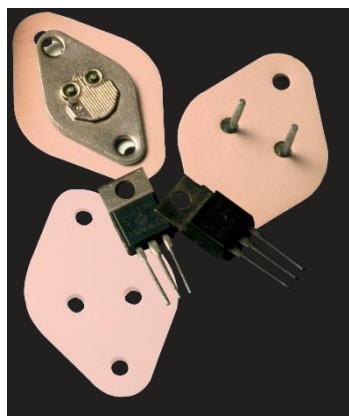


Thermally Conductive Insulators



HIGH THERMAL AND DIELECTRIC PERFORMANCE INSULATOR PAD

TgardTM K52 is a high thermal and dielectric performance insulator pad consisting of a ceramic filled phase change compound coated on PI film.

TgardTM K52 phase change coating all but eliminates contact thermal resistance. The phase change coating melts at 52°C and replaces all contact areas that contain air. TgardTM K52-1 is ideal for applications requiring the best thermal performing insulator material.

TgardTM K52-2 has the best balance of thermal, dielectric and cut through performance. TgardTM K52-3 is a 3 mil PI film that provides the best crush, cut, and tear resistance available with thermal properties that are still in the high-performance category.

FEATURES AND BENEFITS

- High breakdown voltage of 4,000 – 9,000 VAC
- Resistant to tears and cut through
- Total thermal resistance of 0.13 - 0.30°C-in²/watt at 20 psi clip force

APPLICATIONS

- Audio amps
- Power modules
- Switching mode power supplies

PROPERTY	TEST	K52-1	K52-2	K52-3
ELECTRICAL PROPERTIES				
Dielectric Withstand Voltage 6.3mm probe for 30 sec.	ASTM D149	3,000 volts DC	6,000 volts DC	7,500 volts DC
Dielectric Breakdown Voltage 6.3mm probe	ASTM D149	4,200 volts AC	7,800 volts AC	9,000 volts AC
Volume Resistivity	ASTM D257	4 x 10 ¹⁴	4 x 10 ¹⁴	4 x 10 ¹⁴
Dielectric Constant @ 1 MHz	ASTM D257	1.8	1.8	1.8
MECHANICAL PROPERTIES				
Composite Thickness	ASTM D374	2 mil (0.051mm)	3 mil (0.076mm)	4 mil (0.102mm)
PI Film Thickness	ASTM D374	1 mil (0.025mm)	2 mil (0.051mm)	3 mil (0.076mm)
Tensile Strength	ASTM D412	13.5 kpsi (93 mPa)	18 kpsi (124 mPa)	20 kpsi (139 mPa)
Elongation MD	ASTM D412	80%	80%	80%
Operating Temperature Range		-60 - 150°C	-60 - 150°C	-60 - 150°C
Color		Light amber	Light amber	Medium amber

PRESSURE, PSI (KPA)	10 (69)	20 (138)	50 (345)	100 (689)	200 (1379)	400 (2758)
TOTAL THERMAL RESISTANCE						
K52-1	0.14 (0.90)	0.14 (0.90)	0.13 (0.84)	0.13 (0.84)	0.13 (0.84)	0.13 (0.84)
K52-2	0.23 (1.48)	0.23 (1.48)	0.22 (1.42)	0.22 (1.42)	0.22 (1.42)	0.22 (1.42)
K52-3	0.33 (2.13)	0.32 (2.06)	0.31 (2.00)	0.30 (1.94)	0.30 (1.94)	0.30 (1.94)

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Tgard™ K52

Thermally Conductive Insulators

Converting PARTS: Sheets and stand die cut availability 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 with "A1" suffix. Please note this adhesive is intended to be a mounting aid and not for permanent bonding. A slight increase in thermal resistance may be seen in comparison to material with no adhesive.

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

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