



## THERMALLY CONDUCTIVE ELECTRICALLY INSULATIVE MATERIAL

Tgard<sup>™</sup> 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<sup>™</sup> 5000 is ideal for applications that require a delta temperature across the interface of 2.0°C/watt or higher on a TO-220 clip mounted at 50 psi pressure. Tgard<sup>™</sup> 5000 has high dielectric strength for the AC side of a switching mode power supply. Tgard<sup>™</sup> 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°C-in<sup>2</sup>/watt @ 50 psi clip pressure
- Thermal resistance of 0.23°C-in<sup>2</sup>/watt @ 400 psi screw pressure

## APPLICATIONS

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

PROPERTIES	TEST METHOD	METRIC VALUES	IMPERIAL VALUES
<b>ELECTRICAL PROPERTIES</b>			
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 <sup>12</sup> ohm-cm	10 <sup>12</sup> ohm-in
Dielectric constant @1Mhz	ASTM D150	3.4	3.4
<b>MECHANICAL PROPERTIES</b>			
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)
<b>TOTAL THERMAL RESISTANCE</b>							
Modified ASTM D5470	°C-in <sup>2</sup> /watt	0.62	0.51	0.40	0.27	0.25	0.23
Modified ASTM D5470	°C-cm <sup>2</sup> /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
- 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
- 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](http://www.laird.com)



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