



#### **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
ELECTRICAL PROPERTIES			
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
MECHANICAL PROPERTIES			
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)
TOTAL THERMAL RESISTANCE						
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:	STANDARD ROLL SIZE:	DIE-CUT PARTS:
3 mils (0,076 mm)	12" x 300' (304 mm x 91 meters)	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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