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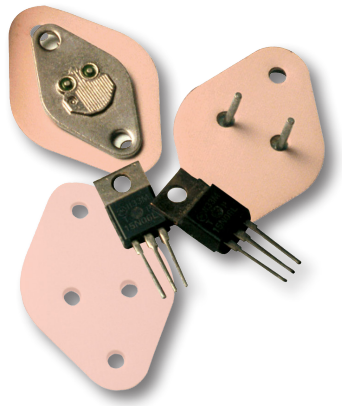
# Tgard™ K52
## Thermally Conductive Insulators



### HIGH THERMAL AND DIELECTRIC PERFORMANCE INSULATOR PAD

Tgard™ K52 is a high thermal and dielectric performance insulator pad consisting of a ceramic filled phase change compound coated on MT Kapton film.

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

Tgard™ K52-2 has the best balance of thermal, dielectric and cut through performance. Tgard™ K52-3 is a 3 mil MT Kapton film that provides the best crush and 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 range VAC
- Resistant to tears and cut through
- Total thermal resistance of 0.13 - 0.30 range ºC-in2/watt at 20 psi clip force

### APPLICATIONS

- Audio amps
- Power modules
- Switching mode power supplies

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# Tgard™ K52

## Thermally Conductive Insulators

| PROPERTY | TEST METHOD | K52-1 | K52-2 | K52-3 |
|---|---|---|---|---|
| ELECTRICAL PROPERTIES | | | | |
| Dielectric Withstand Voltage 6.4mm probe for 30 sec. | ASTM D149 | 3,000 volts DC | 6,000 volts DC | 7,500 volts DC |
| Dielectric Breakdown Voltage 6.4mm probe | ASTM D149 | 4,200 volts AC | 7,800 volts AC | 9,000 volts AC |
| Volume Resistivity | ASTM D257 | $4 \times 10^{14}$ | $4 \times 10^{14}$ | $4 \times 10^{14}$ |
| 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) |
| MT Kapton® 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 - 150ºC | -60 - 150ºC | -60 - 150ºC |
| 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 ˚C-in²/watt (˚C-cm²/watt) | | | | | | |
| 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) |

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.



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В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

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Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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