

PTM6000HV-SP

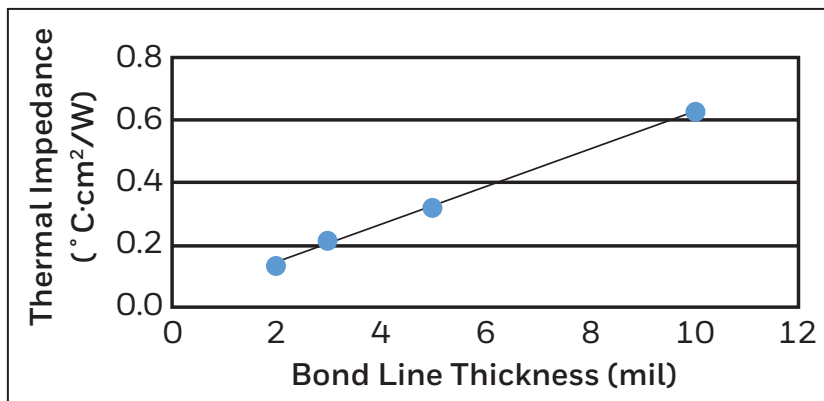
High Thermal Conductivity, High Viscosity Phase Change Material

Honeywell's PTM6000HV-SP, a highly thermally conductive Phase Change Material (PCM) in paste format 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 96 hours) and maintains low thermal impedance (<0.12°C cm²/W no shim), making PTM6000HV-SP desirable for high-performance integrated circuit devices.

PTM6000HV-SP Thermal Impedance vs Bond Line Thickness



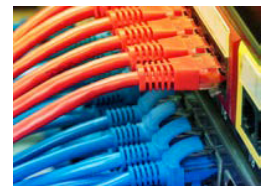
Honeywell TIMs Serve Multiple Applications



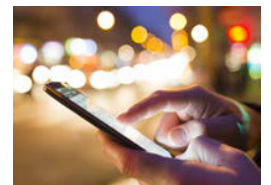
Automotive & Power



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Telecomm



Consumer Electronics



High-Brightness LED

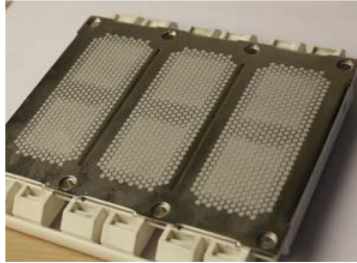
FEATURES & BENEFITS

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

PTM6000HV-SP Technical Information

Physical Properties	Unit	Test Method	PTM6000HV-SP
Thermal Conductivity	W/m-K	ASTM D5470	5.2
Thermal Impedance @ no shim	$^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$	ASTM D5470 Modified	0.09
Thermal Impedance @ 50 μm	$^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$	ASTM D5470 Modified	0.14
Specific Gravity	g/cm^3	ASTM D792	2.6
Viscosity	$\text{Pa}\cdot\text{s}$ @ $2\text{s}^{-1}, 25^{\circ}\text{C}$	RehometerH0N	>1500
Volume Resistivity	$\Omega\cdot\text{cm}$	ASTM D257-700	2.1×10^{14}

*Typical property data values should not be used as specifications



PTM6000HV-SP applied to IGBT module



STORAGE CONDITION 19-24 $^{\circ}\text{C}$, <65%RH
SHELF LIFE 12 Months

THERMAL IMPEDANCE POST RELIABILITY (ASTM E1461)

End of Line	0.10 $^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$
Temperature Cycling "B" (-55 $^{\circ}\text{C}$ to 125 $^{\circ}\text{C}$, 2000 cycles)	0.07 $^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$
Bake 125 $^{\circ}\text{C}$, 2000 h	0.09 $^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$
Bake 150 $^{\circ}\text{C}$, 2000 h	0.09 $^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$
HAST, 96h	0.09 $^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$

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.

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



Honeywell Electronic Materials

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