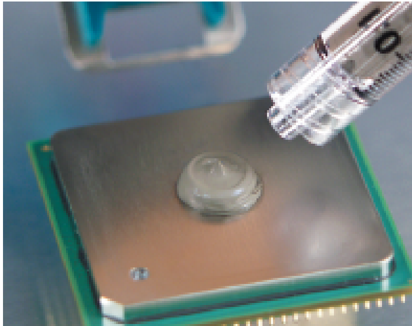
THE BERGQUIST COMPANY

TIC™ 4000

High Performance Thermal Interface Compound for Copper-Based Heat Sinks

Features and Benefits

- Thermal conductivity: 4.0 W/m-K
- Extremely low thermal impedance
- 0.19C/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.

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.

TYPICAL PROPERTIES OF TIC 4000

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	Gray	Gray	Visual
Density (g/cc)	4.0	4.0	ASTM D374
Continuous Use Temp (°F) / (°C)	302	150	TGA Kinetics
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 a reference tool to compare Sil-Pad and Gap Pad materials.

Application Methods

1. Pre-clean heat sink and component interface with isopropyl alcohol prior to assembly or repair.
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.

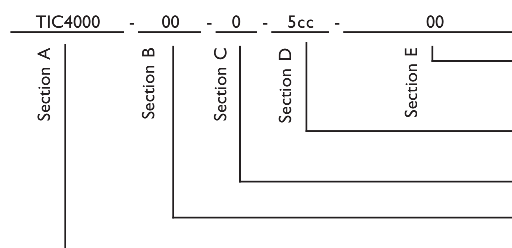
Typical Applications Include:

- 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

Configurations Available:

- Gel form

Building a Part Number



Standard Options

example

00 = Selected standard option. If not selecting a standard option, insert company name, drawing number, and revision level.

5 = 5.0cc, 25 = 25.0cc, 200 = 200.0 cc, 800 = 800.0cc, 1600 = 1600.0cc (ml) cartridges

00 = No options

00 = No options

TIC4000 = Thermal Interface Compound 4000

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

TIC™: U.S. Patent 6,339,129,662,4224.

TIC

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