



Thermally Conductive Grease

TCG-2039

Technical Data Sheet

Feb., 2013

Product Description

3M™ Thermally Conductive Grease TCG-2039 is a premium thermal interface material for transferring thermal energy from a heat source(e.g.: processor chip, graphic chip. etc.) to a heat sinking or heat spreading surface . The 3M Grease TCG-2039's blend of conductive fillers in a non-silicone resin system which provides for excellent bulk thermal conductivity along with very low thermal resistance.

3M™ Thermally Conductive Grease TCG-2039 behaves a little bit higher viscosity with special designing to be applied by tooling or syringe dispensing. It can be also applied by screen printing with compatible mesh(e.g.: #60 mesh, or #80 mesh, etc.). The 3M Grease TCG-2039 performs good wetting property and forms thinner BLT(Bond Line Thickness) for easy apply onto the surface of heat source.

Key Features

- Excellent bulk conductivity
- Superior thermal impedance
- Non-silicone based formulation

Typical Physical Properties

Note: The following technical information and data is based upon limited 3M testing conditions and should not be used for specification purposes.

Viscosity @ 25°C = 5.0×10^5 cps (Brookfield Viscometer Model DV-E, Spindle: #06, Shear Rate: 0.6 rpm)	Density δ = 2.2 g/cc @ 25°C
< 0.2 % wt. loss in @ 85 °C x 7 Days	Dielectric Breakdown Strength = 3700 Volts/mm
Dielectric Constant = 67 @ 1kHz	Vol. Resistivity = 3.7×10^8 Ω -cm @ 1 kHz

Typical Performance Characteristics

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$k = 2.0 \text{ W/m-K}$	$\theta = 0.139 \text{ }^{\circ}\text{C-cm}^2/\text{W}, 2 \text{ psi @ } 26 \text{ } \mu \text{ BLT}$
Thermal Impedance by ASTM D-5470, $^{\circ}\text{C-cm}^2/\text{W}$	
Pressure (psi)	TCG-2039
10	0.093
20	0.090
40	0.085
60	0.080
80	0.077

Storage and Shelf Life

Product Shelf life is 12 months from date of manufacture when stored in the original product container and packaging materials and stored at room temperature (16-27°C) and 40-60% RH. To ensure best uniformity of conductive fillers, the product should be mixed prior to use to ensure uniform distribution of fillers.

Directions for Use

Apply the product with well pre-stirred before use and then onto the desired interface by optimum pressure (from approximately 1-25 psi applied at a variable or constant force as determined by end user) when bringing the substrate interfaces together. Pressure is applied until the desired gap thickness is achieved. Apply sufficient product to ensure good gap filling at the desired final nominal gap thickness (Sufficient product volume use can be demonstrated by having a small amount of squeeze-out at the edges of the interface).

Precautionary Information

Refer to product label and Material Safety Data Sheet for health and safety information before using the product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.

For Additional Information

To request additional product information or to arrange for sales assistance, contact your local 3M Technical Service. Address correspondence to: 3M Electronics Markets Materials Division, 3M Center, Building 209-01-C-30, St. Paul, MN 55144-1000. Our fax number is 1-651/733-3304.

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