



### THEMALLY 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°C/watt or higher on a TO-220 clip mounted @ 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 0.35oC-in2/watt @ 50 psi clip pressure
- Thermal resistance of 0.28oC-in2/watt @ 400 psi screw pressure

### APPLICATIONS

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

**global solutions: local support™**

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# Tgard™ 5000

## Thermally Conductive Insulators

PROPERTY	TEST METHOD	METRIC VALUES	IMPERICAL VALUES
<b>ELECTRICAL PROPERTIES</b>			
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 <sup>12</sup> ohm-cm	>10 <sup>12</sup> ohm-in
Dielectric Constant @ 1 MHz	ASTM D257	3.4	3.4
<b>MECHANICAL PROPERTIES</b>			
Thickness		0.127 mm	5 mils
Hardness	ASTM D2240	76 Shore A	76 Shore A
Tensile Strength	ASTM D412	40 MPa	6.0 kpsi
Elongation, MD	ASTM D412	45%	45%
Flame Rating	UL 94	V-0	V-0
Operating Temperature Range		-76° – 180°C	-60° – 356°F
Color		Tan	Tan

PRESSURE, PSI (KPA)	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	0.55	0.45	0.35	0.30	0.28	0.28
Modified ASTM D5470	°C-cm <sup>2</sup> /watt	3.5	2.9	1.26	1.93	1.81	1.81
TO-220	°C/watt	2.2	2.1	2.0	1.9	1.8	1.8

- 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)
- 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.

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