

## Thermal Interface Materials

### PTM-SMK

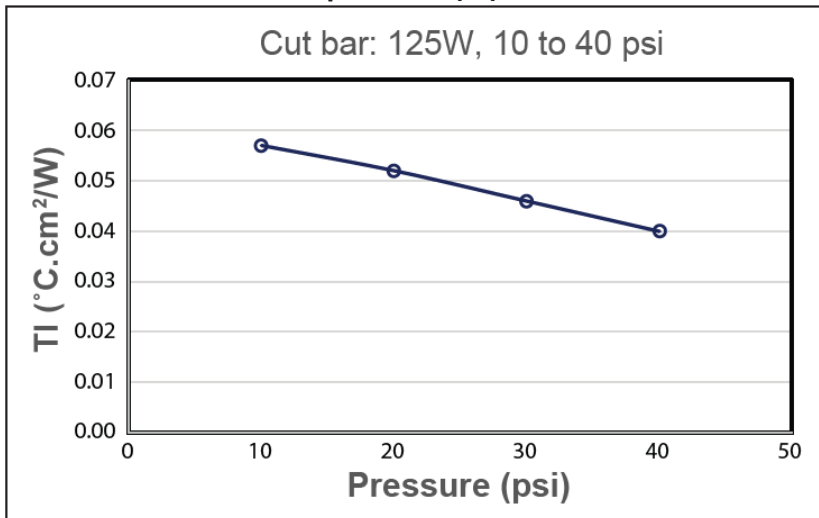
#### High Thermal Conductivity Phase Change Material

Honeywell's PTM-SMK, a super highly thermally conductive Phase Change Material (PCM) in paste format, 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 interface wettability during typical operating temperature ranges, resulting in extremely low surface contact resistance.

A proprietary material provides superior reliability (pass 150°C baking 1000 hours, T/C-B 1000 cycles) and maintains low thermal impedance (<0.04°C.cm<sup>2</sup>/W @ no shim), making the PTM-SMK desirable for high performance integrated circuit devices.

#### PTM-SMK Thermal Impedance (TI) vs. Pressure



*PTM-SMK is ideal for high performance IT/Enterprise computing applications.*

#### Honeywell TIMs Serve Multiple Applications



**Automotive & Power**



**IT/Enterprise**



**Telecomm**



**Consumer Electronics**



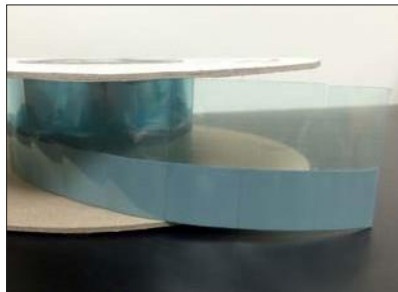
**High-Brightness LED**

### FE AT URES & 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

# PTM-SMK Technical Information

Physical Properties	Unit	Test Method	PTM-SMK
Thermal Conductivity	W/m·K	ASTM D5470	8.5
Thermal Impedance @ no shim	°C·cm <sup>2</sup> /W	ASTM D5470 Modified	0.04
Specific Gravity	g/cm <sup>3</sup>	ASTM D374	2.5
Viscosity	Pa·s @ 210 <sub>1</sub> /s, 25°C	Rheometer HON	100
Volume Resistivity	∧·cm	ASTM D257-700	2.1x10 <sup>14</sup>



*PTM-SMK pad format. It is also available in paste/printable format.*

## STORAGE CONDITION

Refer to product label.

## THERMAL IMPEDANCE POST RELIABILITY (ASTM E1461)

End of Line	0.04°C-cm <sup>2</sup> /W
Bake 150°C, 1000 h	0.04°C-cm <sup>2</sup> /W
Double 85, 1000h	0.04°C-cm <sup>2</sup> /W
Temperature Cycling "B" (-55°C to +125°C, 1000 cycles)	0.045°C-cm <sup>2</sup> /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

PTM-SMK 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

By visiting: [electronicmaterials.com](http://electronicmaterials.com)



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DS.0318Rev1  
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