

Honeywell PTM5000/PTM5000-SP Phase Change Thermal Interface Materials

Honeywell PTM5000/ PTM5000-SP Phase Change Thermal Interface Materials

HIGH THERMAL CONDUCTIVITY PHASE CHANGE MATERIAL IN PAD AND PASTE FORMATS

BENEFITS

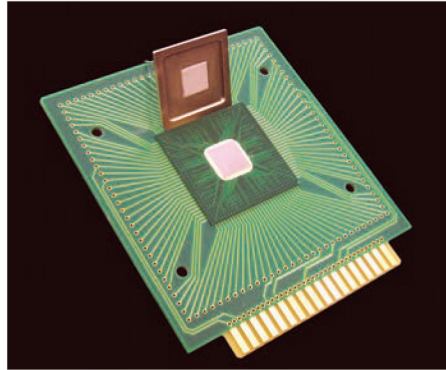
- High performance filler and polymer technology
- Phase change at 45°C
- Highly conductive filler with tailored loading to optimize performance
- Superior handling and reworkability
- Reliable thermal performance

FEATURES

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

OVERVIEW

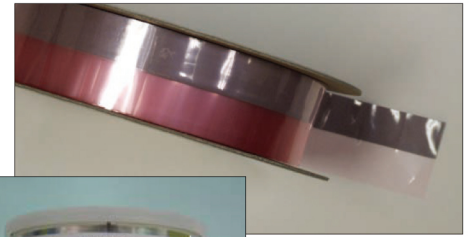
Honeywell's PTM5000 Series, a highly thermally conductive Phase Change Material (PCM) in both pad and dispense formats, is designed to minimize thermal resistance at interfaces, maintain excellent performance through reliability testing, and provide scalable application at a competitive cost. Based on a novel polymer PCM system, this material exhibits excellent wetting at interfaces during typical operating temperature ranges, resulting in very low surface contact resistance.



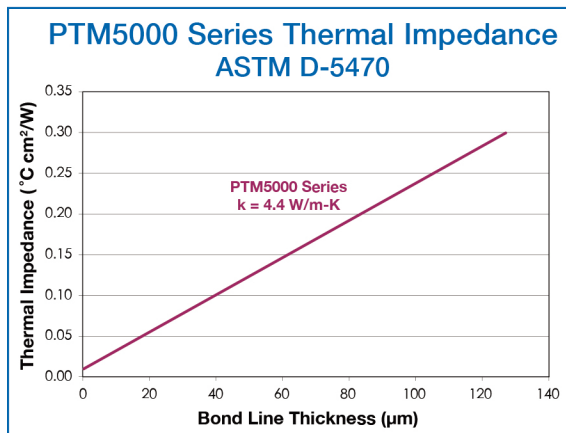
A proprietary filler material provides high thermal conductivity (4.4 W/m·K) and low thermal impedance (<0.16°Ccm²/W @ 2 mil), making the PTM5000 Series desirable for high performance integrated circuit devices.

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.



PTM5000 comes in both pad and paste formats.



Physical Properties	Unit	Test Method	PTM5000	PTM5000-SP
Thermal Conductivity	W/m·K	ASTM D5470	4.4	4.4
Thermal Impedance @ no shim	°C·cm²/W	ASTM D5470 Modified	0.07	0.07
Thermal Impedance @ 50μm	°C·cm²/W	ASTM D5470 Modified	0.14	0.14
Specific Gravity	g/cm³	ASTM D374	2.3	2.0
Viscosity	Pa·s @ 2s⁻¹, 25°C	Rehometer HON	NA	82
Volume Resistivity	Ω·cm	ASTM D257-700	2.1x10¹⁴	2.1x10¹⁴
Thickness Range	mm		0.20-1.00	NA

*Typical property data values should not be used as specifications

Storage Condition	19-24°C, <65%RH
Shelf Life	12 Months
Thermal Impedance Post Reliability (ASTM E1461)	
End of Line	0.10°C·cm²/W
Temperature Cycling "B" (-55°C to 125°C, 1000 cycles)	0.07°C·cm²/W
Bake 125°C, 1000 h	0.08°C·cm²/W
Bake 150°C, 1000 h	0.07°C·cm²/W
HAST, 96 h	0.09°C·cm²/W
85°C, 85% RH, 1000 h	0.11°C·cm²/W



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

Although all statements and information contained herein are believed to be accurate and reliable, they are presented without guarantee or warranty of any kind, express or implied. Information provided herein does not relieve the user from the responsibility of carrying out its own tests and experiments, and the user assumes all risks and liability for use of the information and results obtained. Statements or suggestions concerning the use of materials and processes are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that all toxicity data and safety measures are indicated herein or that other measures may not be required.

PB1450915Rev9
©2022 Honeywell International Inc.

Honeywell