

### PTM6000

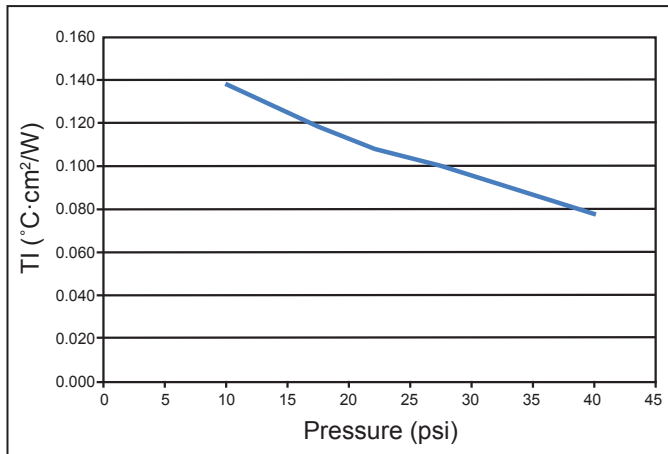
#### High Thermal Conductivity Phase Change Material

Honeywell’s PTM6000, 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 3000 hours, temperature cycling 4000 cycles, and HAST 192 hours) and maintains low thermal impedance (<0.16°Ccm<sup>2</sup>/W @ 2mil), making the PTM6000 Series desirable for high-performance integrated circuit devices.

#### PTM6000 Thermal Impedance (TI) vs. Pressure



*PTM6000 is suggested for products with long life cycles.*

#### Honeywell TIMs Serve Multiple Applications



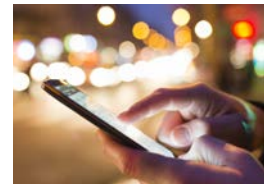
Automotive & Power



IT/Enterprise



Telecomm



Consumer Electronics



High-Brightness LED

### 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

# PTM6000 Technical Information

Physical Properties	Unit	Test Method	PTM6000	PTM6000-SP
Thermal Conductivity	W/m·K	ASTM D5470	4.4	4.4
Thermal Impedance @ no shim	$^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$	ASTM D5470 Modified	0.07	0.07
Specific Gravity	$\text{g}/\text{cm}^3$	ASTM D792	2.3	2.0
Viscosity	$\text{Pa}\cdot\text{s}$ @ $2\text{s}^{-1}$ , $25^{\circ}\text{C}$	RehometerHON	NA	222
Volume Resistivity	$\Omega\cdot\text{cm}$	ASTM D257-700	$2.1\times 10^{14}$	$2.1\times 10^{14}$
Thickness Range	mm		0.20-1.00	NA

\*Typical property data values should not be used as specifications



PTM6000 is available in both pad and paste/printable formats



## STORAGE CONDITION

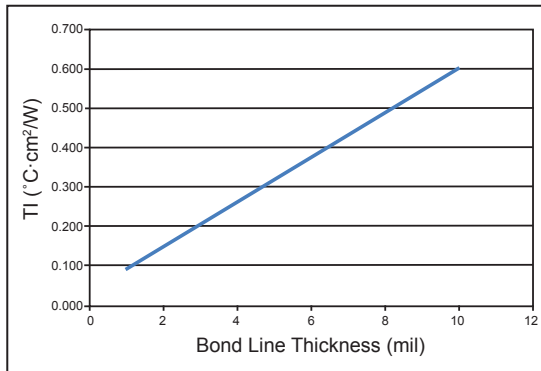
Refer to product label.

## THERMAL IMPEDANCE POST RELIABILITY (ASTM E1461)

End of Line	0.10 $^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$
Bake 150 $^{\circ}\text{C}$ , 3000 h	0.08 $^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$
HAST, 192h	0.07 $^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$
Temperature Cycling "B" (-55 $^{\circ}\text{C}$ to +125 $^{\circ}\text{C}$ , 4000 cycles)	0.07 $^{\circ}\text{C}\cdot\text{cm}^2/\text{W}$

## 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.



PTM6000 Thermal Impedance vs. Bond Line Thickness

## More Honeywell TIMs

PTM6000 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

USA: 1-509-252-2102  
 China: 86-21-28942481  
 Germany: 49-5137-999-9199  
 Japan: 81-3-6730-7092  
 Korea: 82-2-3483-5076  
 Singapore: 65-6580-3593

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DS.0318Rev2  
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