BERGQUIST

Technical Data Sheet

TIC 4000

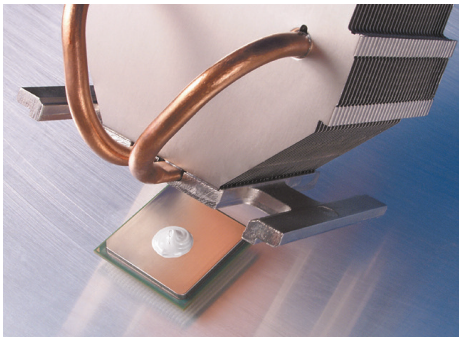
July 2011

PRODUCT DESCRIPTION

High Performance Thermal Interface Compound for Copper-Based Heat Sinks

FEATURES AND BENEFITS

- Thermal conductivity: 4.0 W/m-K
- Exceptional thermal performance: 0.19°C/W @ 50 psi



TIC™ 4000 is a thermally conductive grease compound designed for use as a thermal interface material between a computer processor and a copper-based heat sink. Other high watt density applications will benefit from the extremely low thermal impedance of TIC™ 4000.

The TIC™ 4000 compound wets-out the thermal interface surfaces and flows to produce low thermal impedance. The compound requires pressure of the assembly to cause flow. TIC™ 4000 compound will not drip.

For a typical 0.5" x 0.5" application at 0.005" thick, Bergquist estimates approximately 0.02 ml (cc) of TIC™ 4000.

Although Bergquist estimates a 0.02 ml (cc) volumetric requirement for a 0.5" x 0.5" component interface, dispensed at a thickness of 0.005", Bergquist also recognizes that an optimized application would utilize the minimum volume of TIC™ 4000 material necessary to ensure complete wet-out of both mechanical interfaces.

Note: To build a part number, visit our website at www.bergquistcompany.com.

TYPICAL PROPERTIES OF TIC 4000

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	Gray	Gray	Visual
Density (g/cc)	4.0	4.0	ASTM D792
Continuous Use Temp (°F) / (°C)	302	150	—
ELECTRICAL			
Electrical Resistivity (Ohm-meter) (1)	N/A	N/A	ASTM D257
THERMAL			
Thermal Conductivity (W/m-K)	4.0	4.0	ASTM D5470

THERMAL PERFORMANCE vs PRESSURE					
Pressure (psi)	10	25	50	100	200
TO-220 Thermal Performance (°C/W) (2)	0.21	0.20	0.19	0.19	0.18

1) The compound contains an electrically conductive filler surrounded by electrically non-conductive resin.
2) TO-220 performance data is provided as a reference to compare material thermal performance.

Application Methods

1. Pre-clean heat sink and component interface with isopropyl alcohol prior to assembly or repair. Ensure heat sink is dry before applying TIC™ 4000.
2. Dispense TIC™ 4000 compound onto the processor or heat sink surface like thermal grease.
3. Assemble the processor and heat sink with clip or constant-pressure fasteners.

TYPICAL APPLICATIONS INCLUDE

- High performance computer processors (traditional screw fastening or clamping methods will provide adequate force to optimize the thermal performance of TIC™ 4000)
- High watt density applications where the lowest thermal resistance interface is required

Henkel

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