

# PTM6000HV

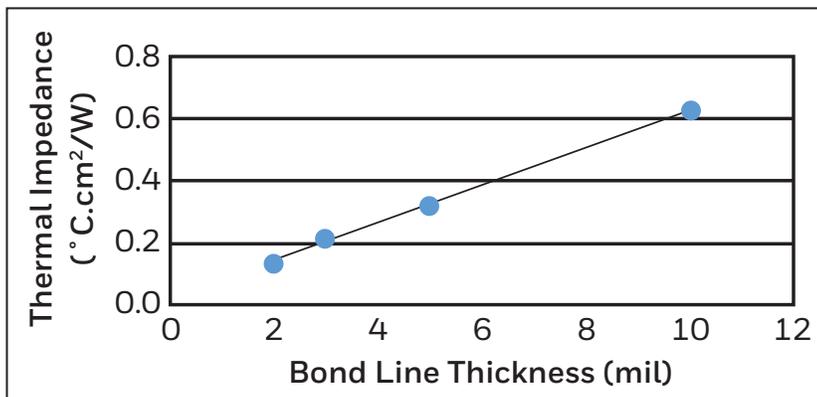
## High Thermal Conductivity, High Viscosity Phase Change Material

Honeywell's PTM6000HV, a highly thermally conductive Phase Change Material (PCM) in both pad and paste formats, is designed to minimize thermal resistance at interfaces and maintain extremely stable performance through reliability testing required for long product life applications.

Based on a robust polymer PCM structure, this material exhibits excellent wetting properties during typical operating temperature ranges, resulting in very low surface contact resistance.

The proprietary material provides superior reliability (pass 150°C baking 2000 hours, temperature cycling 2000 cycles, and HAST 288 hours) and maintains low thermal impedance (<0.12°Ccm<sup>2</sup>/W no shim), making PTM6000HV desirable for high-performance integrated circuit devices.

### PTM6000HV Thermal Impedance vs Bond Line Thickness



## FEATURES & BENEFITS

- High performance filler and polymer technology
- Phase change at 45°C
- Highly conductive filler loading to optimize performance
- Superior handling and reworkability
- Superior reliable thermal performance
- Available in both pad and paste formats

### Honeywell TIMs Serve Multiple Applications



Automotive & Power



IT/Enterprise



Telecomm



Consumer Electronics



High-Brightness LED

# PTM6000HV Technical Information

| Physical Properties         | Unit                 | Test Method         | PTM6000HV            |
|-----------------------------|----------------------|---------------------|----------------------|
| Thermal Conductivity        | W/m-K                | ASTM D5470          | 5.2                  |
| Thermal Impedance @ no shim | °Ccm <sup>2</sup> /W | ASTM D5470 Modified | 0.09                 |
| Thermal Impedance @ 50µm    | °Ccm <sup>2</sup> /W | ASTM D5470 Modified | 0.14                 |
| Specific Gravity            | g/cm <sup>3</sup>    | ASTM D374           | 2.6                  |
| Viscosity                   | Pa·s @2 l/s, 25 °C   | RehometerHON        | >1500                |
| Volume Resistivity          | Ω·cm                 | ASTM D257-700       | 2.1x10 <sup>14</sup> |

## STORAGE CONDITION

Refer to product label.

## THERMAL IMPEDANCE POST RELIABILITY (ASTM E1461)

|  |                            |
|--|----------------------------|
| End of Line  | 0.10 °C-cm <sup>2</sup> /W |
| Temperature Cycling "B"<br>(-55 °C to 125 °C, 2000 cycles) | 0.07 °C-cm <sup>2</sup> /W |
| Bake 125 °C, 2000 h  | 0.09 °C-cm <sup>2</sup> /W |
| Bake 150 °C, 2000 h  | 0.09 °C-cm <sup>2</sup> /W |
| HAST, 288h   | 0.09 °C-cm <sup>2</sup> /W |



*PTM6000HV is available in both pad and paste/printable formats*



## Product Use

Clamping pressure and temperature are suggested to achieve a minimum bond line thickness of the thermal interface material, typically less than 1.5 mil (0.038mm) for best performance. The material must go through the phase change temperature to exhibit entitlement performance.



*PTM6000HV applied to IGBT module*

## More Honeywell TIMs

PTM6000HV is part of Honeywell's TIM Solutions family of phase change materials. Whatever the thermal challenge, we offer a TIM product that provides just the right characteristics for your application. Find out more about:

- PTM7000 Series
- PTM6000 Series
- PTM5000 Series
- PCM45F Series
- HT Series
- LTM Series

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DS.0318Rev2  
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