



### ELECTRICALLY INSULATING, THERMALLY CONDUCTIVE MATERIAL

The Tgard™ 3000 is specifically designed to solve over heating issues such as lower component efficiency, premature component failures, size limitations and other performance problems for today's power component assemblies. The need to remove unwanted heat to ambient temperatures becomes more important as electronic systems pack more power into smaller spaces.

The Tgard™ 3000 is a film-based product that is designed to resist cut through in screw mounting applications while providing a more consistent breakdown voltage over other insulator constructions.

The soft conformal coating on the film core provides an excellent mating surface for low pressure clip mounting applications.

### PERFORMANCE CAPABILITIES

- High dielectric breakdown of 6,000 volts
- Film base resistant to cut through
- Thermal resistance of 0.45 °C-in<sup>2</sup>/watt @ 50 psi pressure
- Thermal resistance of 0.35 °C-in<sup>2</sup>/watt @ 400 psi pressure

### FEATURES AND BENEFITS

- Designed for switch mode power supply applications
- Reinforced with high temperature resistant film
- High voltage resistant film
- Total thermal resistance of 2.4 °C/watt on TO-220
- Non-blocking for ease of use

### APPLICATIONS

- Switching mode power supplies for:
  - Communications
  - Computers
  - Consumer electronics
  - Industrial
  - Instrumentation
  - Medical
- Electrical power generators
- UPS units

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Americas: +1.800.843.4556

Europe: +49.8031.2460.0

Asia: +86.755.2714.1166

CLV-customerservice@lairdtech.com

[www.lairdtech.com/thermal](http://www.lairdtech.com/thermal)

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	3.3	3.3
<b>MECHANICAL PROPERTIES</b>			
Thickness		0.13 mm	0.005 inch
Hardness	ASTM D2240	85 Shore A	85 Shore A
Tensile Strength	ASTM D412	52.4 MPa	7.6 kpsi
Elongation	ASTM D412	85%	85%
Operating Temperature Range		-60 - 180°C	-76 - 356°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)
<b>TOTAL THERMAL RESISTANCE</b>							
Modified ASTM D5470	°C-in <sup>2</sup> /watt	0.55	0.50	0.45	0.40	0.35	0.35
Modified ASTM D5470	°C-cm <sup>2</sup> /watt	3.55	3.22	2.90	2.60	2.30	2.30
TO-220	°C/watt	2.9	2.6	2.4	2.3	2.2	2.2

- 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.

### THR-DS-Tgard-3000 0710

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