



### LOW COST, MEDIUM PERFORMANCE INSULATOR MATERIAL

The Tgard™ 20 is designed to solve over heating issues such as lower component efficiency, premature component failures, size limitations and other performance problems for today's computer power supplies.

The Tgard™ 20 is a film-based product designed to resist cut through in screw mounting applications while providing a more consistent breakdown voltage over other insulator constructions.

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

### PERFORMANCE CAPABILITIES

- High dielectric breakdown of 9,000 volts
- Film base resistance cut through
- Thermal resistance of 0.60°C-in<sup>2</sup>/ watt @ 25 psi pressure

### FEATURES AND BENEFITS

- Reinforced with moderate temperature resistant film
- High voltage resistant film
- Total thermal resistance of 3.4°C/watt on TO-220
- Non-blocking for ease of use
- Designed for computer power supplies

### APPLICATIONS

- Switching mode power supplies for:
  - Computers
  - Consumer electronics
- UPS units

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PROPERTY	TEST METHOD	METRIC VALUES	IMPERIAL VALUES
<b>ELECTRICAL PROPERTIES</b>			
Dielectric Withstand Voltage	ASTM D149	4,500 volts DC	4,500 volts DC
Dielectric Breakdown Voltage	ASTM D149	>9,000 volts AC	>9,000 volts AC
Volume Resistivity	ASTM D257	>10 <sup>12</sup> ohm-cm	>10 <sup>12</sup> ohm-in
Dielectric Constant @ 1 MHz	ASTM D257	1,8	1.8
<b>MECHANICAL PROPERTIES</b>			
Thickness		0,076 mm	0.003 inch
Substrate Film Thickness		0,051 mm	0.002 inch
Tensile Strength	ASTM D412	138 MPa	20 kpsi
Elongation	ASTM D412	130%	130%
Operating Temperature Range		-40 - 150°C	-40 - 302°F
Color		White	White
UL Flammability Rating	UL 94	V0	V0

PRESSURE, PSI (KPA)	UNITS	10 (69)	25 (172)	50 (345)	100 (689)	200 (1379)
<b>TOTAL THERMAL RESISTANCE</b>						
Modified ASTM D5470	°C-in <sup>2</sup> /watt	0.65	0.60	0.60	0.60	0.60
Modified ASTM D5470	°C-cm <sup>2</sup> /watt	4,2	3,9	3,9	3,9	3,9
TO-220	°C/watt	3.8	3.4	3.4	3.4	3.4

STANDARD THICKNESS: 3 mils (0,076 mm)      STANDARD ROLL SIZE: 12" x 300' (304 mm x 91 meters)      DIE-CUT PARTS: Standard and custom configurations available

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

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