3M™ Thermally Conductive Silicone Interface Pads 5519 and 5519S

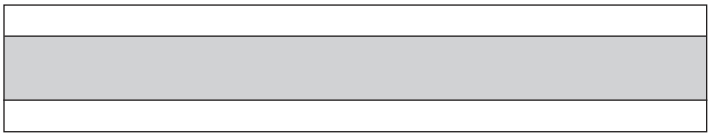
Product Description

3M™ Thermally Conductive Silicone Interface Pads 5519 and 5519S 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.

- Very high thermal conductivity and good electrical insulation properties.
- Good softness and conformability even to non-flat surfaces.
- "S" version incorporates a thin polymeric film carrier for improved handling.
- Slight tack allows pre-assembly. Good wettability for better thermal conductivity.

Construction[1]

3M™ Thermally Conductive Silicone Interface Pad 5519



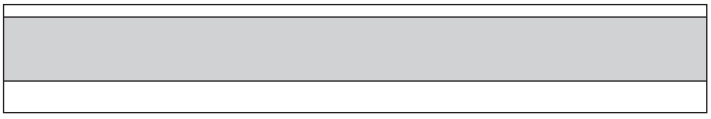
Removable film liner

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 5519S[2]



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

[1] Thicknesses greater than 2mm are available. Please consult your local 3M representative for additional details.

[2] The 5519S product is also available in a dual permanent polymeric film carrier design. Contact 3M for MOQ information and availability.

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.

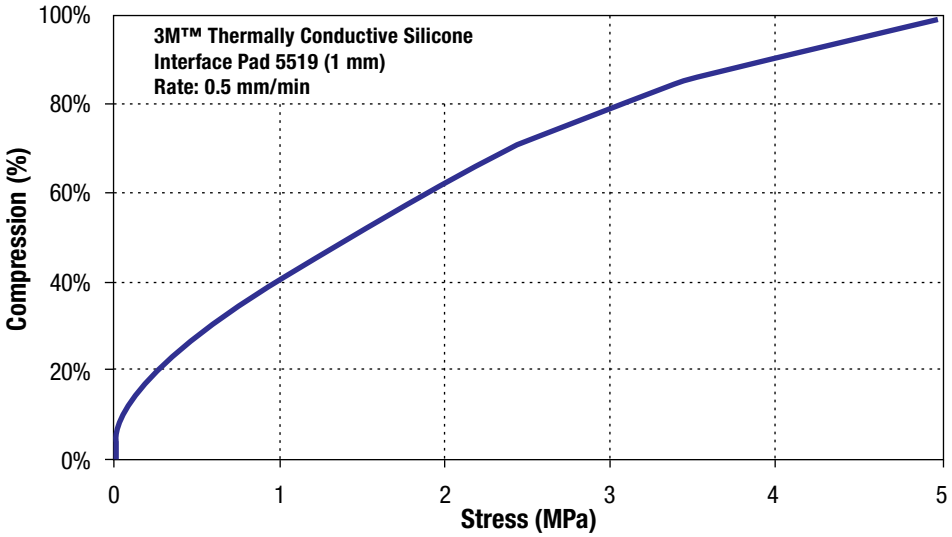
Property	3M™ Thermally Conductive Silicone Interface Pads 5519 and 5519S Method	 Value
Thermal Conductivity (W/mK)[Note 2]	ASTM D5470	4.9
Flammability	UL 94	V0
Density (g/cm^3, @ 25°C)	–	3.1
Hardness	Shore 00[Note 1]	5519 @ 70 5519S @ 75
Volume Resistivity (Ω-cm)	ASTM D257	1.7 x 10^{14}
Dielectric Strength (kV/mm)	ASTM D149	1.5 (5519S = 3.5 est.)
Dielectric Constant	ASTM D150	19.5 (1-100 kHz)

Notes:

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

2) Thermal conductivity can vary with test method and/or equipment used for testing at different test sites. Thermal K based on testing of the 5519. Effective Thermal K and Thermal Resistance will be somewhat reduced with the addition of the polymeric film of the 5519S constructions.

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 5519

Duration (hrs)	Initial	500	1000	3000
Thermal Conductivity (W/mK)	4.9	4.9	4.9	4.9
Hardness (Shore 00)	69	70	70	70
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.

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.

Regulatory

For regulatory information about this product, refer to our website at www.3M.com/electronics.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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