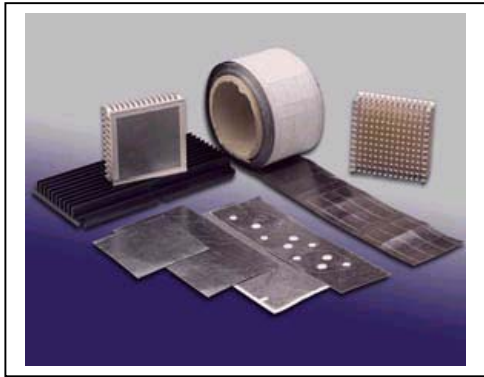


**eGRAF™ HiTherm™ Electronic Thermal Management Products**

eGraf™ HiTherm™ Thermal Interface Materials are designed for use in applications requiring low contact resistance and high thermal conductivity at low clamping loads



HiTherm materials are manufactured from natural graphite and a polymer additive. The addition of this polymer additive to highly conductive natural graphite minimizes the thermal resistance at low contact pressures.

The graph on the right shows the thermal resistance of HiTherm 003, 005 and HiTherm 010 as a function of contact pressure.

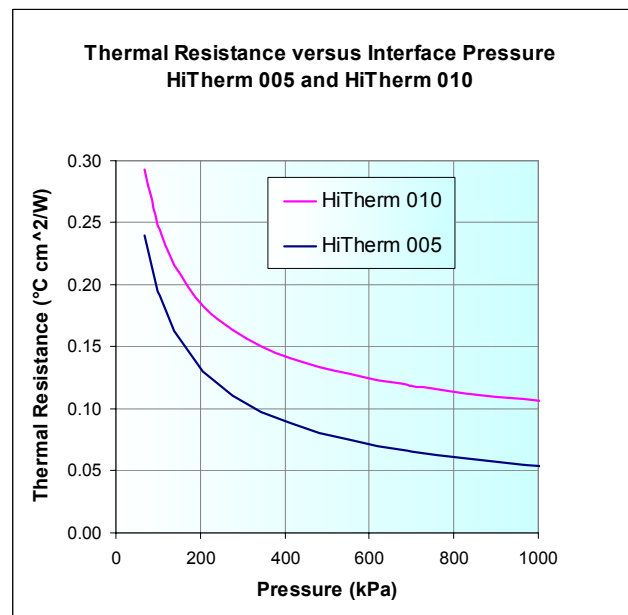
HiTherm materials are an excellent replacement for thermal grease or phase change materials. HiTherm will not separate, dry out or pump out. Excellent contact is maintained for the life of the assembly.

Typical applications include DC to DC converters, CPU modules microprocessors, and hot and cold plates.

All HiTherm materials are available with or without a pressure sensitive adhesive (PSA), in sheet, roll or die cut form. HiTherm can be easily cut to any size or shape.

**Typical Properties of HiTherm Materials**

Property	HiTherm 003	HiTherm 005	HiTherm 010	Test Method
<i>Physical</i>				
Color	Dark Grey	Dark Grey	Dark Grey	
Thickness	0.08 mm	0.13 mm	0.25 mm	
Tensile Strength	2400 kPa	1400 kPa	1780 kPa	ASTM F-152
<i>Thermal</i>				
Operating Temperature	-40 to 150 °C	-40 to 150 °C	-40 to 150 °C	
Thermal Impedance @100 kPa	0.19 cm <sup>2</sup> °C/W	0.19 cm <sup>2</sup> °C/W	0.25 cm <sup>2</sup> °C/W	ASTM D 5470 Modified
Thermal Impedance @700 kPa	0.07 cm <sup>2</sup> °C/W	0.07 cm <sup>2</sup> °C/W	0.12 cm <sup>2</sup> °C/W	ASTM D 5470 Modified
Thermal Conductivity				
Thru-thickness	10 W/m•K	16 W/m•K	16 W/m•K	ASTM D 5470 Modified
In-plane	240 W/m•K	120 W/m•K	120 W/m•K	Angstrom's Method
<i>Electrical - typical</i>				
Electrical Resistivity				
Thru-thickness	>100 µohm	>100 µohm	>100 µohm	ASTM C611
In-plane	10 µohm m	10 µohm m	10 µohm m	ASTM C611
<i>Note: Dielectric coatings can be applied to HiTherm materials to increase Thru-thickness Electrical Resistivity</i>				



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