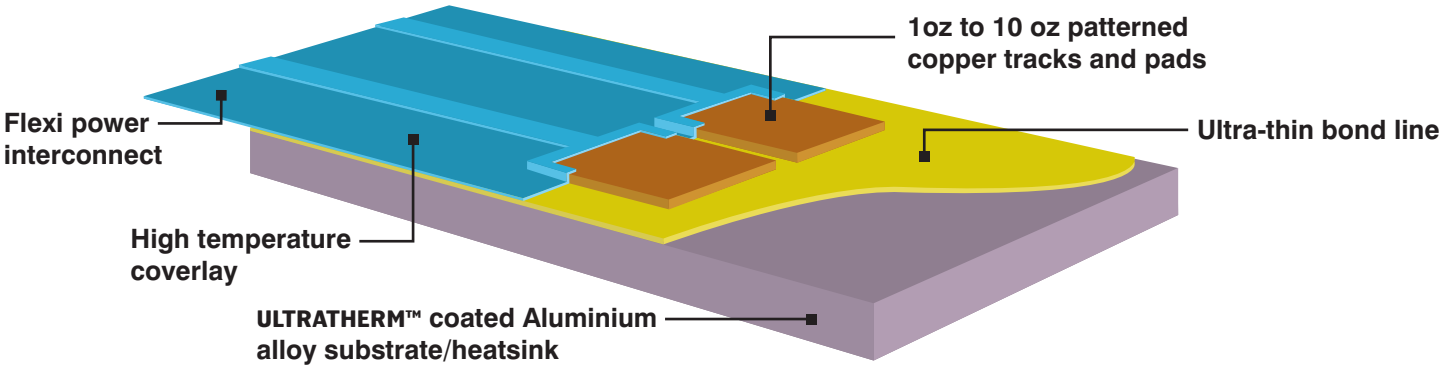
NEW GENERATION INSULATED METAL SUBSTRATES

FLEXITHERM™



FLEXITHERM™ is a new and unique patented form of insulated metal substrate, with lower thermal resistance than conventional IMS linked with a flexible power interconnect system that allows multiple substrate/ heatsinks and 3D design freedom.

FLEXITHERM™ circuitry is formed by bonding a patterned copper foil (1 oz to 10 oz) to a new form of oxide coated aluminium alloy substrate or heatsink. The copper foil is covered by a high temperature polyester or polyimide coverlay, forming a power flexible circuit interconnect, connecting to other circuit boards or connectors. The high temperature coverlay also acts as the solder mask for subsequent assembly.

All standard PCB metallisations are available for soldering, wire bonding and adhesive assembly.

MAIN FEATURES

- **High Thermal Conductivity (> 200 W/mK)**
- **Low Thermal Resistance (< 0.5˚C/W/cm²)**
- **Wide operating temperature (-55˚C to +150˚C)**
- **High electrical isolation and IR**
- **Flat substrate or 3D heatsink**
- **Eliminates thermal interfaces**
- **High power flexible interconnect – multi substrate / heat sink arrangements for 3D solutions**
- **Reduces interconnections, improves reliability, reduces cost, broadens design possibilities**
- **Integrates power and control**

MECHANICAL CONSTRUCTION

Layer	Material	Thickness		
Circuit Layer	ED Copper	1 oz	0.0014"	35 μm
		to		
		10 oz	0.014"	350 μm
Dielectric layer	Ceramic		0.0012"	30 μm
Base layer	Aluminium		0.040"	1.0 mm
			0.062"	1.6 mm
			0.080"	2.0 mm
			0.125"	3.2 mm
	Alloy	5083/6082		
	3D Cast or Extruded Heatsinks	6082/356/535		

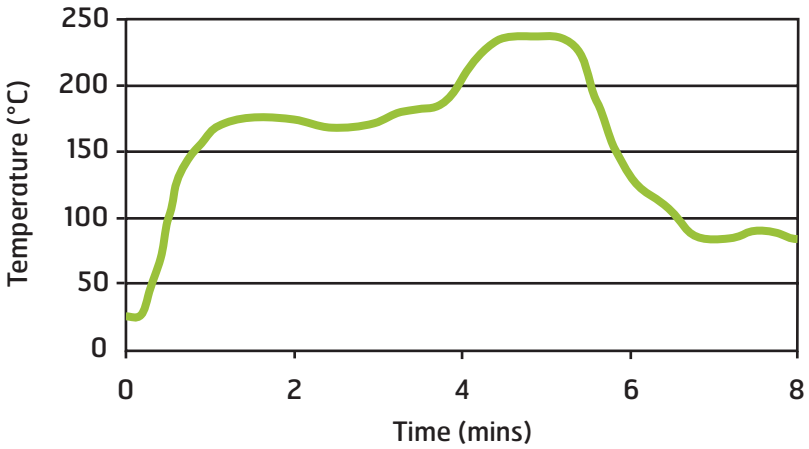
PROPERTIES

Property		Method	Units	FLEXITHERM™
Thermal Conductivity	k	Laser Flash	W/mK	> 200 (1)
Thermal Resistance	Rth	Calculated	°C/W (2)	< 0.43 (1)
Max Continuous Operating Temp	Tcont		°C	150
Adhesion		DIN 53282 39°	N/mm	> 1.5
Breakdown Voltage		IPC-TM-650 2.5.7	KV	> 2.5

(1) 75μm copper on 1.6 mm aluminium (2) Based on a 1cm square

LEAD FREE SOLDERING

Recommended Solder paste: Kester EM918, Sn96.5/Ag3/Cu0.5
Recommended Belt Reflow Profile: Peak temperature 236°C



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