

PTM7950 Phase Change Material (PCM)

TECHNICAL DATA SHEET

Solstice PTM7950 series, a highly thermally conductive Phase Change Material (PCM) in both pad and paste formats, is designed to minimize thermal resistance at interfaces, maintain excellent performance through reliability testing, and provide scalable application at a competitive cost.

Solstice PTM7950 Phase Change Material (PCM) is built for sustained performance, delivering:

- Ultra-low thermal resistance at the interface
- Superior wetting at operating temperature
- Reliable heat transfer from chip to sink
- Long service life under thermal cycling

Based on a novel polymer PCM system, this proprietary material provides superior reliability (pass 150°C baking 1000 hours, T/C-B 1000 cycles) and maintains low thermal impedance ($<0.04^{\circ}\text{C cm}^2/\text{W}$ @ no shim), making the PTM7950 series desirable for high performance integrated circuit devices.

Key Features

- High performance filler and polymer technology
- Silicone-free, no pump out, bleed out, dry out issues
- Highly conductive filler loading to optimize performance
- Industry-proven superior long-term reliability
- Min BLT~20um, typical BLT is below 50um
- 30~40 psi pressure is needed for usage

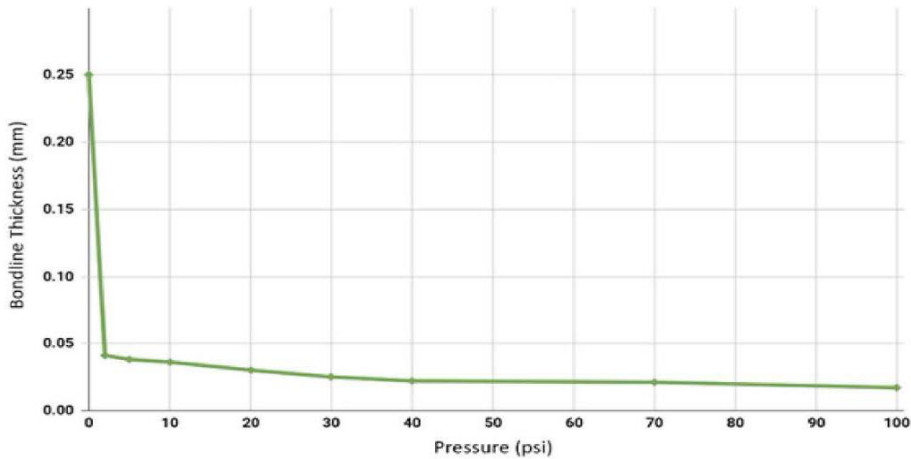
ACHIEVING THIN BONDLINE AND GREAT THERMAL PERFORMANCE BY MINIMUM PRESSURE APPLICATION

One of the key characteristics of PTM7950 is its bondline thickness, which refers to the thickness of the layer of adhesive between two surfaces being bonded.

Available formats:

- PTM7950 Pad | Easy application and no drying steps
- PTM7950-SPS | Paste version with slow-drying solvent
- PTM7950-SP | Paste version for automatic stencil printing

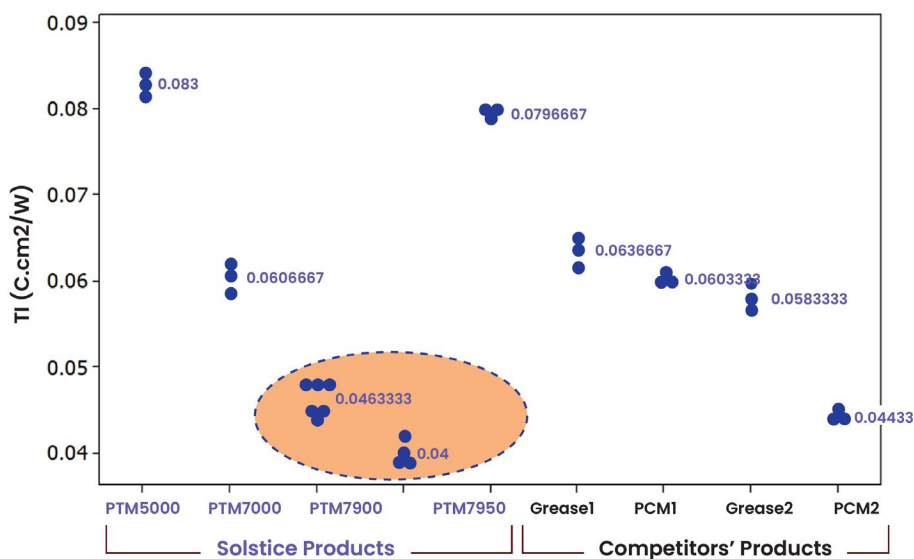
PTM7950 Bondline Thickness Vs. Pressure



As the pressure applied to PTM7950 increases, the bondline thickness decreases. Specifically, a minimum pressure of 10 psi is needed to observe a significant reduction in bondline thickness. This means that lower pressure is sufficient to achieve a thinner bondline, which can be advantageous in certain applications.

PTM7950 IS BEST-IN-CLASS AGAINST OTHER THERMAL MATERIALS

Refer to chart - Solstice PTM7950: Comparison of thermal performance (click on the thumbnails to enlarge), where thermal impedance values for various materials is shown, including that of PTM7950 and PTM7900. Both of these materials have the lowest thermal impedance values when compared to all other materials tested, including competitive thermal greases. Overall, the PTM7950 is the top performer among all materials tested for thermal impedance.



PRODUCT	THERMAL IMPEDANCE (°C·CM²/W)	THERMAL CONDUCTIVITY (W/M·K)
Test Method	ASTM D5470	ASTM D5470
PTM5000	0.086	4.4
PTM7000	0.058	6.5
PTM7900	0.046	8.0
PTM7950	0.040	8.5

• ASTMD5470, 125W, 40psi, no shim

PTM7950 TECHNICAL INFORMATION

PHYSICAL PROPERTIES	UNIT	TEST METHOD	PTM7950	PTM7950-SP
Thermal Conductivity	W/m•K	ASTM D5470	8.5	8.5
Thermal Impedance @no shim	°C•cm/W	ASTM D5470 Modified	0.04	0.04
Specific Gravity	g/cm³	ASTM D792	2.8	2.5
Viscosity	Pa•s @2s ⁻¹ , 25°G	Rheometer HON	NA	21
Volume Resistivity	Ω•cm	ASTM D257 – 700	2.1x10 ¹⁴	2.1x10 ¹⁴
Thickness Range	mm		0.2-.04	NA

STORAGE CONDITION
SHELF LIFE

19-24°C, <650/oRH
12 Months

THERMAL IMPEDANCE POST RELIABILITY (ASTM E1461)

End of Line	0.04 ° C-cm2/W
Bake 150 ° C, 1000h	0.04 ° C-cm2/W
Double 85, 1000h	0.04 ° C-cm2/W
Temperature Cycling “B” (-55 ° C to+ 125 ° C, 1000 cycles)	0.045 ° C-cm2/W

The PTM7950 is clearly the best choice for thermal impedance, with the lowest value among all materials tested. This makes it an excellent option for electronic devices that require exceptional thermal management.

PRODUCT USE

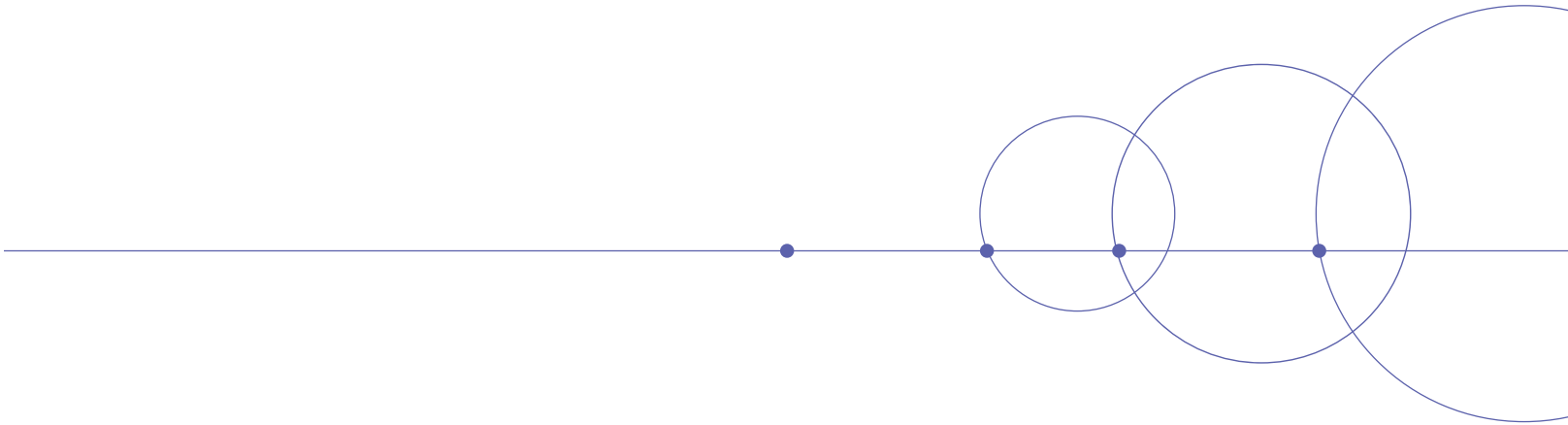
Clamping pressure and temperature are suggested to achieve a minimum bond line thickness of the thermal interface material, typically less than 1.5 mil (0.038mm) for best performance. The material must go through the phase change temperature to exhibit entitlement performance.

MORE SOLSTICE TIMS

PTM7950 is part of Solstice’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



For More Information Visit

solstice.com

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