



## HIGH PERFORMANCE THERMAL INTERFACE PRODUCTS

The T-gard™ 200 is a high performance interface pad. Consisting of silicon/boron composites, 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 T-gard™ 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 T-gard™ 200 is available in 0.010" (0.25 mm), 0.020" (0.51 mm) and 0.030" (0.75mm) thicknesses.

## FEATURES AND BENEFITS

- High thermal Conductivity of 5.0 W/mK
- High dielectric strength 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
  - T0 packages, MOSFETs and IGBTs

**global solutions: local support.™**

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# T-gard™ 200 Series Thermally Conductive Insulators

|                                       | T-GARD™ 210  | T-GARD™ 220  | T-GARD™ 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-in <sup>2</sup> /W<br>1.17°C-cm <sup>2</sup> /W | 0.35°C-in <sup>2</sup> /W<br>2.26°C-cm <sup>2</sup> /W | 0.40°C-in <sup>2</sup> /W<br>2.28°C-cm <sup>2</sup> /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" (0.25mm), 0.020" (0.51mm), 0.030" (0.76mm)  
Please contact Laird Technologies for alternate thicknesses.

Standard sheet sizes: 0.010": 14" x 16" (356mm x 406mm), 0.020" and 0.030": 8" x 8" (203mm x 203mm) and 16" x 16" (406mm x 406mm)  
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: T-gard™ 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-SPEC-T-GARD-200 0109

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