



THERMALLY CONDUCTIVE ELECTRICALLY INSULATIVE MATERIAL

Tgard™ 5000 is an excellent dielectric material with good thermal performance consisting of a polyimide film coated with a ceramic-filled, high-temperature silicone rubber.

Tgard™ 5000 is ideal for applications that require a delta temperature across the interface of $2.0^{\circ}\text{C}/\text{watt}$ or higher on a TO-220 clip mounted at 50 psi pressure. Tgard™ 5000 has high dielectric strength for the AC side of a switching mode power supply. Tgard™ 5000 is tough resulting in an exceptional cut-through resistant material.

FEATURES AND BENEFITS

- High dielectric breakdown voltage of 6,000 volts
- Film base resistance cut through
- Thermal resistance of $0.40^{\circ}\text{C-in}^2/\text{watt}$ @ 50 psi clip pressure
- Thermal resistance of $0.23^{\circ}\text{C-in}^2/\text{watt}$ @ 400 psi screw pressure

APPLICATIONS

- Switching mode power supplies
- Electrical power generators
- UPS units

PROPERTIES	TEST METHOD	METRIC VALUES		IMPERIAL VALUES			
ELECTRICAL PROPERTIES							
Dielectric withstand voltage 50mm probe for 30 sec	ASTM D149	4,500 volts DC		4,500 volts DC			
Dielectric breakdown voltage 50mm probe	ASTM D149	Avg >6,000 volts AC		Avg >6,000 volts AC			
Volume resistivity	ASTM D257	10^{12} ohm-cm		10^{12} ohm-in			
Dielectric constant @1Mhz	ASTM D150	3.4		3.4			
MECHANICAL PROPERTIES							
Thickness		0.127 mm		5 mils			
Hardness	ASTM D2240	75 Shore A		75 Shore A			
Tensile strength	ASTM D412	33.1 Mpa		4.8 Kpsi			
Elongation along width or length	ASTM D412	45%		45%			
Operating temperature range		-60° to 180°C		-76° to 356°F			
Color		Tan		Tan			
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	°C-in ² /watt	0.62	0.51	0.40	0.27	0.25	0.23
Modified ASTM D5470	°C-cm ² /watt	4.0	3.29	2.58	1.74	1.61	1.48
TO-220	°C/watt	1.31	1.00	0.82	0.65	0.58	0.54

Configurations available:

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

Standard options:

Standard die cut parts: Standard part sizes for TO-220, TO-247, TO-3P, TO-3PL and TO-264

Custom die cut parts:

Custom configurations available with standard tolerance of 0.5mm (0.020"). Ability to handle drawings in multiple file formats. (.DXF and .DWG preferred)

USA: +1.866.928.8181

Europe: +49.8031.24600

Asia: +86.755.2714.1166

www.laird.com

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



Mouser Electronics

Authorized Distributor

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

[Laird Performance Materials](#):

[OTH-Q46712A-00-NG9](#)