

**Honeywell PTM5000 Series  
Phase Change Thermal  
Interface Material**

# Honeywell PTM5000 Series Phase Change Thermal Interface Material

**HIGHLY THERMALLY CONDUCTIVE PHASE CHANGE MATERIAL IN PAD AND DISPENSE FORMATS**

## BENEFITS

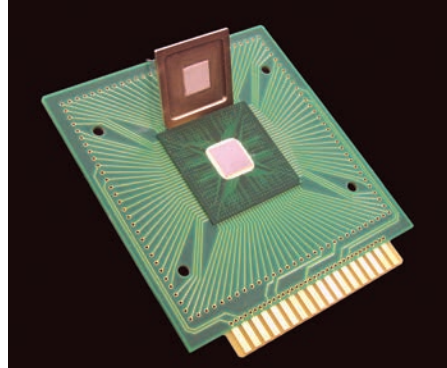
- High performance filler and polymer technology
- Phase change at 45°C
- Highly conductive filler with tailored loading to optimize performance
- Superior handling and reworkability
- Reliable thermal performance

## FEATURES

- Key outputs in thermal impedance for The PTM5000 Series have been measured to fit individual needs.

## OVERVIEW

Honeywell's PTM5000 Series, a highly thermally conductive Phase Change Material (PCM) in both pad and dispense formats, is designed to minimize thermal resistance at interfaces, maintain excellent performance through reliability testing, and provide scalable application at a competitive cost.



Based on a novel polymer PCM system, this material exhibits excellent wetting at interfaces during typical operating temperature ranges, resulting in very low surface contact resistance.

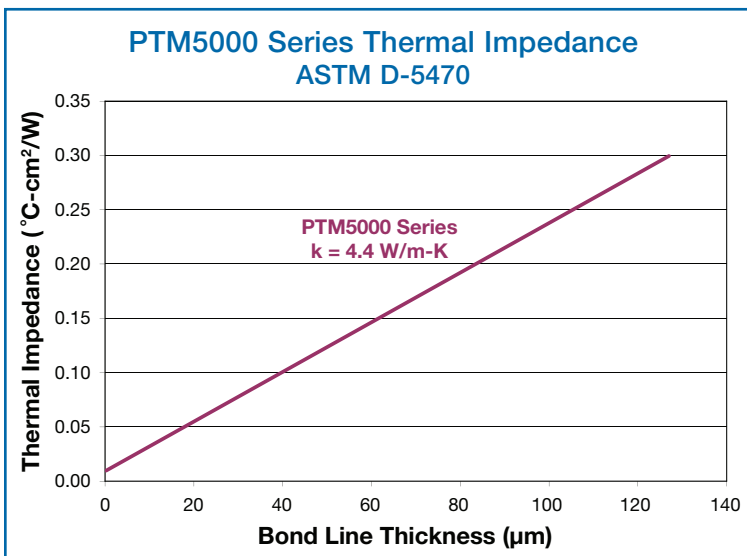
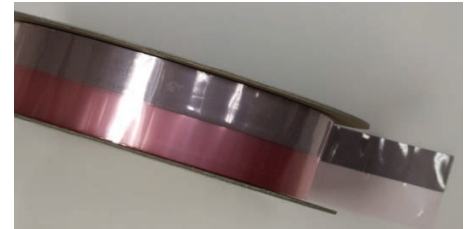
A proprietary filler material provides high thermal conductivity (4.4 W/m-K) and low thermal impedance (<math> <0.16^{\circ}\text{Ccm}^2/\text{W}</math> @ 2 mil), making the PTM5000 Series desirable for high performance integrated circuit devices.

## APPLICATIONS

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 in order to exhibit entitlement performance.

### Roll Format Tape:

- Plastic liner
- 10 mil (0.25mm) thickness supplied



## Physical Properties

Thermal Conductivity	4.4 W/m-K
Thermal Impedance @ 50µm	0.14°C-cm <sup>2</sup> /W
@ ~20µm	0.06°C-cm <sup>2</sup> /W
Volume Resistivity	3.0 X 10 <sup>15</sup> Ω-cm
Specific Gravity	2.3 g/cm <sup>3</sup>
Typical Bond Line Thickness (No Shim @ 40 PSI)	0.6 mil

## Storage & Use

Shelf Life	1 Year at 25°C
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## Thermal Impedance Post Reliability

End of Line	0.10°C-cm <sup>2</sup> /W
Temperature Cycling "B" (-55°C to 125°C, 1000 cycles)	0.07°C-cm <sup>2</sup> /W
Bake 125°C, 1000 h	0.08°C-cm <sup>2</sup> /W
Bake 150°C, 1000 h	0.07°C-cm <sup>2</sup> /W
HAST, 96 h	0.09°C-cm <sup>2</sup> /W
85°C, 85% RH, 1000 h	0.11°C-cm <sup>2</sup> /W



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