PDF Technical File

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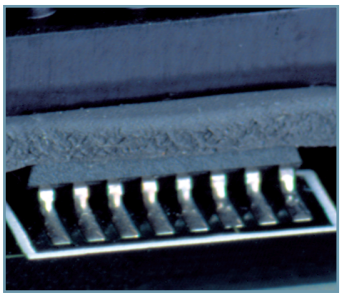


thermal gap filler pads

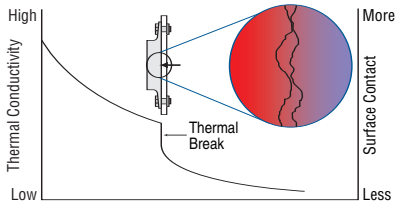
Thermal Gap Filler Pads are high heat transfer media which conform to surface irregularities and adhere to a wide range of shapes and sizes of components; in particular, recessed areas and protrusions.

Where space between mating surfaces varies or is uneven, and where surface textures are normally a thermal transfer concern, the very pliable conformity of the pads is excellent for filling air gaps and minute variations.

A widely recognized axiom of chemical engineering and stress analysis states that, for every 10˚C change in temperature, the reaction is a factor of 2; i.e., mean-time-to-failure of a device can be reduced by a factor of 2 for every 10˚C temperature rise.

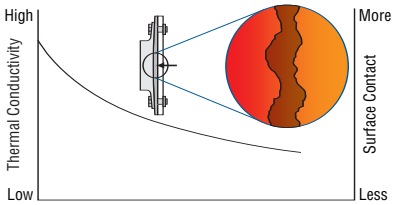
Four grades, each with a cost-effective formulation suitable for the thermal conductivity needed on a given application, accommodate most demanding situations. Convenient sheet configurations are suitable for die-cutting, or easy hand-slitting operations.

As shown in the drawings to the right, even the most highly polished mating surfaces do not make reliable contact surfaces. Complete physical contact is necessary to minimize the resistance to heat flow for the best thermally conductive path. All such surface voids, when properly filled with a conformable, thermally conductive gap filler pad, will in most cases exhibit close to the continuous characteristics of a solid metal of the same dimensions.



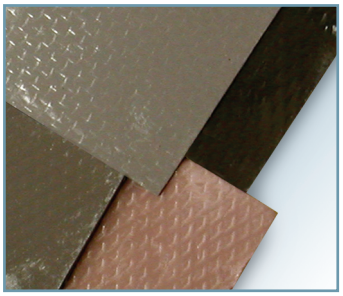
Thermal Impedance versus Surface Contact

Thermal impedance of semiconductor mounted to substrate is appreciably increased at junction of porous surfaces due to a lack of surface-to-surface contact.



Thermal Impedance versus Surface Contact

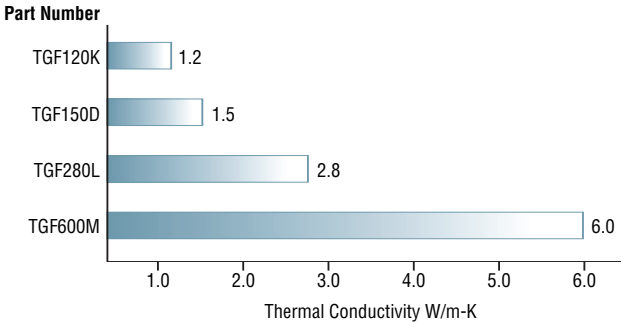
Thermal impedance of semiconductor mounted to substrate with gap filler pad is eliminated yielding higher temperature gradient.



material characteristics

Material Characteristic	Measure
Material	silicone compound
Extractable Volatiles	content % cyclodimethyl siloxane @ D4 - D10 < 0.0010 wt %
Continuous Use Temperature	-60˚ to 200˚C
Flammability	UL94 V-0 (file # E58126)
Thermal Conductivity	up to 6.00 W/m-K; 4 formulas

thermal properties



Description	Unit	Part Number TGF120K	TGF150D	TGF280L	TGF600M
Color	visual	black	light gray	dark gray	brown
Thermal Conductivity	W/m-K	1.20	1.50	2.80	6.0
Volume Resistivity	MΩ•m	4.2 x 10^4	1.0 x 10^6	2.5 x 10^4	1.3 x 10^6
Withstand Voltage	KV/mm•AC	16	14	13	13
Specific Gravity	gr/cm²	2.3	2.6	2.7	3.2
Hardness	Shore 00	48	49	53	52
Elongation	%	250	100	64	80
Compression	KgF @ 10%	13.0	12.5	11.0	10.7
	@ 50% sustain	40.0	39.2	44.0	50.6
Sheet Size	L x W x T	11.75 x 7.875 x .039			*300 x 200 x 1.0 mm*

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