

# Sur-Seal®

## HITHERM™ Graphite Thermal Interface Materials

Thermal Management



**RAPID**  
**RIGHT**  
**RELIABLE**

HITHERM graphite thermal interface materials (TIMs) provide a solution for long-life, zero maintenance applications with extreme heat cycles. HITHERM's flexible graphite are the ideal thermal management solution for today's demanding power electronics and lighting.

- Consistent, reliable thermal performance enabling zero maintenance applications
- Will not flow or pump out under any thermal extremes, thermal cycles, or part orientation
- Assembly-ready foil form factor eliminates dispensing and cleaning processes
- Minimal outgassing prevents fouling of optics in lighting applications
- Silicone-free graphite material eliminates risk of clouding LED optics
- RoHS compliant and UL94 V0 Listed





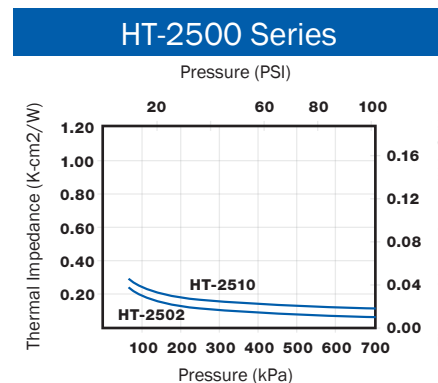
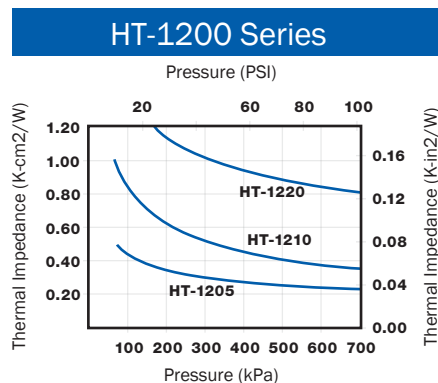
### Product Series Characteristics<sup>[1]</sup>

Characteristic	Pure Graphite 1200 Series	Polymer Enhanced 2500 Series
Typical Thermal Conductivity <sup>[2]</sup> Through-Plane • In-Plane (W/mK)	10 • 150	16 • 120
Thermal Thickness with Tolerance 0.127 mm (0.005") ± 10% 0.25 mm (0.010") ± 10% 0.51 mm (0.020") ± 10%	HT-1205 HT-1210 HT-1220	HT-2505 HT-2510 -
Electrical Resistivity <sup>[3]</sup> Through-Plane • In-Plane (μΩm)	60 • 1230	80 • 1550
Operating Temperature ( °C)	-40 TO +400	-25 TO +125
Hardness (Shore A)		85
Coefficient of Thermal Expansion (CTE) Through-Plane • In-Plane (ppm/ °C)		-0.4 • 27.0
Specific Heat @ 25 °C (J/kg- °C)		710
RoHS Compliant		Yes

### HITHERM™ 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/mK)	-
Dielectric Strength (V)	-
Adhesive Strength <sup>[5]</sup> (g/cm <sup>2</sup> )	700 Typical 450 Minimum

### Thermal Impedance v. Interface Pressure



Notes:  
 [1] Properties listed are typical and cannot be used as acceptance or rejection criteria.  
 [2] In-plane conductivity at ambient temperature determined using Angstrom's method; through-plane determined using ASTM D5470 Modified method.  
 [3] ASTM D611.4 Point Resistivity Test.  
 [4] ASTM D5470 Modified (at 11kPa/16 psi/1.1 bar).  
 Total thermal impedance = impedance of graphite + impedance of coating.  
 [5] Adhesive strength is based on lap shear test (ASTM D3163) with material adhering to a glass plate.

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