Technical Data Sheet

BERGQUIST HI FLOW THF 500

Known as BERGQUIST HI-FLOW 625
April 2020

PRODUCT DESCRIPTION

Reinforced Phase Change Thermal Interface Material.

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

FEATURES AND BENEFITS

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

TYPICAL APPLICATIONS

- Spring/clip mounted
- Power semiconductors
- Power modules

BERGQUIST HI FLOW THF 500 is a film-reinforced phase change material. The product consists of a thermally conductive 65°C phase change compound coated on PEN film. BERGQUIST HI FLOW THF 500 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 BERGQUIST HI FLOW THF 500 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.

BERGQUIST HI FLOW THF 500 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

Physical Properties

Elongation , 45º to warp and fill, ASTM D882,%	60
Tensile Strength, ASTM D882, MPa	206
Phase Change Temperature, ASTM D3418, ºC	65
Flammability Rating, UL 94	V-0

Electrical Properties

Dielectric Breakdown Voltage, ASTM D149, Vac	4,000
Dielectric Constant , ASTM D150 @ 1,000 Hz	3.5
Volume Resistivity, ASTM D257, ohm-meter	1×10^{10}

Thermal Properties

Thermal Conductivity , ASTM D5470, W/(m-K) (1)	0.5

Thermal Performance vs. Pressure

TO-220 Thermal Performance, ºC/W:	
@ 10 psi	2.26
@ 25 psi	2.1
@ 50 psi	2.0
@ 100 psi	1.93
@ 200 psi	1.87
Thermal Impedance, ASTM D5470, ºC-in²/W (2):	
@ 10 psi	0.79
@ 25 psi	0.71
@ 50 psi	0.7
@ 100 psi	0.67
@ 200 psi	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.

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 500 is supplied in:

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

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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