COBRITHERM®

AISMALIBAR

DATA SHEET DS_1208

COBRITHERM HTC 2,2W (PROOF TEST 3000V)

DESCRIPTION

Insulated Metal Substrate (IMS), based aluminium clad with ED copper foil on the opposite side. It is designed for the reliable thermal dissipation of circuitry. A proprietarily formulated reinforced-polymer-ceramic bonding layer with high thermal conductivity and dielectric strength allows us to guarantee thermal endurance.

The material is supplied with a film on the aluminium side to protect it against wet PCB processes.

ROHS compliance directive 2002/95/EC and REACH Nº 1907/2006

STANDARD CONSTRUCTIONS

Aluminium thickness, µm (in)	1000 (0.039) – 1500 (0.059) – 2000 (0.078) – 3000 (0.11)	Aluminium Alloy / Treat	5052
Insulation thickness, µm	90-130 (3,5-5 mils)	Dielectric thickness tolerance	± 10 µm (0,4mils)
ED copper thickness, µm	35 (1oz) – 70 (2oz) – 105 (3oz)		
Other constructions available upon request			
UL Approved , QMTS2 File: E47820		**IPC 4101-B**	

(1) Electrical proof test . 100% of our laminate production delivered, has been "on line" verified at 1500/3000 V_{dc}: 500 V/sec. ramp // 5sec. held at 1500/3000 V_{dc}. (90µ/130µ respectively)

PROPERTIES 1500 µm Al / 130 µm dielectric /70 µm Cu	**TEST METHOD**	**UNITS**	**TYPICAL VALUES**	**Guaranteed values**
Time to blister at 288ºC, floating on solder (50 x 50 mm)	IEC-61189	Sec	>120	>60
Copper Peel strength, after heat shock 20 sec/288ºC	IPC-TM 650-2.4.8	N/mm (Lb/in)	2,8 (16,0)	>1,8 (>10,3)
Dielectric breakdown voltage, AC **(2) (130µ)**	IPC-TM 650-2.5.6.3	kV	8	7
Dielectric breakdown voltage, AC **(2) (90µ)**	IPC-TM 650-2.5.6.3	kV	5.5	5
Proof Test, DC **(1) (130µ)**	--	V	3000	3000
Proof Test, DC **(1) (90µ)**	--	V	1500	1500
Thermal conductivity (dielectric layer)	ASTM-D 5470	W/mK (W/inK)	2,20 (0,056)	2,00 (0,051)
Thermal impedance (dielectric layer) **HTC 90µ**	ASTM-D 5470	Kcm^2/W (Kin^2/K)	0,41 (0,063)	0,45 (0,070)
Thermal impedance (dielectric layer) **HTC 130µ**			0,59 (0,092)	0,65 (0,100)
Surface resistance after damp heat and recovery	IEC-61189	MΩ	10^5	10^5
Volume resistivity after damp heat and recovery	IEC-61189	MΩm	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	>550
Permittivity	--	pF/m (pF/in)	6,7 (39,4)	6,7 (39,4)
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	ºC	90	90
Maximum operating temperature	--	°C	150	150

(2) Dielectric Breakdown test is a material destructive laboratory test. It is performed according the IPC-TM-650 part 2.5.6.3., by using AC voltage until electric failure on a relatively small surface area of the dielectric layer using metal electrodes. Values should be taken as a material reference and not as guaranteed values.

AVAILABILITY	
STANDARD SHEET SIZES mm (inch)	1220x930 (48x37), 610x460 (24x18) 1060x1170 (42x46), 1210x1000(48x40), 1025x1225 (40,3x48,2) (Also available in cut panels)
Tolerance mm (inch)	+5/-0 (+0.2/-0,0000)
Squareness mm (inch)	3 (0,1181) max., as differential between diagonal measurements.
Standard size tolerance in panels mm (inch)	+- 0,3 (+/- 0.0118)

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.

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