



# BERGQUIST SIL PAD TSP 1680

Known as BERGQUIST SIL-PAD 980  
November 2018

## PRODUCT DESCRIPTION

High Cut-Through Resistant, Electrically Insulating, Thermally Conductive Material.

<b>Technology</b>	Silicone
Appearance	Mauve
Reinforcement Carrier	Fiberglass
Total Thickness	0.229mm
<b>Application</b>	Thermal management, Thermally conductive adhesive
Operating Temperature Range	-40 to 150°C

## FEATURES AND BENEFITS

- Thermal impedance: 1.07°C-in<sup>2</sup>/W @ 50 psi
- Excellent cut-through resistance
- Use in screw-mounted applications with cut-through problems

## TYPICAL APPLICATIONS

- Silicone-sensitive assemblies
- Telecommunications
- Automotive electronics

In addition to excellent heat transfer and dielectric properties, BERGQUIST SIL PAD TSP 1680 is specially formulated for high resistance to crushing and cut-through typically found in high-pressure applications where surface imperfections such as burrs and dents are inherently common (e.g. heavily-machined metal surfaces manufactured from extrusions or castings).

With a field-proven history of reliability, BERGQUIST SIL PAD TSP 1680 is Bergquist's best material for cut-through resistance in screw-mounted and other applications with cut-through problems.

## TYPICAL PROPERTIES

### Physical Properties

Shore Hardness, ASTM D2240, Shore A	95
Hardness, Shore A, ASTM D2240	95
Breaking Strength, ASTM D1458, KN/m	26
Elongation, 45° to warp and fill, ASTM D412,%	10
Cut-Through Resistance, ASTM D412, Kg	340
Flammability Rating, UL 94	V-0

## Electrical Properties

Dielectric Breakdown Voltage, ASTM D149, Vac	4,000
Dielectric Constant, ASTM D150 @ 1,000 Hz	6.0
Volume Resistivity, ASTM D257, ohm-meter	1×10 <sup>10</sup>

## Thermal Properties

Thermal Conductivity, ASTM D5470, W/(m-K)	1.2
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## Thermal Performance vs. Pressure

TO-220 Thermal Performance, °C/W	
@ 10 psi	5.48
@ 25 psi	5.07
@ 50 psi	4.52
@ 100 psi	4.04
@ 200 psi	3.56

Thermal Impedance, ASTM D5470, °C-in <sup>2</sup> /W <sup>(1)</sup>	
@ 10 psi	1.51
@ 25 psi	1.22
@ 50 psi	1.07
@ 100 psi	0.89
@ 200 psi	0.53

1) The ASTM D5470 test fixture was used. The recorded value includes interfacial thermal resistance. These 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 1680 are supplied in:

- Sheet form, roll form and die-cut parts
- With or without pressure-sensitive adhesive



**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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