

## TPM350

### Thermally Conductive Phase Change Material

TPM350 is a high performance, screen printable, thermally conductive phase change material. TPM350 contains a solvent to ensure complete wetting of the surface and to assist in processing, the material will dry once the solvent has evaporated. A phase change will occur when TPM350 is exposed to temperatures above 50°C to ensure the material conforms to the contours of a surface to ensure maximum heat dissipation away from hot spots.

- Suitable for screen printing applications; excellent wettability
- Conforms well to complex geometries
- High thermal conductivity; 3.5 W/m.K to minimise contact thermal resistance
- Low phase change temperature; 50°C

<b>Approvals</b>	<b>RoHS-2 Compliant (2015/863/EU):</b>	<b>Yes</b>
<b>Typical Properties</b>	Colour:	Grey
	Density @ 20°C (g/ml):	2.2
	Dry Time @ 20°C	10 hours
	Dry Time @ 60°C	2 hours
	Phase Change Temperature:	50°
	Thermal Conductivity:	3.5 W/m.K
	Temperature Range:	-40°C to +125°C
	Thermal Resistance @ 70°C, 50psi:	0.026 °C.in <sup>2</sup> /W
	Minimum Bond Line Thickness:	25µm

### Directions for Use

Ensure surfaces are clean, free from dust, grease and other contaminants before use. Mix well by hand or jar roller before using.

A uniform coating of 0.05 mm to 0.255 mm thickness should be applied. For high volume applications stencilling or screening is recommended, for the best results use a 61 (or less) threads per inch screen. Ensure that the entire interface is covered to avoid hot-spots from forming. Any excess paste squeezed out during the mounting process should be removed. In most cases allow for up to a 20% reduction in thickness due to material retention on a screen printer and another 20% reduction for solvent evaporation. For example: Initial thickness on a screen = 0.2mm, 20% retain on screen = 0.16mm, 20% reduction from solvent evaporation = 0.13mm.

Place a dust cover over the surface during the drying stage to avoid contamination to the surface. TPM350 is touch dry within 2 hours (60°C), or 10 hours (20°C), a thickness of greater than 0.1mm it is suggested to heat to 60°C to ensure complete solvent evaporation. TPM350 can be reworked with an appropriate cleaning solvent like IPA.

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Optimal thermal performance is achieved when used in constant pressure applications, with a pressure of 20psi or greater and an operating temperature above 60°C.

Store between 5°C to 35°C and below 50% relative humidity. Store upright, away from corrosive materials. Ensure the lid is clean and closed tightly to ensure a tight seal.

### **Typical Applications**

TPM350 is recommended for constant pressure applications such as springs. A minimum pressure of 5psi is recommended. Optimal thermal performance is reached at a pressure of 20psi and a temperature of above 60°C. Such applications can include, high frequency microprocessors, notebook and desktop PCs, computer servers, DC/DC converters, memory modules, cache chips, IGBTs, automotive.

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