in²/W	0.019
Tg	DMA	2.4.24.4	°C	210
Td	TGA	ASTM D3850	°C	400
Thermal Stress	Solder Dip @ 288°C	2.4.13.1	Minute	≥5
Hi-Pot Proof Test	DC	2.5.7.2	V	7000
Breakdown Voltage	AC	2.5.6.3	V	12000
Dk @ 1MHz	C-24 / 23 / 50	2.5.5.3	-	5.5
Df @ 1MHz	C-24/ 23 / 50	2.5.5.3	-	0.014
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)	As Received	2.4.8	Lb/in	3.5
CTI	As Received	ASTM D3638	V	600
Flammability	As Received	UL 94	Rating	V-0
RTI	Electric	UL 746E	°C	155
	Mechanical		°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.

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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
	CTE II	170	45	189	2.7	19.0	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		0.008"(200µm)
Standard Size	Imperial (inch)	18.11*12.01
	Metric (mm)	460*305
Copper Foil Weight		2oz, 3oz, 4oz, 5oz, 6oz, 9oz, 14oz

Remark: Additional thicknesses could be available upon request.

Surface Finish for 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