



# HITHERM<sup>™</sup> Thermal Interface Materials

Technical Data Sheet 318

#### **Product Overview**

eGRAF<sup>®</sup> HITHERM<sup>™</sup> thermal interface materials are designed for use in applications requiring low contact resistance and high thermal conductivity. The flexible graphite materials can be die-cut and/or laminated with plastics and adhesives.

### **Part Designation**

Every eGRAF<sup>®</sup> HITHERM<sup>™</sup> thermal interface part number defines the grade and coating options of the material and is constructed based on the following example:

Thermal Interface Material			al	Optional Coating	
нт	—	12	10	A*	
Product Name		Series Name	Typical Graphite Thickness	Adhesive	
			(thousands of an inch)	* Dielectric coating may be availa	

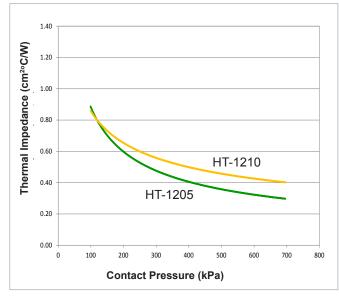
### Product Series Characteristics<sup>[1]</sup>

Characteristic	Unit	Pure Graphite	Polymer Enhanced
		HT-1200 Series	HT-2500 Series
Thermal Impedance @ 200 kPa	K-cm²/W	HT-1205 = 0.59 HT-1210 = 0.66	HT-2505 = 0.41 HT-2510 = 0.58
Thermal Impedance @ 700 kPa	K-cm²/W	HT-1205 = 0.30 HT-1210 = 0.40	HT-2505 = 0.24 HT-2510 = 0.41
Typical Thermal Conductivity <sup>[2]</sup> @ 700 kPa Through-Plane ● In-Plane	W/m-K	10 • 150	16 • 120
Typical Thickness with Tolerance 0.127 mm (0.005") ± 10% 0.25 mm (0.010") ± 5% 0.51 mm (0.020") ± 5%	-	HT-1205 HT-1210 HT-1220	HT-2505 HT-2510 -
Electrical Resistivity <sup>[3]</sup> In-Plane • Through Thickness	μΩm	60 • 1230	80 • 1550
Hardness (Shore A)		85	
Coefficient of Thermal Expansion (CTE) In Plane   Through-Plane	ppm/°C	-0.4 • 27.0	
Flammability Rating	UL	94V-0	
Operating Temperature	°C	-40 to +400	–25 to +125
Specific Heat @ 25°C	J/g-°C	0.77	
RoHS Compliant	-	Yes	
Halogen Free	-	Y	es

### HITHERM<sup>™</sup> Thermal Interface Materials - Coating Options

Characteristic	Adhesive "A" Coating
Thickness (mm ● inches)	0.008 • 0.0003
Operating Temperature (°C)	-40 to +150
Thermal Impedance <sup>[4]</sup> per Side (cm <sup>2</sup> °C/W @ 110 kPa)	0.16
Thermal Conductivity (W/m-К)	-
Dielectric Strength (V)	-
Adhesive Strength <sup>[5]</sup> (g/cm <sup>2</sup> )	700 Typical 450 Minimum

#### **Thermal Impedance vs. Interface Pressure**



#### HITHERM<sup>™</sup> 1200 Series

#### Notes:

Properties listed are typical and cannot be used as accept/reject specifications.
 In-Plane conductivity at ambient temperature determined using Angstrom's Method.

Through-plane conductivity determined using ASTM D5470 Modified Method. [3] ASTM C611.4 Point Resistivity Test.

[4] ASTM D5470 Modified (at 110kPa/16 psi/1.1 bar).

Total thermal impedance = thermal impedance of graphite + thermal impedance of coating.

[5] Adhesive Strength is based on a lap shear test (ASTM D3163) with material adhering to a glass plate.

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## **Redefining limits**



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#### HITHERM<sup>™</sup> 2500 Series

