



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.

FEATURES AND BENEFITS

- High breakdown voltage of > 6,000 volts AC
- Thermal resistance of 0.48° C-in²/watt at 50 psi
- Thermal resistance of 0.28° 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

Tgard™ 500

Thermally Conductive Insulators

PROPERTIES	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	Avg >6,000 volts AC				Avg >6,000 volts AC	
Volume resistivity	ASTN D257	10 ¹² ohm-cm				10 ¹² ohm-in	
Dielectric constant @1Mhz	ASTN D257	3.3				3.3	
Electrical RTI temperature rating	UL746D	150°C				302°F	
MECHANICAL PROPERTIES							
Thickness		0.23 mm				0.009 in	
Hardness	ASTM D2240	80 Shore A				80 Shore A	
Tensile strength	ASTM D412	11.7 Mpa				1.7 Kpsi	
Elongation @ 45º to warp/fill	ASTM D412	20%				20%	
Elongation along width or length	ASTM D412	5%				5%	
Operating temperature range		-60º to 180ºC				-76º to 356ºF	
Color		Brown				Brown	
UL flammability rating	UL 94	V-0				V-0	
PRESSURE	UNITS	10 (69)	25 (172)	50 (345)	100 (689)	200 (1379)	400 (2758)
TOTAL THERMAL RESISTANCE							
Modified ASTM D5470	ºC-in ² /watt	0.81	0.70	0.48	0.33	0.30	0.28
Modified ASTM D5470	ºC-cm ² /watt	5.16	4.52	3.21	2.13	1.94	1.80
T0-220	ºC/watt	1.29	1.01	0.95	0.79	0.77	0.76

Standard thickness: 9 mils (0.229 mm)

Configurations available:

- Sheet form, roll form and die-cut parts
- Single-side, pressure-sensitive adhesive on request

Standard options:

- Without adhesive (A0): 12 x 18" sheets, 12" x 65M, 12" x 30M roll or custom configuration
- With adhesive (A1): 11.75 x 18" sheets, 11.75" x 30M roll or custom configuration

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

THR-DS-Tgard-500_07_31_14

Any information furnished by Laird and its agents is believed to be accurate and reliable. All specifications are subject to change without notice. Responsibility for the use and application of Laird materials rests with the end user, since Laird and its agents cannot be aware of all potential uses. Laird makes no warranties as to the fitness, merchantability or suitability of any Laird materials or products for any specific or general uses. Laird, Inc or any of its affiliates or agents shall not be liable for incidental or consequential damages of any kind. All Laird products are sold pursuant to the Laird Terms and Conditions of sale in effect from time to time, a copy of which will be furnished upon request. © Copyright 2014 Laird, Inc. All Rights Reserved. Laird, the Laird Logo, and other marks are trademarks or registered trademarks of Laird, Inc. or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird or any third party intellectual property rights. Document A 15173-00 Rev C 07_31_2014

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Laird Technologies:](#)

[A018310-04-T6](#)