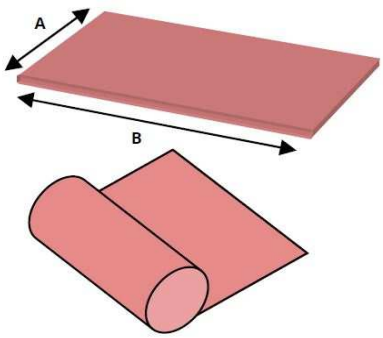
Glass-Fibre reinforced Silicone based Film / CG Series

Glass-fibre reinforced for a better mechanical stability

TC-CG series is a glass-fibre reinforced silicone-based foil which is filled with particularly heat-conductive ceramic partickles such as aluminum oxide, boron nitride and aluminum nitride or by mixtures in the polymer structure of the elastomer. Due to its very soft surface properties and its pressurization, the material adapts very well to the contact surfaces and expels the air from gaps and thus minimizes the thermal contact resistance. High thermally performance TC-CG material meets very high heat transfer requirements. The total thermal transfer resistance is significantly minimized by this interface material. It thus meets the highest technical requirements placed on an interface material. The silicone CG series films are the ideal and user-friendly replacement for mica or ceramic plates in combination with thermal conductivity and electrical insulation.



PROPERTIES

Very good thermal conductivity and mechanical stability, Low overall thermal contact resistance, Safe electrical insulation, Very high dielectric strength, No additional heat conducting paste necessary, Clean, fast and process-reliable assembly, Residue-free removal after application, Very low outgassing behaviour, Very good surface adaptation, Extremely resistant to ageing and chemicals, Non-flammable according to UL 94 VO

AVAILABILITY

Standard Sheets 320mm x 1000mm, Roll 320mm x 50m or 25m (45-CG). Other width belts on request, Standard TO-formats, Die cut parts, various formats on request, CG material is available non tacky (0H) or self adhesive on one side (1H)

APPLICATION EXAMPLES

Heat Transfer of MOSFET, IGBT, Diode, Thyristor, Hybrid modules in all discreate semiconductors and non-insulated packages. Power modules, power supplies, servo or el. drives, motor control, controllers, frequency convertors , inverters UPS, etc.

ISO 9001 14001 RoHS REACH UL

UL Yellow Card No. E48923

Properties	Unit	Test method	TC-20-CG	TC-30-CG	TC-45-CG	TC-80-CG
Material - Thermo sheet		-	Silicone – glass fibre	Silicone – glass fibre	Silicone – glass fibre	Silicone – glass fibre
Colour		-	Redish Brown	Redish Brown	Redish Brown	Redish Brown
Mareial Thickness / Tolerance	**mm**	-	**0,20** / + 0,05/-0,05	**0,3** / + 0,1/ -0,0	**0,45** / + 0,05/-0,05	**0,80** / + 0,1/ -0,0
Thermal and Electrical						
Thermal resistance (TO-3) With adhesive layer - one side	**°C/W**	Shin-Etsu Methode type CG-1H	0,93	1,39	1,57	1,92
Thermal resistance (TO-3)	**°C/W**	Shin-Etsu Methode	0,48	0,70	1,00	1,30
Thermal resistance (Inch2)	**°C/W**	JIS K 6249	**0,3**	**0,45**	**0,65**	**1,05**
Thermal conductivity	**W/m*K**	ISO22007-2/ASTM E1530	**1,7 / 1,9**			
Operating temperature	**°C**		-60 °C to 200 °C	-60 °C to 200 °C	-60 °C to 200 °C	-60 °C to 200 °C
Breakdown Voltage / 1000V/s	**kV(AC)**	JIS K 6249	(voltage ramp) 5,0	(voltage ramp) 7,0	(voltage ramp) 10,0	(voltage ramp) 19,0
Breakdown Voltage /up failure	**kV(AC)**	JIS C 2110	(Voltage levels) 2,0	(Voltage levels) 3,0	(Voltage levels) 9,0	(Voltage levels) 10,0
Volume resistivity	**Ωm**		$1,8 \times 10^{12}$	$1,8 \times 10^{12}$	$1,20 \times 10^{12}$	$1,0 \times 10^{12}$
Dielectric constant	**1kHz**	JIS K 6249	3,8	4,2	4,3	4,3
Flame Retardant		UL 94	V-0			
Mechanical						
Hardness Durometer A	**Shore A**	JIS K 6249	**90**			
Tear strength	**(kN/m)**	JIS K 6249	70	81	70	24
Tensile strength	**MPa/**	JIS K 6249	25,9	24,1	20,4	9,3
Density at 23 °C	**g/cm³**	JIS K 6249	2,5			
Outgassing (LMW Siloxane)	**ppm**	Shin-Etsu Methode	sum D3-10 = <10			

Test Methods: All data without warranty and subject to change. Please contact us for further data and information.

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