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Featured Product

3M™ Thermally Conductive Interface Pads

Why choose them and how to weigh the benefits of choosing between silicone and acrylic

Thermally conductive interface pads are used to transfer heat away from hot surfaces in an assembled design. 3M™ Thermally Conductive Interface Pads are often used in a variety of applications such as LED lighting and display applications, consumer electronics, medical devices, automotive batteries, and industrial controls. These materials are available in various formats, including sheets and rolls, and can be easily die-cut. There are a variety of adhesion levels, thermal conductivities and softness grades that are designed to provide excellent gap filling.

3M™ Thermally Conductive Interface Pads are often used as an alternative to thermally conductive greases. Because of their ability to flow, assemblies may become messy when thermally conductive grease is improperly applied. Beyond that, grease can migrate and may contaminate the device leads. Thermal pads, on the other hand, are much easier to install and work with – they maintain their thickness and precise placement in an assembly.

Thermally Conductive Silicone and Acrylic Pads

3M Thermally Conductive Interface Pads are available in both silicone and acrylic elastomer versions. So, what's the difference and why might you choose one over the other?

There are several reasons why you may want to choose an acrylic thermal interface pad over a silicone option. Acrylic thermal interface pads do not contain silicone oils which may bleed and affect the connections. Unlike silicone, there is low outgassing which provides excellent dielectric properties. Finally, acrylic pads are often less costly than silicone and tend to weigh less which may play a factor in lightweighting applications.

[Silicone thermal interface pads](#) have their advantages too. Silicone thermal interface pads provide excellent heat resistance. However, some electronic applications do not require this level of heat resistance, but are an excellent choice for industrial, high temperature applications.

3M Silicone pads vs. 3M Acrylic pads

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes. The table below highlights some of the key factors differentiating the two types of thermal interface pads.

	3M Silicone Conductive Pads	3M Acrylic Conductive Pads
Softness/Conformability	Very Soft when not fiberglass reinforced	Good/Better
Thermal Conductivity (W/m-k)	Up to 5	Up to 4
Dielectric Strength	Good	Excellent
Heat Resistance	Excellent	Good
Flame Retardance	Good	Good
Raw Material Cost	High	Low
Key Advantages	High Temp reliability	Lower weight than silicone

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3M™ Thermally Conductive Interface Pads

3M™ Thermally Conductive Interface Pads are available in a variety of silicone and acrylic options. The attached guides can help you choose which option is best for your application. Contact Tekra at 1-800-448-3572 to discuss your thermal management needs.

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