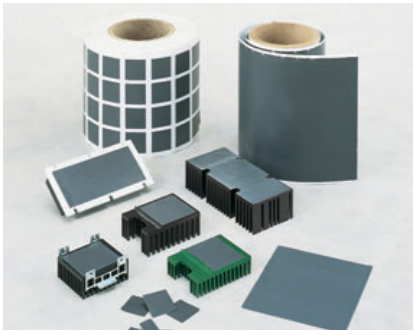
Hi-Flow® 105

Phase Change Coated Aluminum

Features and Benefits

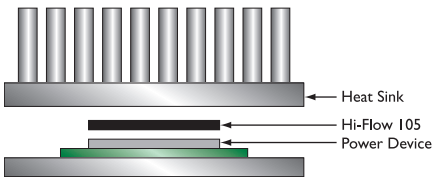
- Thermal impedance: 0.37°C-in²/W (@25 psi)
- Used where electrical isolation is not required
- Low volatility – less than 1%
- Easy to handle in the manufacturing environment
- Flows but doesn't run like grease



Hi-Flow 105 is a phase change material coated on both sides of an aluminum substrate. It is designed specifically to replace grease as a thermal interface, eliminating the mess, contamination and difficult handling associated with grease. Hi-Flow 105 is tack free and scratch resistant at room temperature and does not require a protective liner in shipment when attached to a heat sink.

At 65°C (phase change temperature), Hi-Flow 105 changes from a solid and flows, thereby assuring total wet-out of the interface. The thixotropic characteristics of Hi-Flow 105 reduces the pump-out from the interface.

Hi-Flow 105 has thermal performance equal to grease with 0.10°C-in²/W contact thermal resistance.



TYPICAL PROPERTIES OF HI-FLOW 105

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	Dark Gray	Dark Gray	Visual
Reinforcement Carrier	Aluminum	Aluminum	—
Thickness (inch) / (mm)	0.0055	0.139	ASTM D374
Continuous Use Temp (°F) / (°C)	266	130	—
Phase Change Temp (°F) / (°C)	149	65	DSC
ELECTRICAL			
Dielectric Constant (1000 (Hz)	3.2	3.2	ASTM D150
Flame Rating	94 V-O	94 V-O	U.L.
THERMAL			
Thermal Conductivity (W/m-K) (1)	0.9	0.9	ASTM D5470

THERMAL PERFORMANCE vs PRESSURE					
Pressure (psi)	10	25	50	100	200
TO-220 Thermal Performance (°C/W)	0.95	0.80	0.74	0.69	0.64
Thermal Impedance (°C-in²/W) (2)	0.39	0.37	0.36	0.33	0.30

1) This is the measured thermal conductivity of the Hi-Flow coating. It represents one conducting layer in a three-layer laminate. The Hi-Flow coatings are phase change compounds. These layers will respond to heat and pressure induced stresses. The overall conductivity of the material in post-phase change, thin film products is highly dependent upon the heat and pressure applied. This characteristic is not accounted for in ASTM D5470. Please contact Bergquist Product Management if additional specifications are required.
2) The ASTM D5470 (Bergquist modified) test fixture was used and the test sample was conditioned at 70°C prior to test. The recorded value includes interfacial thermal resistance. These values are provided for reference only. Actual application performance is directly related to the surface roughness, flatness and pressure applied.

Typical Applications Include:

- Power semiconductors
- Microprocessors mounted on a heat sink
- Power conversion modules
- Spring or clip mount applications where thermal grease is used

Configurations Available:

- Sheet form, die-cut parts , and roll form
- With or without pressure sensitive adhesive

Building a Part Number

HF105 - 0.0055 - AC - 12/250 - NA

- Section A: HF105 = Hi-Flow 105
- Section B: Standard thicknesses available: 0.0055"
- Section C: AC = Adhesive one side, 00 = no adhesive
- Section D: 1212 = 12" X 12" sheets, 12/250 = 12" X 250' rolls, 00= custom configuration
- Section E: NA = Selected standard option. If not selecting a standard option, insert company name, drawing number, and revision level.

Standard Options

example

Note: To build a part number, visit our website at www.bergquistcompany.com.

Hi- Flow®: U.S. Patent 5,950,066 and others

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