

3M™ Thermally Conductive Silicone Interface Pads 5516 and 5516S

Product Description

3M™ Thermally Conductive Silicone Interface Pads 5516 and 5516S are designed to provide a preferential heat transfer path between heat generating components and heat sinks, heat spreaders or other cooling devices. These products consist of a highly conformable slightly tacky silicone elastomer sheet filled with thermally conductive ceramic particles which provide special features listed as follows.

- Good thermal conductivity and good electrical insulation properties.
- Good softness and conformability even to non-flat surfaces.
- Softness results in low stress on board components.
- “S” version incorporates a thin polymeric film carrier for improved handling and a non-tacky surface for ease of rework.
- Slight tack allows pre-assembly. Good wettability for better thermal conductivity.

Construction

3M™ Thermally Conductive Silicone Interface Pad 5516



Removable Film liner

Thermally conductive silicone elastomer

Removable Film liner

Standard thickness (excludes liner): 0.5 mm, 1.0 mm, 1.5 mm, 2.0 mm

3M™ Thermally Conductive Silicone Interface Pad 5516S



Permanent polymeric film (0.006 mm) carrier

Thermally conductive silicone elastomer

Removable Film liner

Standard thickness (excludes liner): 0.5 mm, 1.0 mm, 1.5 mm, 2.0 mm

Note: Thicknesses greater than 2mm are available. Please consult your local 3M representative for additional details.

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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.

| 3M™ Thermally Conductive Silicone Interface Pads 5516 and 5516S | | |
|---|----------------------------|---|
| Property | Method | Value |
| Thermal Conductivity (W/mK) | ASTM D5470 | 3.1 |
| Flammability | UL 94 | V-0 (5516 0.5 mm~ & 5516S 1.01 mm~) V-1 (5516S 0.5-1.0 mm) |
| Density (g/cm ³ , @ 25°C) | – | 2.9 |
| Hardness | Shore 00 ^{Note 1} | 5516 @ 50 5516S @ 72 |
| Volume Resistivity (Ω-cm) | ASTM D257 | 6.9 x 10 ¹⁴ |
| Dielectric Strength (kV/mm) | ASTM D149 | 3.2 (5516S = 5.2 est.) |
| Dielectric Constant | ASTM D150 | 11.0 (1-100 kHz) |

Notes:

1) Shore 00 Test Method based on a 6mm thick sample. Results will vary for different thickness samples.

Compression vs. Stress



Note: Compression vs Stress test results can vary between test methods based on sample size, exact test set-up, equipment type, etc.

Environmental Aging Data

Heat resistance of 1.0 mm 3M™ Thermally Conductive Silicone Interface Pad 5516

| Duration (hrs) | Initial | 500 | 1000 | 3000 |
|-----------------------------|---------|-----------|-----------|-----------|
| Thermal Conductivity (W/mK) | 2.8 | 2.8 | 2.8 | 2.8 |
| Hardness (Shore 00) | 49 | 50 | 50 | 50 |
| Appearance | – | No effect | No effect | No effect |

Aged at 130°C in high temperature chamber.

Note: Thermal Conductivity for aging tested using the QTM-500 Hot Wire Test Method. Values can differ from an ASTM-D5470 TM due to TM differences.

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Shelf Life

Product shelf life is 24 months from date of manufacture when stored at room temperature conditions (23-25°C & 50% RH) and in the products original packaging.

Certification/Recognition

MSDS: 3M has not prepared a MSDS for these products which are subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, these products should not present a health and safety hazard. However, use or processing of these products in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.

TSCA: These products are defined as an article under the Toxic Substances Control Act and therefore, are exempt from inventory listing requirements.

RoHs Compliant/REACH Compliant: These products comply with the European Union's "Restriction of Hazardous Substances" (RoHs) initiative and with European REACH regulations 2002/95/EC and 2005/618/EC.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-866-599-4227. Address correspondence to: 3M, Electronics Markets Materials Division, 3M Center, Building 225-3S-06, 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

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Electronics Markets Materials Division

3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
1-866-599-4227 phone
651-778-4244 fax
www.3M.com/electronics

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