THERMAWORX

Thermal Interface Materials

Thermal Materials

Electronic devices and systems continue to be designed to run at increasingly higher clock speeds while at the same time being reduced in size. As a result Thermal Management becomes more important to the functionality of a product. To increase heat dissipation between a hot area and the cooling device such as a heat sink, Thermaworx Thermal Interface Materials are used. These silicone based materials work by displacing the air in uneven areas with highly conductive material yielding increased cooling. Thermal Interface Materials offer excellent thermal transfer properties across a wide gap range, and are available in several formulations for use in a variety of thermal management scenarios.

Thermal Interface Materials

Material Type		T100*	T150	T200	T250	T300*	T350	T400	T500	T600	T700	T1500
Base Elastomer		Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone
Reinforcement		Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass	NA	NA	NA	NA	NA	NA
Color		L. Gray	Pink	L. Blue	Yellow	D. Blue	Green	L. Red	White	Gray	Gray	Black
Thickness Range (mm)		0.2 – 14	0.2 – 14	0.3 – 14	0.3 – 14	0.5 – 14	0.5 – 8	0.5 – 8	0.5 – 2	0.25 – 3	0.5 – 3	0.5 – 2
Thermal/Electrical	**Test Method**	**T100**	**T150**	**T200**	**T250**	**T300**	**T350**	**T400**	**T500**	**T600**	**T700**	**T1500**
Thermal Conductivity (W/m*K)	ASTM D5470	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	15.0
Thermal Impedance	ASTM D5470	1.5	1.5	1.0	1.0	.75	.75	.50	.45	.40	.30	.15
Dielectric Strength	ASTM D149	7	7	8	8	8	8	9	9	9	2	.5
Dielectric Constant @1MHz	ASTM D150	6.8	7.2	7.2	6.3	6.3	5.2	7.0	5.0	4.1	5.0	15.0
Volume Resistivity. ohm-cm	ASTM D257	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{11}	10^{14}
Physical Properties	**Test Method**	**T100**	**T150**	**T200**	**T250**	**T300**	**T350**	**T400**	**T500**	**T600**	**T700**	**T1500**
Hardness, Shore 00	ASTM D2240	12	15	18	25	30	35	40	45	50	65	45
Specific Gravity (g/cm3)	ASTM D792	2.32	2.62	2.80	2.95	3.20	3.05	3.10	3.10	2.30	3.20	1.50
Tensile Strength	ASTM D412	0.55	0.52	0.43	0.32	0.30	0.28	0.25	0.15	0.36	0.10	0.12
Elongation %	ASTM D412	56.4	97.3	104.5	125.4	86.5	58.8	84.7	60.0	32.4	45.0	200.0
Temperature Range	(C)	-50 to 160										
Outgassing, % TML	ASTM E595	<0.4	<0.4	<0.35	<0.35	<0.3	<0.2	<0.2	<0.5	<0.6	<0.7	<0.5
Flame Rating	UL94	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
Shelf Life	Months	24	24	24	24	24	24	24	24	24	24	24

*T100 and T300 Materials with a minimum thickness of 0.5mm are available in "Soft" formulations with identical thermal properties while being approximately 30% softer than standard.

Features

- Material Specific Thermal Conductivity
- Soft, Excellent Compression Rate
- Large Gap Range
- UL94 V-0 Flammability Rated
- RoHS & REACH Compliant

Configurations

- Available as Sheet Stock
- Can be Die Cut to any size
- Kiss-Cutting available
- Can be custom molded
- Available with adhesive backing

Applications

- Power Conversion
- Flat Panel Displays
- LED Lighting
- Audio - Video Devices
- Instrumentation

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