NEOGRAF™ SOLUTIONS

eGRAF®

HITHERM™ Thermal Interface Materials

TECHNICAL DATA SHEET 318

Product Overview

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

Product Series Characteristics[1]

CHARACTERISTIC	UNIT	PURE GRAPHITE HT-1200 Series	POLYMER ENHANCED 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[2] @ 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[3] 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	0.71	
RoHS Compliant	-	Yes	
Lead / Halogen Free	-	Yes	

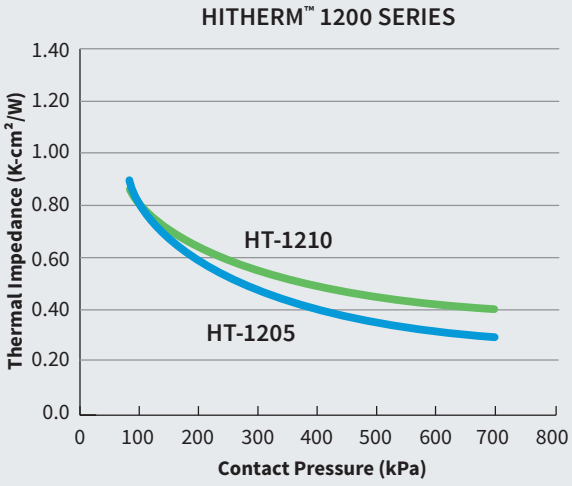
THERMAL INTERFACE MATERIAL				OPTIONAL COATING
HT	—	12	10	A
Product Name		Series Name	Typical Graphite Thickness (thousands of an inch)	Adhesive

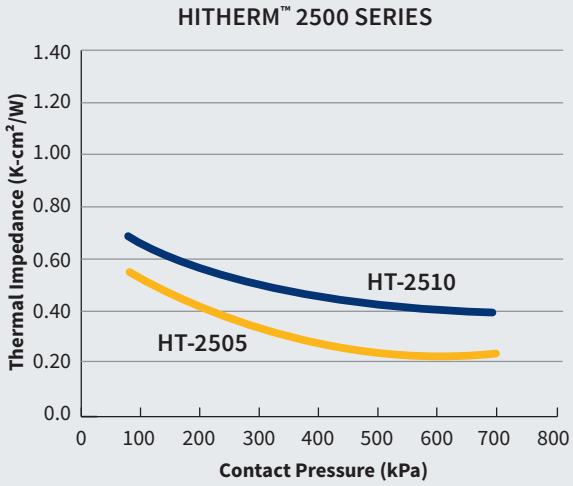
HITHERM™ Thermal Interface Materials - Adhesive Coating Option

CHARACTERISTIC	ADHESIVE "A" COATING*
Nominal Thickness (mm • inches)	0.008 • 0.0003
Operating Temperature (°C)	-40 to +150
Thermal Impedance[4] per Side (cm^2 °C/W @ 110 kPa)	0.16
Thermal Conductivity (W/m-K)	-
Dielectric Strength (V)	-
Adhesive Strength[5] (g/cm^2)	700 Typical 450 Minimum

*Adhesive not available on HT-1220 Grade

Thermal Impedance vs. Interface Pressure





Notes:
[1] Properties listed are typical and cannot be used as accept/reject specifications.
[2] 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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