

3M™ Thermally Conductive Grease TCG-2035 / TCG-2031

Product Description

3M™ Thermally Conductive Grease TCG-2035 is an ultra-high performance thermal interface material for transferring thermal energy from a heat source (e.g.: processor chip, graphics chip, etc.) to a heat sinking or heat spreading surface. The 3M Grease TCG-2035's blend of inorganic fillers in a non-silicone resin system provides for excellent bulk thermal conductivity along with very low thermal resistance.

3M™ Thermally Conductive Grease TCG-2031 has a lower viscosity versus the 3M™ Thermally Conductive Grease TCG-2035 as a small amount of solvent has been blended into the product. The lower viscosity of the 3M Grease TCG-2031 can allow for a thinner bond line leading to improved thermal resistance and is also designed for use in screen printing applications.

Key Features

- High Performance thermal interface material.
- Superior bulk conductivity.
- Excellent thermal impedance.
- Non-silicone based formulation.
- < 40 μ max particle diameter.
- 3M Grease TCG-2031 is screen printable.

Typical Physical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

| | |
|---|--|
| $G^* = 5400 \text{ Pa @ } 25^\circ\text{C} (*1425 \text{ Pa})$ | $G' = 3150 \text{ Pa @ } 25^\circ\text{C} (*800 \text{ Pa})$ |
| $\eta^* = 74 \text{ Pa-sec @ } 25^\circ\text{C} (*20 \text{ Pa-sec})$ | $\delta = 2.92 \text{ g/cm}^3 (*2.81)$ |
| Dielectric Constant = 5.4 @ 1kHz | Vol Resistivity = $1.36 \times 10^9 \Omega\text{-cm @ } 1 \text{ kHz}$ |
| Dielectric Breakdown Strength = 4700 Volts/mm | |

*Information relates to the 3M Grease TCG-2031.



3M™ Thermally Conductive Grease TCG-2035 / TCG-2031

Typical Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

$k = 4.1 \text{ W/m-K}$

Thermal Impedance: $0.012 \text{ C-in}^2/\text{W}$ ($0.081 \text{ C-cm}^2/\text{W}$) (Thermal Impedance measured with a modified 3M ASTM-D5470 Test Method)

Storage and Shelf Life

Product Shelf life is 9 months from date of manufacture when stored in the original product container and packaging materials and stored at room temperature (18-24°C) and 50% 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 at the desired interface and use 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). Heat can be applied (40-50°C) to lower the product viscosity to aid in product flow and for establishing a desired gap thickness.

The 3M™ Thermally Conductive Grease TCG-2031 product contains a small amount of solvent to lower viscosity and allow for screen printing. Screen print to a desired surface and allow product to rest open faced for 2-10 minutes at room temperature to allow solvent to evaporate prior to assembly. Review MSDS for detailed use information.

3M™ Thermally Conductive Grease TCG-2035 / TCG-2031

Precautionary Information

Refer to Product Label and Material Safety Data Sheet for Health and Safety Information before using this 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, call toll free 1-800-251-8634. Address correspondence to: 3M Electronics Markets Materials Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244 or 1-877-369-2923. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture at the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**

These products are not warranted or guaranteed to be silicone-free.



Electronics Markets Materials Division
3M Electronics
3M Center, Building 21-1W-10, 900 Bush Avenue
St. Paul, MN 55144-1000
1-800-251-8634 phone
651-778-4244 fax
www.3M.com/electronics

3M is a trademark of 3M Company.
Please recycle. Printed in U.S.A.
©3M 2008. All rights reserved.
60-5002-0367-8

