Packaging Materials

Honeywell

HIGH THERMAL CONDUCTIVE PHASE
CHANGE MATERIAL IN PAD FORMAT

Honeywell PCM45F Phase Change Thermal Interface Material

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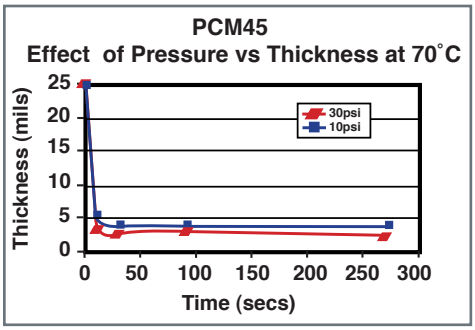
BENEFITS

- High performance filler and resin technology
- Phase change at 45˚C
- High conductive filler loading to maximize loading density
- Superior handling and reworkability
- Excellent thermal reliability after thermal cycling and HAST

Handling Benchmark (Typical Values)



OVERVIEW

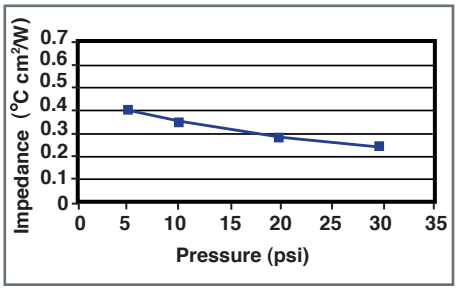
Honeywell PCM45F, a high thermal conductive Phase Change Material (PCM) in pad format, was designed to minimize thermal resistance at interfaces.

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

A proprietary filler material provides high thermal conductivity (2.0–5.0 W/m˚C) and a low thermal impedance (<0.20˚C cm²/W), suitable for high performance IC devices.

FEATURES

High Thermal Performance



Key outputs in thermal impedance for PCM45F have been measured to fit individual needs.

APPLICATIONS

Clamping pressure and temperature are suggested to achieve a minimum bond line thickness of the interface material, typically less than 1.5mil (0.038mm) for best thermal performance.

Tape Formats

- No Carrier
- Supplied Thickness: 10 mils

MATERIAL CHARACTERISTICS

Physical Properties

(2 mil shim 40 PSI)	PCM45F
Thermal Conductivity	2.35 W/m˚C
Thermal Impedance	0.20˚C cm²/W
Volume Resistivity	3x10+15 Ωcm
Specific Gravity	2.2gm/cm³
Typical Bond Line Thickness @ 30psi/60˚C	1.0 mil

Thermal Impedance Post Reliability

(2 mil shim 40 PSI)	PCM45F
End of Line	0.20˚C cm²/W
1000 hrs T/C “B	0.20˚C cm²/W
192 hrs 85C/85%RH	0.21˚C cm²/W
96 hrs HAST	0.25˚C cm²/W
500 hrs @ 150˚C	0.20˚C cm²/W

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