BERGQUIST

Technical Data Sheet

BERGQUIST HI FLOW THF 1600P

Known as BERGQUIST HI-FLOW 300P
April 2020

PRODUCT DESCRIPTION

Electrically Insulating, Thermally Conductive Phase Change Material.

Technology	Phase Change
Appearance	Green
Reinforcement Carrier	Polyimide
Total Thickness , ASTM D374	0.102 to 0.127 mm
Film Thickness , ASTM D374	0.025 to 0.05 mm
Application	Thermal management, Thermally conductive adhesive
Operating Temperature	150 °C

FEATURES AND BENEFITS

- Thermal impedance: 0.13°C-in²/W @ 25 psi
- Field-proven polyimide film
  - excellent dielectric performance
  - excellent cut-through resistance
- Outstanding thermal performance in an insulated pad

TYPICAL APPLICATIONS

- Spring/clip mounted
- Discrete power semiconductors and modules

BERGQUIST HI FLOW THF 1600P consists of a thermally conductive 55°C phase change compound coated on a thermally conductive polyimide film. The polyimide reinforcement makes the material easy to handle and the 55°C phase change temperature minimizes shipping and handling problems.

BERGQUIST HI FLOW THF 1600P achieves superior values in voltage breakdown and thermal performance when compared to its competition. The product is supplied on an easy release liner for exceptional handling in high volume manual assemblies.

BERGQUIST HI FLOW THF 1600P is designed for use as a thermal interface material between electronic power devices requiring electrical isolation to the heat sink.

Bergquist suggests the use of spring clips to assure constant pressure with the interface and power source. Please refer to thermal performance data to determine nominal spring pressure for your application.

TYPICAL PROPERTIES

Physical Properties

Elongation , ASTM D882A,%	40
Tensile Strength, ASTM D882A, MPa	48
Phase Change Temperature, ASTM D3418, °C	55
Flammability Rating, UL 94	V-0

Electrical Properties

Dielectric Breakdown Voltage, ASTM D149, VAC	5,000
Dielectric Constant , ASTM D150 @ 1,000 Hz	4.5
Volume Resistivity, ASTM D257, ohm-meter	1×10^{12}

Thermal Properties

Thermal Conductivity , ASTM D5470, W/(m-K) (1)	1.6

Thermal Performance vs. Pressure

TO-220 Thermal Performance, °C/W	
@ 0.001"	
@ 10 psi	0.95
@ 25 psi	0.94
@ 50 psi	0.92
@ 100 psi	0.91
@ 200 psi	0.9
@ 0.0015"	
@ 10 psi	1.19
@ 25 psi	1.17
@ 50 psi	1.16
@ 100 psi	1.14
@ 200 psi	1.12
@ 0.002"	
@ 10 psi	1.38
@ 25 psi	1.37
@ 50 psi	1.35
@ 100 psi	1.33
@ 200 psi	1.32

Thermal Impedance, ASTM D5470, °C-in²/W (2)	
@ 0.001"	
@ 10 psi	0.13
@ 25 psi	0.13
@ 50 psi	0.12
@ 100 psi	0.12
@ 200 psi	0.12

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@ 0.0015"	
@ 10 psi	0.17
@ 25 psi	0.16
@ 50 psi	0.16
@ 100 psi	0.16
@ 200 psi	0.15
@ 0.002"	
@ 10 psi	0.19
@ 25 psi	0.19
@ 50 psi	0.19
@ 100 psi	0.18
@ 200 psi	0.18

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.

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

CONFIGURATIONS AVAILABLE

BERGQUIST HI FLOW THF 1600P is supplied in:

- Roll form, die-cut parts and sheet form, dry both sides

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb/F
N/mm x 5.71 = lb/in
psi x 145 = N/mm²
MPa = N/mm²
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

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Reference N/A

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