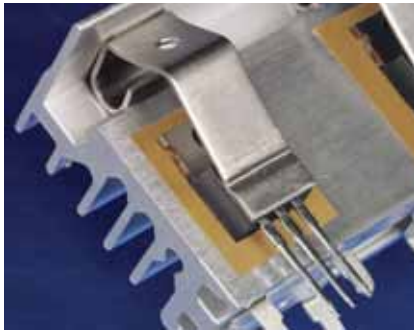


Electrically Insulating, High Performance, Thermally Conductive Phase Change Material

Features and Benefits

- Thermal impedance: 0.18°C-in²/W (@25 psi)
- Natural tack for ease of assembly
- Exceptional thermal performance in an insulated pad



Hi-Flow 330P is a thermally conductive phase change material featuring a natural tack on one side and reinforced with a polyimide film. The polyimide film provides a high dielectric strength and cut-through resistance. Hi-Flow 330P offers excellent handling and consistent liner peel-off characteristics. The material is designed for use between a high power electrical device requiring electrical isolation and its heat sink. Bergquist recommends the use clips or springs for phase change materials to assure constant pressure between the component interface and the heat sink.

Typical Applications

- Spring / clip-mounted devices
- Discrete power semiconductors and modules

Configurations Available

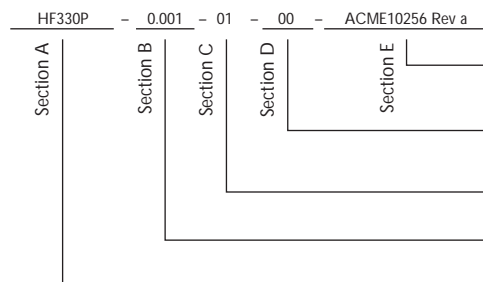
- Roll form, die-cut parts, sheet form
- Available with 1.0 mil (Hi-Flow 330P1.0), 1.5 mil (Hi-Flow 330P1.5) or 2.0 mil (Hi-Flow 330P2.0) Polyimide reinforcement carrier

TYPICAL PROPERTIES OF HI-FLOW 330P

| PROPERTY | IMPERIAL VALUE | METRIC VALUE | TEST METHOD | | | |
|---|------------------|------------------|-------------|------|------|------|
| Color | Gold | Gold | Visual | | | |
| Reinforcement Carrier | Polyimide | Polyimide | — | | | |
| Thickness (inch) / (mm) | 0.0045 - 0.0055 | 0.114 - 0.140 | — | | | |
| Film Thickness (inch) / (mm) | 0.001 - 0.002 | 0.025 - 0.050 | ASTM D374 | | | |
| Inherent Surface Tack (1 or 2-Side) | 1 | 1 | — | | | |
| Elongation (%) | 40 | 40 | ASTM D882A | | | |
| Tensile Strength (psi) | 7000 | 7000 | ASTM D882A | | | |
| Continuous Use Temp (°F / °C) | -40 to 257 | -40 to 125 | — | | | |
| Phase Change Softening Temp (°F / °C) | 126 | 52 | 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) | 1.4 | 1.4 | ASTM D5470 | | | |
| THERMAL PERFORMANCE vs PRESSURE | | | | | | |
| | Pressure (psi) | 10 | 25 | 50 | 100 | 200 |
| TO-220 Thermal Performance (°C/W) 0.0010" | | 1.22 | 1.17 | 1.13 | 1.10 | 1.08 |
| TO-220 Thermal Performance (°C/W) 0.0015" | | 1.44 | 1.40 | 1.38 | 1.35 | 1.33 |
| TO-220 Thermal Performance (°C/W) 0.0020" | | 1.67 | 1.63 | 1.60 | 1.58 | 1.54 |
| Thermal Impedance (°C-in²/W)(2) 0.0010" | | 0.19 | 0.18 | 0.17 | 0.16 | 0.15 |
| Thermal Impedance (°C-in²/W)(2) 0.0015" | | 0.21 | 0.21 | 0.21 | 0.19 | 0.18 |
| Thermal Impedance (°C-in²/W)(2) 0.0020" | | 0.26 | 0.26 | 0.24 | 0.23 | 0.22 |

1) This is the measured thermal conductivity of the Hi-Flow wax 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.

Building a Part Number



Standard Options

◀ example
 NA = Selected standard option. If not selecting a standard option, insert company name, drawing number, and revision level.
 ___ = Standard configuration dash number, 1112 = 11" x 12" sheets, 11/250 = 11" x 250' rolls, or 00 = custom configuration
 01 = Natural Tack
 Standard Polyimide Thickness Available = 0.001", 0.0015", 0.002"
 HF330P = Hi-Flow 330P Phase Change Material

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

Hi-Flow®: U.S. Patent 6,197,859 and others



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