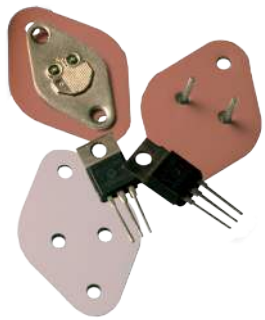
Laird

Smart Technology. Delivered.

Tgard™ 3000 Series
Thermally Conductive Insulators



HIGH PERFORMANCE THERMAL INTERFACE PRODUCTS

Tgard™ 3000 is specifically designed to solve overheating 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.

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 0.55ºC-in2/watt @ 50 psi pressure
- Thermal resistance of 0.37ºC-in2/watt @ 400 psi pressure

FEATURES AND BENEFITS

- Designed for switch mode power supply applications
- Reinforced with high temperature resistant film
- High voltage resistant film

APPLICATIONS

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

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PROPERTIES	TEST METHOD	METRIC VALUES	IMPERIAL VALUES
ELECTRICAL PROPERTIES			
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	ASTN D257	10^{12} ohm-cm	10^{12} ohm-in
Dielectric constant @1Mhz	ASTN D257	3.3	3.3
MECHANICAL PROPERTIES			
Thickness		0.13 mm	5 mils
Hardness	ASTM D2240	80 Shore A	80 Shore A
Tensile strength	ASTM D412	43.4 Mpa	6.3 Kpsi
Elongation along width or length	ASTM D412	35%	35%
Operating temperature range		-60º to 180ºC	-76º to 356ºF
Color		Brown	Brown
UL flammability rating	UL 94	V-0	V-0

PRESSURE	UNITS	10 (69)	25 (172)	50 (345)	100 (689)	200 (1379)	400 (2758)
TOTAL THERMAL RESISTANCE							
Modified ASTM D5470	ºC-in²/watt	0.86	0.68	0.55	0.44	0.40	0.37
Modified ASTM D5470	ºC-cm²/watt	5.55	4.39	3.55	2.83	2.58	2.39
T0-220	ºC/watt	1.36	1.08	0.91	0.83	0.78	0.74

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)

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