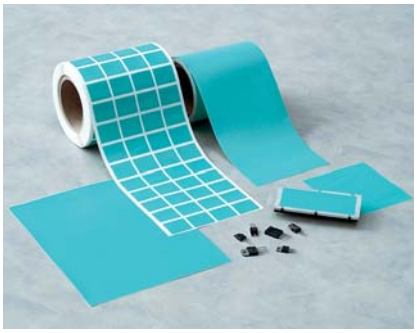
Hi-Flow® 625

Electrically Insulating, Thermally Conductive Phase Change Material

Features and Benefits

- Thermal impedance: 0.71°C-in²/W (@25 psi)
- Electrically isolating
- 65°C phase change compound coated on PEN film
- Tack-free and scratch-resistant



Hi-Flow 625 is a film-reinforced phase change material. The product consists of a thermally conductive 65°C phase change compound coated on PEN film. Hi-Flow 625 is designed to be used as a thermal interface material between electronic power devices that require electrical isolation and a heat sink. The reinforcement makes Hi-Flow 625 easy to handle, and the 65°C phase change temperature of the coating material eliminates shipping and handling problems. The PEN film has a continuous use temperature of 150°C.

Hi-Flow 625 is tack-free and scratch-resistant at production temperature and does not require a protective liner in most shipping situations. The material has the thermal performance of 2-3 mil mica and grease assemblies.

TYPICAL PROPERTIES OF HI-FLOW 625

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	Green	Green	Visual
Reinforcement Carrier	PEN Film	PEN Film	—
Thickness (inch) / (mm)	0.005	0.127	ASTM D374
Elongation (%45° to Warp and Fill)	60	60	ASTM D882A
Tensile Strength (psi) / (MPa)	30,000	206	ASTM D882A
Continuous Use Temp (°F) / (°C)	302	150	—
Phase Change Temp (°F) / (°C)	149	65	ASTM D3418
ELECTRICAL			
Dielectric Breakdown Voltage (Vac)	4000	4000	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)	0.5	0.5	ASTM D5470

THERMAL PERFORMANCE vs PRESSURE

Pressure (psi)	10	25	50	100	200
TO-220 Thermal Performance (°C/W)	2.26	2.10	2.00	1.93	1.87
Thermal Impedance (°C-in²/W) (2)	0.79	0.71	0.70	0.67	0.61

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:

- Spring / clip mounted
- Power semiconductors
- Power modules

Configurations Available:

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

Building a Part Number

HF625 – 0.005 – AC – 1212 – NA

- Section A: HF625 = Hi-Flow 625 Phase Change Material
- Section B: 0.005 = Standard thicknesses available: 0.005"
- Section C: AC = Adhesive, one side; 00 = No adhesive
- Section D: 1212 = 12" x 12" sheets, 12/250 = 12" x 200' 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