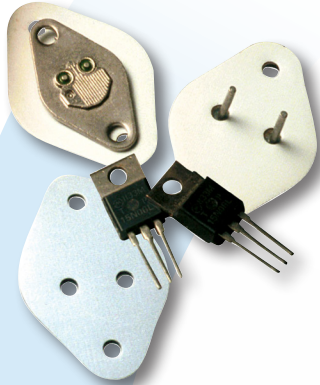




### HIGH PERFORMANCE THERMAL INTERFACE PRODUCTS

The Tgard™ 200 is a high performance interface pad. Consisting of a silicone/boron nitride composite, these fiberglass-reinforced pads are used when the lowest thermal resistance and highest dielectric strength are required

A high-tear, cut-through and puncture-resistant product, the Tgard™ 200 is tough and strong. Burrs cause no problems for the material and the pad will not dry out, crack or fail when pressured between mating parts.

The Tgard™ 200 is available in the following sizes:

0.010" (0.25 mm) die cut shapes only

0.020" (0.51 mm) sheets and die cut shapes

0.030" (0.75 mm) sheets and die cut shapes

### FEATURES AND BENEFITS

- High thermal Conductivity of 5.0 W/mK
- High breakdown voltage of > 6,000 volts
- Resistant to tears and punctures
- UL® 94 V0 rated

### APPLICATIONS

- Audio and video components
- Automotive control units
- General high pressure interfaces
- Motor controllers
- Power conversion equipment
- Power semiconductors
  - TO packages, MOSFETs and IGBTs

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# Tgard™ 200 Series

## Thermally Conductive Insulators

|                                       | TGARD™ 210                                         | TGARD™ 220                                         | TGARD™ 230                                         | TEST METHOD           |
|---------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|-----------------------|
| Construction & Composition            | Reinforced boron nitride filled silicone elastomer | Reinforced boron nitride filled silicone elastomer | Reinforced boron nitride filled silicone elastomer |                       |
| Color                                 | White                                              | Blue                                               | Green                                              | Visual                |
| Thickness                             | 0.010" (0.25mm)                                    | 0.020" (0.51mm)                                    | 0.030" (0.76mm)                                    |                       |
| Thickness tolerance                   | ±0.002" (±0.05mm)                                  | ±0.002" (±0.05mm)                                  | ±0.003" (±0.075mm)                                 |                       |
| Specific Gravity (Density)            | 1.52 g/cc                                          | 1.45 g/cc                                          | 1.47 g/cc                                          | Helium Pycnometer     |
| Hardness                              | 85 Shore A                                         | 80 Shore A                                         | 80 Shore A                                         | ASTM D2240            |
| Tensile Strength                      | N/A                                                | N/A                                                | N/A                                                | ASTM D412             |
| % Elongation                          | N/A                                                | N/A                                                | N/A                                                | ASTM D412             |
| Outgassing TML (Post Cured)           | 0.06%                                              | 0.06%                                              | 0.06%                                              | ASTM E595             |
| Outgassing CVCN (Post Cured )         | 0.05%                                              | 0.05%                                              | 0.05%                                              | ASTM E595             |
| UL Flammability Rating                | 94 V0                                              | 94 V1                                              | Not Rated                                          | E180840               |
| Temperature Range                     | -60°C to 200°C                                     | -60°C to 200°C                                     | -60°C to 200°C                                     |                       |
| Thermal Conductivity                  | 5 W/mK                                             | 5 W/mK                                             | 5 W/mK                                             | ASTM D5470 (modified) |
| Thermal Impedance @ 100 psi @ 689 KPa | 0.18°C-in²/W<br>1.17°C-cm²/W                       | 0.35°C-in²/W<br>2.26°C-cm²/W                       | 0.40°C-in²/W<br>2.28°C-cm²/W                       | ASTM D5470 (modified) |
| Breakdown Voltage                     | 6,000 VAC                                          | 10,000 VAC                                         | 20,000 VAC                                         | ASTM D149             |
| Volume Resistivity                    | 5x10 <sup>13</sup> ohm-cm                          | 5x10 <sup>13</sup> ohm-cm                          | 5x10 <sup>13</sup> ohm-cm                          | ASTM D257             |
| Dielectric Constant @ 1 MHz           | 3.32                                               | 3.32                                               | 3.32                                               | ASTM D150             |

Standard thicknesses: 0.010" (0.25 mm) die cut shapes only, 0.020" (0.51 mm), 0.030" (0.76 mm)

Standard sheet sizes: 0.020" and 0.030": 16" x 16" (406 mm x 406 mm) Individual die-cut shapes can be supplied.

Pressure sensitive adhesive: Request no adhesive with "AO" suffix. Request adhesive on one side with "A1" suffix. Double-sided adhesive is not available.

Reinforcement: Tgard™ 200 sheets are fiberglass reinforced.

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

THR-DS-Tgard-200 0313

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