BERGQUIST

Technical Data Sheet

# Hi-Flow® 300P

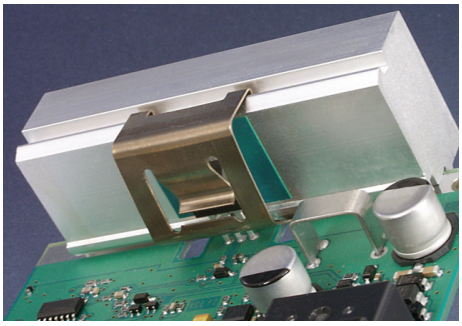
November 2013

## PRODUCT DESCRIPTION

Electrically Insulating,Thermally Conductive Phase Change Material

## 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



Hi-Flow® 300P 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.

Hi-Flow® 300P 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. Hi-Flow 300P 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.

*Note: To build a part number, visit our website at www.bergquistcompany.com.*

## TYPICAL PROPERTIES OF HI-FLOW 300P

| PROPERTY | IMPERIAL VALUE | METRIC VALUE | TEST METHOD |
|---|---|---|---|
| Color | Green | Green | Visual |
| Reinforcement Carrier | Polyimide | Polyimide | — |
| Thickness (inch) / (mm) | 0.004 - 0.005 | 0.102 - 0.127 | ASTM D374 |
| Film Thickness (inch) / (mm) | 0.001 - 0.002 | 0.025 - 0.050 | ASTM D374 |
| Elongation (%) | 40 | 40 | ASTM D882A |
| Tensile Strength (psi) / (MPa) | 7000 | 48 | ASTM D882A |
| Continuous Use Temp (°F) / (°C) | 302 | 150 | — |
| Phase Change Temp (°F) / (°C) | 131 | 55 | ASTM D3418 |
| **ELECTRICAL** | | | |
| Dielectric Breakdown Voltage (Vac) | 5000 | 5000 | ASTM D149 |
| Dielectric Constant (1000 Hz) | 4.5 | 4.5 | ASTM D150 |
| Volume Resistivity (Ohm-meter) | $10^{12}$ | $10^{12}$ | 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) 0.0010" | 0.95 | 0.94 | 0.92 | 0.91 | 0.90 |
| TO-220 Thermal Performance (°C/W) 0.0015" | 1.19 | 1.17 | 1.16 | 1.14 | 1.12 |
| TO-220 Thermal Performance (°C/W) 0.0020" | 1.38 | 1.37 | 1.35 | 1.33 | 1.32 |
| Thermal Impedance (°C-in²/W) 0.0010" (2) | 0.13 | 0.13 | 0.12 | 0.12 | 0.12 |
| Thermal Impedance (°C-in²/W) 0.0015" (2) | 0.17 | 0.16 | 0.16 | 0.16 | 0.15 |
| Thermal Impedance (°C-in²/W) 0.0020" (2) | 0.19 | 0.19 | 0.19 | 0.18 | 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.

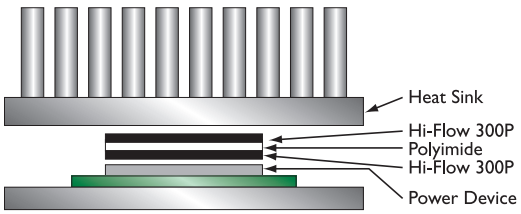
## TYPICAL APPLICATIONS INCLUDE

- Spring / clip mounted
- Discrete power semiconductors and modules

## CONFIGURATIONS AVAILABLE

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

We produce thousands of specials. Tooling charges vary depending on tolerances and complexity of the part.



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