

VT-4BC

Metal Base Laminate

UL Approval: E214381 Version: Prelim 1

General Information

- > Thermal conductivity -- 10 W/mK
- > Ceramic Filled
- > Halogen Free
- > Flammability UL94 V-0
- > MOT 155°C
- > High Tg 180°C
- > Suitable for High Temperature Applications

Application

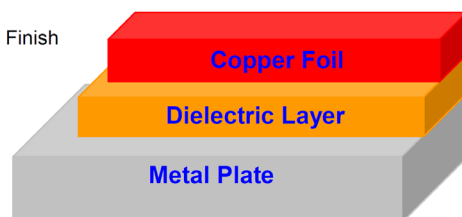
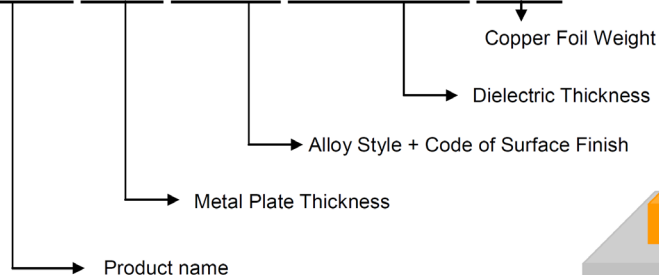
- > Super Bright Lighting
- > Power Modules (IGBT)
- > Controllers
- > Motor Drives
- > Rectifiers
- > Power Supply & Power Conversion

Storage Condition & Shelf Life

		Laminate
Storage Condition	Temperature	Room
	Relative humidity	/

Designation of IMS Laminate

VT-4BC 1.0mm Al 5052A .004" Dielectric 3oz 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	10	
Thermal Impedance		ISO 22007-2	°C*in²/W	0.016	0.023
Tg	DSC	2.4.25	°C	180	
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	3000	5000
Breakdown Voltage	AC	2.5.6.3	V	8000	10000
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 (3oz)	As Received	2.4.8	Lb/in	6	
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	1.0, 1.5, 2.0
Cu	C1100	386	95	310	8.9	16.8	0.5, 1.0, 1.5, 2.0

Remark: Additional thicknesses could be available upon request.

Laminate

Item		Availability
Dielectric Thickness		0.004" (100µm), 0.006" (150µm)
Standard Size	Imperial (inch)	12*18
	Metric (mm)	305*457
Copper Foil Weight		Hoz, 1oz, 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 Copper Plate

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

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