



THICKER THERMAL INSULATOR PAD PREVENTS ELECTRICAL SHORTS IN AUTOMOTIVE ELECTRONICS APPLICATIONS

Tgard™ 500 is a medium thermal performance insulator pad consisting of a ceramic filled high temperature silicone rubber coated on electrical grade fiberglass.

Tgard™ 500 is designed for applications that require additional thickness to prevent electrical shorts from stamped aluminum heatsinks used in switching mode power supplies (SMPS) and debris from aluminum castings used in automotive motor controls.

Tgard™ 500 is used in applications that require interface of 2.4°C/watt or higher on a TO-220 mounted @ 50 psi pressure.

FEATURES AND BENEFITS

- High breakdown voltage of >6,000 volts AC
- Thermal resistance of 0.45°C-in²/watt at 50 psi
- Thermal resistance of 0.35°C-in²/watt at 400 psi
- Thick enough to encapsulate burrs of stamped heatsinks

APPLICATIONS

- Automotive motor controls
- Switching mode power supplies
 - Stamped aluminum heatsinks

global solutions: local support.™

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Thermally Conductive Insulators

PROPERTY	TEST METHOD	METRIC VALUES		IMPERIAL VALUES			
ELECTRICAL PROPERTIES							
Dielectric With Standard Voltage 50mm probe for 30 sec.	ASTM D149	4,500 volts AC		4,500 volts AC			
Dielectric Breakdown Voltage 50mm probe	ASTM D149	>6,000 volts AC		>6,000 volts AC			
Volume Resistivity	ASTM D257	>10 ¹² ohm-cm		>10 ¹² ohm-in			
Dielectric Constant @ 1 MHz	ASTM D257	3.3		3.3			
Electrical RTI Temperature rating	UL 746D	150°C		302°F			
MECHANICAL PROPERTIES							
Thickness		0.23 mm		0.009 inch			
Hardness	ASTM D2240	80 Shore A		80 Shore A			
Tensile Strength	ASTM D412	1.3 kpsi		9 mPa			
Elongation @ 45° to Warp/Fill	ASTM D412	20%		20%			
Elongation along width or length	ASTM D412	5%		5%			
Operating Temperature Range		-60 - 180°C		-76 - 357°F			
Color		Brown		Brown			
UL Flammability Rating	UL 94	V-0		V-0			
PRESSURE, PSI (KPA)	UNITS	10 (69)	25 (172)	50 (345)	100 (689)	200 (1379)	400 (2758)
TOTAL THERMAL RESISTANCE							
Modified ASTM D5470	°C-in ² /watt	0.86	0.68	0.55	0.40	0.37	0.35
Modified ASTM D5470	°C-cm ² /watt	5.6	4.4	3.6	2.6	2.4	2.3
TO-220	°C/watt	1.29	1.01	0.95	0.79	0.77	0.76

STANDARD THICKNESS: 9 mils (0.229mm)

DIE CUT PARTS: Standard and custom configurations available

PRESSURE SENSITIVE ADHESIVE: Single side adhesive available on request

Data for design engineer guidance only. Observed performance varies in application. Engineers are reminded to test the material in application.

THR-DS-TGARD-500 1112

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