

Overview:

KERATHERM® thermally conductive silicone film series are designed to be highly conductive that provide well-balanced thermal, electrical, dielectric behaviour providing a thin bond-line with very good inherent tack characteristics.

Applications that required better mechanical strength can be achieved through fiberglass reinforcement and adhesive coating is an optional availability.

Applications:

- Automotive ■ Power Supplies ■ Audio and Video Components ■ White Goods ■ Engine Controllers
- Power Converters (AC-DC, DC-DC)



Non-Reinforced Thermally Conductive Silicone Film

Properties	Unit	86/30	86/37	86/50	86/60	86/82	Test Method
Colour	-	White	Green	Pink	Pink	Red	Visual
Reinforcement	-	None	None	None	None	None	Visual
Thermal Properties							
Thermal resistance R_{th}	K/W	0.22	0.32	0.16	0.14	0.09	Kerafol
Thermal impedance R_{ti}	$^{\circ}\text{Cmm}^2/\text{W}$	90	129	64	56	35	Kerafol
	Kin^2/W	0.13	0.20	0.09	0.079	0.05	Kerafol
Thermal conductivity λ	W/m-K	2.5	1.8	3.5	4.5	6.5	ASTM D5470
Electrical Properties							
Breakdown voltage $U_{d;ac}$	kV	1.5	8	1.5	5.0	1	ASTM D149
Dielectric breakdown $E_{d;ac}$	kV/mm	7	26	7	20	4	ASTM D149
Volume resistivity	Ωm	2.5×10^{11}	2.5×10^{11}	1.3×10^{14}	$>600 \times 10^9$	2.0×10^{14}	ASTM D257-3
Dielectric loss factor $\tan \delta$	1	22×10^{-3}	6.0×10^{-3}	6.7×10^{-2}	0.0	1.4×10^{-3}	ASTM D150
Dielectric constant ϵ_r	1	3.0	2.9	2.3	1.47	2.4	ASTM D150
Mechanical Properties							
Measured thickness (+/-10%)	mm	0.225	0.225	0.225	0.250	0.250	ASTM D734
Hardness	Shore A	70 - 80	65 - 75	70 - 80	60 - 75	60 - 70	ASTM D2240
Tensile strength	N/mm ²	1.5	2	1.3	> 0.5	13	ASTM D412
Elongation	%	31	75	25	25	2	ASTM D412
Physical Properties							
Operating temperature	$^{\circ}\text{C}$	-60 to +250	-60 to +250	-60 to +250	-60 to +200	-40 to +200	Kerafol
Density	g/cm ³	2.33	2.29	1.97	1.38	1.23	Kerafol
Flame rating	UL 94	VO	VO	VO	VO	VO	U.L. E140693
Total Mass Loss (TML)	Ma.-%	-	-	-	<0.32	-	ASTM E 595
Thickness available	mm	0.125, 0.225, 0.300	0.125, 0.225, 0.300	0.125, 0.225, 0.300	0.150, 0.200, 0.250, 0.300	0.250, 0.300	Kerafol

* Data provided are nominal values that should not be used to write specifications. Users are advised to test and decide the suitability of the product to fit their applications.

Fiberglass Reinforced Thermally Conductive Silicone Film

Properties	Unit	70/50	86/10	86/17	86/52	Test Method
Colour	-	Brown	White	Green	Pink	Visual
Reinforcement	-	None	None	None	None	Visual
Thermal Properties						
Thermal resistance R_{th}	K/W	0.44	0.25	0.55	0.22	Kerafol
Thermal impedance R_{ti}	$^{\circ}\text{Cmm}^2/\text{W}$	178	90	129	64	Kerafol
	Kin^2/W	0.27	0.15	0.34	0.14	Kerafol
Thermal conductivity λ	W/m-K	1.4	2.5	1.8	3.5	ASTM D5470
Electrical Properties						
Breakdown voltage $U_{d;ac}$	kV	5.0	1.5	8	1.5	ASTM D149
Dielectric breakdown $E_{d;ac}$	kV/mm	20	7	26	7	ASTM D149
Volume resistivity	Ωm	1.0×10^{13}	2.5×10^{11}	2.5×10^{11}	1.3×10^{14}	ASTM D257-3
Dielectric loss factor $\tan \sigma$	1	7.3×10^{-3}	22×10^{-3}	6.0×10^{-3}	6.7×10^{-2}	ASTM D150
Dielectric constant ϵ_r	1	3.6	3.0	2.9	2.3	ASTM D150
Mechanical Properties						
Measured thickness (+/-10%)	mm	0.250	0.225	0.225	0.225	ASTM D734
Hardness	Shore A	80 - 90	70 - 80	65 - 75	70 - 80	ASTM D2240
Tensile strength	N/mm ²	10	1.5	2	1.3	ASTM D412
Elongation	%	5	31	75	25	ASTM D412
Physical Properties						
Operating temperature	$^{\circ}\text{C}$	-40 to +200	-60 to +250	-60 to +250	-60 to +250	Kerafol
Density	g/cm ³	2.18	2.33	2.29	1.79	Kerafol
Flame rating	UL 94	V-1	VO	VO	VO	U.L. E140693
Total Mass Loss (TML)	Ma.-%	-	-	-	-	ASTM E 595
Thickness available	mm	0.250	0.125, 0.225, 0.300	0.125, 0.225, 0.300	0.125, 0.225, 0.300	Kerafol

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