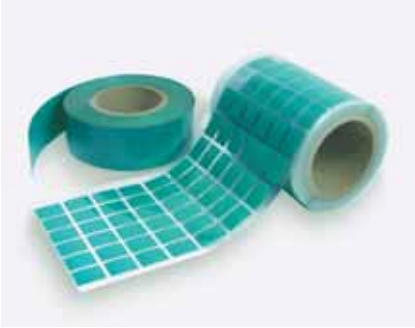
Hi-Flow® 300G

Fiberglass-Reinforced, Phase Change Thermal Interface Material

Features and Benefits

- Thermal impedance: 0.20°C-in²/W (@25 psi)
- Will not drip or run like grease
- Phase change compound coated on a fiberglass carrier



Hi-Flow 300G consists of a thermally conductive 55°C phase change compound coated on a fiberglass web. Hi-Flow 300G is designed as a thermal interface material between a computer processor and a heat sink.

Above the phase change temperature, Hi-Flow 300G wets-out the thermal interface surfaces and flows to produce low thermal impedance. The material requires pressure of the assembly to cause flow. Hi-Flow 300G will not drip or run like grease.

Application Methods

1. Hand-apply to 40°- 50°C heat sink. The heat sink is heated in an oven or by a heat gun to between 40°- 50°C allowing the Hi-Flow 300G pad to be applied like an adhesive pad. The heat sink is then cooled to room temperature and packaged.
2. Hand-apply to 20°- 35°C heat sink. Hi-Flow 300G can be applied to a room temperature heat sink with the assistance of a foam roller. The pad is positioned on the heat sink and a hand roller is used to apply pressure of 30 psi.
3. Automated equipment with 30 psi pressure. A pick-and-place automated dispensing unit can be used to apply Hi-Flow 300G to a room temperature heat sink. The placement head should have a soft silicone rubber pad, and apply 30 psi pressure to the pad on transfer to the 20°- 35°C heat sink.

TYPICAL PROPERTIES OF HI-FLOW 300G

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	Green	Green	Visual
Reinforcement Carrier	Fiberglass	Fiberglass	—
Thickness (inch) / (mm)	0.005	0.127	ASTM D374
Elongation (%45° to Warp and Fill)	40	40	ASTM D882A
Tensile Strength (psi) / (MPa)	400	3	ASTM D882A
Continuous Use Temp (°F) / (°C)	212	100	—
Phase Change Temp (°F) / (°C)	131	55	ASTM 3418
ELECTRICAL			
Dielectric Breakdown Voltage (Vac)	300	300	ASTM D149
Dielectric Constant (1000 Hz)	3.5	3.5	ASTM D150
Volume Resistivity (Ohm-meter)	10^8	10^8	ASTM D257
Flame Rating	V-O	V-O	U.L. 94
THERMAL			
Thermal Conductivity (W/m-K) (1)	1.6	1.6	ASTM D5470

THERMAL PERFORMANCE vs PRESSURE					
Pressure (psi)	10	25	50	100	200
TO-220 Thermal Performance (°C/W)	0.96	0.92	0.88	0.85	0.84
Thermal Impedance (°C-in²/W) (2)	0.27	0.20	0.16	0.15	0.14

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 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:

- Computer and peripherals
- As a thermal interface where bare die is exposed and needs to be heat sinked

Configurations Available:

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

Building a Part Number

HF300G – 0.005 – 00 – 1012 – NA

- Section A: HF300G = Hi-Flow 300G Phase Change Material
- Section B: 0.005 = Standard thicknesses available: 0.005"
- Section C: 00 = No adhesive; AC = Adhesive, one side
- Section D: ____ = Standard configuration dash number, 1012 = 10" x 12" sheets, 10/250 = 10" x 250' rolls, or 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 6,197,859 and others

THE BERGQUIST COMPANY www.bergquistcompany.com

The Bergquist Company - North American Headquarters
18930 West 78th Street
Chanhassen, MN 55317
Phone: 800-347-4572
Fax: 952-835-0430

The Bergquist Company - European Headquarters
Bramenberg 9a, 3755 BT Eemnes
Netherlands
Phone: 31-35-5380684
Fax: 31-35-5380295

The Bergquist Company - Asia
Room 15, 8/F Wah Wai Industrial Centre
No. 38-40, Au Pui Wan Street
Fotan, Shatin, N.T. Hong Kong
Ph: 852.2690.9296
Fax: 852.2690.2344

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