Hi-Flow® 115-AC

Fiberglass-Reinforced, Phase Change Thermal Interface Material

Features and Benefits

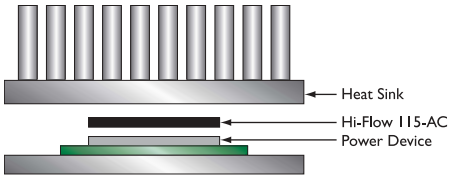
- Thermal impedance: 0.37°C-in²/W (@25 psi)
- Can be applied directly to a cold heat sink
- One side adhesive-coated to aid in positioning
- Fiberglass reinforced

Bergquist Hi-Flow 115-AC is a thermally conductive fiber reinforced phase change material. The product consists of a thermally conductive 65°C phase change compound coated on a fiberglass web, and an adhesive coating on one side for attachment to a cold heat sink. There is no need to preheat the heat sink to apply the Hi-Flow 115-AC.

Hi-Flow 115-AC is designed as a thermal interface material between a computer processor and a heat sink. The pressure sensitive adhesive makes it simple to apply in high volume to heat sinks and the 65°C phase change temperature eliminates shipping and handling problems.

Hi-Flow 115-AC requires no protective liner for shipping or handling. The Hi-Flow coating has excellent handling characteristics at room temperature, and can withstand the handling and shipping process without protection.

Hi-Flow 115-AC handles like a Sil Pad at room temperature and flows like high-quality grease at elevated temperatures.



TYPICAL PROPERTIES OF HI-FLOW 115-AC

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	Gray	Gray	Visual
Reinforcement Carrier	Fiberglass	Fiberglass	—
Thickness (inch) / (mm)	0.0055	0.139	ASTM D374
Elongation (%45° to Warp and Fill)	40	40	ASTM D882A
Tensile Strength (psi) / (MPa)	900	6	ASTM D882A
Continuous Use Temp (°F) / (°C)	302	150	—
Phase Change Temp (°F) / (°C)	149	65	ASTM D3418
ELECTRICAL			
Dielectric Breakdown Voltage (Vac)	300	300	ASTM D149
Dielectric Constant (1000 Hz)	3.5	3.5	ASTM D150
Volume Resistivity (Ohm-meter)	10^{10}	10^{10}	ASTM D257
Flame Rating	V-O	V-O	U.L. 94
THERMAL			
Thermal Conductivity (W/m-K) (1)	0.8	0.8	ASTM D5470

THERMAL PERFORMANCE vs PRESSURE

Pressure (psi)	10	25	50	100	200
TO-220 Thermal Performance (°C/W)	1.28	1.16	1.04	0.94	0.85
Thermal Impedance (°C-in²/W) (2)	0.44	0.37	0.35	0.27	0.15

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:

- 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 pressure sensitive adhesive

Building a Part Number

HF115AC – 0.0055 – AC – 12/250 – NA

- Section A: HF115AC = Hi-Flow 115-AC Phase Change Material
- Section B: 0.0055 = Standard thicknesses available: 0.0055"
- Section C: AC = Adhesive, one side; 00 = No adhesive
- Section D: ____ = Standard configuration dash number, 1212 = 12" x 12" sheets, 12/250 = 12" 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. Patents 6,197,859 and 5,950,066.

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 - Europe
Bramenberg 9a, 3755 BT Eemnes
Netherlands
Phone: 31-35-5380684
Fax: 31-35-5380295

The Bergquist Company - China
Rm. 7C, Aihe Mansion
No. 629 Ling Ling Road
Shanghai, China 200030
Ph: 86-21-6464-2206
Fax: 86-21-6464-2209

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