



# BERGQUIST SIL PAD TSP 1800

Known as BERGQUIST SIL-PAD 1200  
November 2018

## PRODUCT DESCRIPTION

Exceptional Performance, Thermally Conductive Elastomeric Material.

|                                    |                                                      |
|------------------------------------|------------------------------------------------------|
| <b>Technology</b>                  | Silicone                                             |
| <b>Appearance</b>                  | Black                                                |
| <b>Reinforcement Carrier</b>       | Fiberglass                                           |
| <b>Total Thickness</b>             | 0.229 to 0.406mm                                     |
| <b>Application</b>                 | Thermal management,<br>Thermally conductive adhesive |
| <b>Operating Temperature Range</b> | -60 to 180°C                                         |

## FEATURES AND BENEFITS

- Thermal impedance: 0.53°C-in<sup>2</sup>/W @ 50 psi
- Exceptional thermal performance at lower application pressures
- Smooth and non-tacky on both sides for easy re-positioning, ease of use and assembly error reduction
- Superior breakdown voltage and surface "wet out" values
- Designed for applications where electrical isolation is critical
- Excellent cut-through resistance, designed for screw and clip mounted applications

## TYPICAL APPLICATIONS

- Automotive electronics control modules
- Power supplies
- Motor controls
- Audio amplifiers
- Discrete devices
- Telecommunications

BERGQUIST SIL PAD TSP 1800 is a silicone based, fiberglass-reinforced thermal interface material featuring a smooth, highly compliant surface. The material features a non-tacky surface for efficient re-positioning and ease of use, as well as an optional adhesive coating.

BERGQUIST SIL PAD TSP 1800 exhibits exceptional thermal performance at low and high application pressures. The material is ideal for placement between electronic power devices and a heat sink for screw and clip mounted applications.

## TYPICAL PROPERTIES

### Physical Properties

|                                                |     |
|------------------------------------------------|-----|
| Shore Hardness, ASTM D2240, Shore 00           | 80  |
| Elongation, 45° to warp and fill, ASTM D412, % | 20  |
| Tensile Strength, ASTM D412, MPa               | 9   |
| Flammability Rating, UL 94                     | V-0 |

### Electrical Properties

|                                              |                   |
|----------------------------------------------|-------------------|
| Dielectric Breakdown Voltage, ASTM D149, Vac | 6,000             |
| Dielectric Constant, ASTM D150 @ 1,000 Hz    | 8.0               |
| Volume Resistivity, ASTM D257, ohm-meter     | 1×10 <sup>9</sup> |

### Thermal Properties

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| Thermal Conductivity, ASTM D5470, W/(m-K)                         | 1.8 |
| This is the measured thermal conductivity of the Sil-Pad compound |     |

### Thermal Performance vs. Pressure

|                                  |      |
|----------------------------------|------|
| TO-220 Thermal Performance, °C/W |      |
| @ 10 psi                         | 2.82 |
| @ 25 psi                         | 2.64 |
| @ 50 psi                         | 2.41 |
| @ 100 psi                        | 2.13 |
| @ 200 psi                        | 1.9  |

### Thermal Impedance, ASTM D5470, °C-in<sup>2</sup>/W <sup>(1)</sup>

|           |      |
|-----------|------|
| @ 10 psi  | 0.71 |
| @ 25 psi  | 0.62 |
| @ 50 psi  | 0.53 |
| @ 100 psi | 0.47 |
| @ 200 psi | 0.41 |

(1) The ASTM D5470 test fixture was utilized. The recorded values include the interfacial thermal resistance. The values are provided for reference only. Actual application performance is directly related to the surface roughness, flatness and pressure applied

## GENERAL INFORMATION

**For safe handling information on this product, consult the Safety Data Sheet, (SDS).**

### Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.



**CONFIGURATIONS AVAILABLE**

BERGQUIST SIL PAD TSP 1800 are supplied in:

- Sheet form, slit-to-width roll form
- Die-Cut parts
- 9, 12 and 16 mil thicknesses
- Adhesive coating

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Reference 1

**Conversions**

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$   
 $\text{kV/mm} \times 25.4 = \text{V/mil}$   
 $\text{mm} / 25.4 = \text{inches}$   
 $\text{N} \times 0.225 = \text{lb}$   
 $\text{N/mm} \times 5.71 = \text{lb/in}$   
 $\text{psi} \times 145 = \text{N/mm}^2$   
 $\text{MPa} = \text{N/mm}^2$   
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$   
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$   
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$   
 $\text{mPa}\cdot\text{s} = \text{cP}$

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