



AISMALIBAR®

EXTENDS **LIFE** AND **DESIGN** WITHOUT LIMITS



FLEXTHERM®

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AIMSALIBAR FLEXTHERM is a high technology thermal insulated metal substrate, also known as a metal core copper clad laminate, for use in the production of conformable metal printed circuit boards. Its low thermal impedance allows the dissipation of temperature from the heating elements of a PCB into FLEXTHERM's metal core at an extremely efficient rate.

The flexible properties of this new material enable it to conform to both the negative and positive radii allowing the product to adapt to the ever changing demands of the industry.

Typical applications for FLEXTHERM are high power LED, power supply modules and the automotive industry.



FLEXTHERM CONSTRUCTIONS

Standard FLEXTHERM can be delivered from 0.5 mm.(0.019") - 1.5 mm.(0.059") aluminium and copper from 18 micron (0.5 Oz) - 105 micron (3 Oz) copper. The dielectric layers are composed of polyamide resins combined with a high thermal conductivity filler with an overall thickness of over 25 or 35 micron capable to stand with 2.000 V or 4.000 V dielectrical strength respectively. FLEXTHERM can be delivered for single side or double side metal printed circuit board construction.

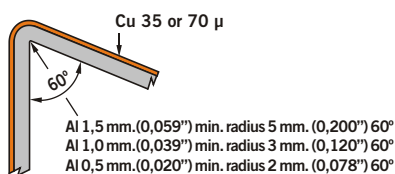
FLEXTHERM ORIENTATIVE PRODUCT APPLICATIONS

FLEXTHERM	Standard Construction (µ Al / Dielectric / Cu)	Dielectrical breakdown voltage AC	Orientalive Applications
FLEXTHERM - 25	1.500 / 25 / 35 or 70 (.059")/ 25 (0.98 mils) / 1oz or 2oz)	2.000 V	HiPo LEDs > 4 W. Medium Power applications, LEDs. Max. cost-effectiveness
FLEXTHERM - 35	1.500 / 35 / 35 or 70 (.059")/ 35 (1.4 mils) / 1oz or 2oz)	3.000 V	High Power applications,DC Power converters

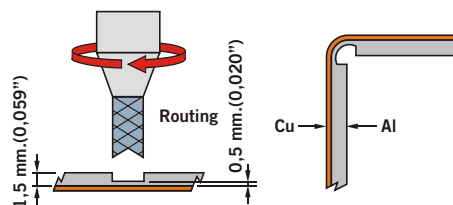
FLEXTHERM MECHANICAL CAPABILITIES

Conformable MPCB with FLEXTHERM

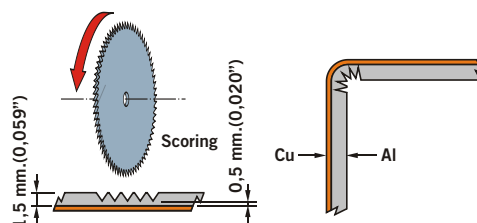
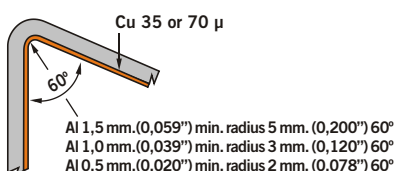
External Minimum Radius



Possibilities to reduce radius



Internal Minimum Radius



FLEXTHERM samples



DESCRIPTION

Insulated Metal Substrate (IMS) based on aluminium clad with RA copper copper foil on one or both sides. It is designed for the reliable thermal dissipation of circuitry. FLEXTHERM is ideal to produce conformable MPCB's which can be bent without compromising the initial dielectric strength between conductive layers. (Al and Cu).

SPECIFICATIONS

- Stands Lead Free Soldering process.
- Excellent for high temperature components applications.
- Extremely low thermal impedance.
- V-0 Granted.
- Halogen Free.
- High MOT values.
- Produced with RA copper to give enhanced conformable properties.

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 and REACH N° 1907/2006

STANDARD CONSTRUCTIONS

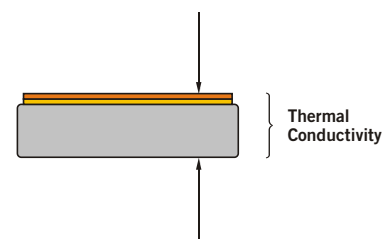
Aluminium thickness, µm (inch)	800 (0,032) - 1000 (0,039) - 1500 (0,059)	Aluminium Alloy / Treat	1050 - 3003 - 5754
Insulation thickness, µm	25 (0,98 mils) - 35 (1,38 mils)	Dielectric thickness tolerance	± 3 µm (0.1 mils)
RA copper thickness, µm	35 (1oz) - 70 (2oz)		
Other constructions available upon request			

PROPERTIES 1500 µm Al / 25 µm dielectric / 35 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	>60	>30
Copper Peel strength, after heat shock 20 sec/288°C	IPC-TM 650-2.4.8	N/mm (Lb/inch)	1,5 (16,0)	>1,0 (>10,3)
Dielectric breakdown voltage, AC (1) FLEXTHERM 25 µm	IPC-TM 650-2.5.6.3	kV	2	2
Dielectric breakdown voltage, AC (1) FLEXTHERM 35 µm			4	4
Thermal conductivity (dielectric layer)	ASTM-D 5470	W/mK (w/inK)	0,7 (0,018)	0,6 (0,015)
Flammability, according UL-94, class	UL-94	class	V-0	V-0
Thermal impedance °C-m²/watt FLEXTHERM 25 µm	Calculated	Kcm²/W (K in²/W)	0,36 (0,055)	0,42 (0,065)
Thermal impedance °C-m²/watt FLEXTHERM 35 µm			0,50 (0,078)	0,58 (0,090)
Maximum operating temperature		°C	140	130
Aluminium Thermal Conductivity	ASTM-D 5470	w/mK	135	130
Copper Thermal Conductivity	ASTM-D 5470	w/mK	375	380

AVAILABILITY	
Standard sheet sizes mm.	610x460 600x500
(inch)	24x28 23,5x20
Sheet size tolerance mm. (inch)	+5/-0 (+0,2/-0,0000)
Squareness mm. (inch)	1,5 (0,059) max., as differential between diagonal measurements.
Standard panel tolerance 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.

THERMAL CONDUCTIVITY AND THERMAL IMPEDANCE							
Composition		Dielectric Layer Thickness (mic)	IMS (Aluminium + dielectric + copper)				
Aluminium (mm)	Copper (mic)		Conductivity		Thermal impedance		
			W/m-K	W/inch-K	Kcm²/ W	Kinch²/ W	°C/W
1,0	35	25	24,5	0,623	0,432	0,067	0,144
1,0	70		25,3	0,642	0,433	0,067	0,144
1,5	35		33,3	0,845	0,469	0,073	0,156
1,5	70		33,9	0,862	0,470	0,073	0,157
1,0	35	35	18,6	0,473	0,575	0,089	0,192
1,0	70		19,2	0,487	0,576	0,089	0,192
1,5	35		25,7	0,652	0,612	0,095	0,204
1,5	70		26,2	0,665	0,613	0,095	0,204



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All our COBRITHERM products are UL, Lead Free, and CE approved.



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GABRIEL BENMAYOR S.A.- AISMALIBAR is environmentally friendly and committed to sustainable growth. Therefore, we utilize green energy in more than a 50% of the annual power consumption.