

DESCRIPTION

Insulated Metal Substrate (IMS), based on thick aluminium and clad with ED copper foil in the other side. It is designed for a reliable thermal dissipation circuitry. With a proprietary formulated reinforced-polymer-ceramic bonding layer with a high thermal conductivity, dielectric strength, and thermal endurance is guaranteed. The material is supplied with a protective film on the aluminium side to protect it against wet PCB process

ROHS compliance directive 2002/95/EC

STANDARD CONSTRUCTIONS

Aluminium thickness	1000 - 1500 - 2000 - 3000 μm	Aluminium Alloy / Treat	5052 H18
Insulation thickness	110 - 130 μm	Dielectric thickness tolerance	$\pm 10 \mu\text{m}$
ED copper thickness	35 - 70 - 105 - 210 μm		
Other constructions available upon request			

PROPERTIES 1500 μm Al / 130 μm dielectric / 70 μm Cu	TEST METHOD	UNITS	TYPICAL VALUES	Guaranteed values
Time to blister at 288°C, floating on solder (50 x 50 mm)	IEC-61189	Sec	>120	>120
Copper Peel strength, after heat shock 20 sec/288°C	IPC-TM 650-2.4.8	N/mm	2,8	>1,8
Dielectric breakdown voltage, AC (1)	IPC-TM 650-2.5.6.3	kV	8	7
Proof Test, DC (2)	--	V	3000	3000
Thermal conductivity (dielectric layer)	ASTM-D 5470	w/m.°K	1,45	1,45
Thermal impedance (dielectric layer) $\times 10^{-3}$	ASTM-D 5470	°K.m ² /w	0,089	0,089
Surface resistance after damp heat and recovery	IEC-61189	M Ω	10 ⁵	10 ⁵
Volume resistivity after damp heat and recovery	IEC-61189	M Ωm	10 ⁴	10 ⁴
Relative permittivity after damp heat and recovery, 10 kHz	IEC-61189	-	4,5	4,5
Dissipation factor after damp heat and recovery 10 kHz	IEC-61189	-	0,02	0,02
Comparative tracking index (CTI)	IEC-61112	V	600	600
Capacitance	--	pF/cm ²	46	46
Flammability, according UL-94, class	UL-94	class	V-0	V-0
Glass transition temperature of dielectric layer (by TMA)	IPC-TM 650-2.4.24	°C	90	90
Maximum operating temperature	--	° C	150	150

- (1) **Dielectric Breakdown test**, is a material destructive laboratory test. It is performed according the IPC-TM-650 part 2.5.6.3., under AC voltage, raising it until electric failure, on relative small surface area of the dielectric part, and using metal electrodes. Values should be taken as a material reference, and not as guaranteed values.
- (2) **Electrical proof test**. 100% of our laminate production delivered, has been “on line” verified at 3000 V_{dc}: 500 V/sec. ramp // 5sec. held at 2000 V_{dc}.

AVAILABILITY	
STANDARD SHEET SIZES mm.	610 x 440, 920 x 610, 1060 x 585
Tolerance	+5/-0 mm.
Squareness	3 mm max., as differential between diagonal measurements.
Standard size tolerance in panels	+/- 0,3 mm.

The data is based on typical values of standard production and should be considered as general information. Our company reserves the right to future changes. It is the responsibility of the user to ensure that the product complies with his requirements.