



# BERGQUIST SIL PAD TSP PPK1300

Known as BERGQUIST POLY-PAD K-10  
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## PRODUCT DESCRIPTION

Polyester-Based, Thermally Conductive Insulation Material.

|                                  |  |
|----------------------------------|--|
| <b>Technology</b>                | Polyester-based                                      |
| Appearance                       | Yellow   |
| Reinforcement Carrier            | Polyimide  |
| Total Thickness<br>, ASTM D374   | 0.152 mm   |
| <b>Application</b>               | Thermal management,<br>Thermally conductive adhesive |
| Maximum<br>Operating Temperature | -20 to 150°C   |

## FEATURES AND BENEFITS

- Thermal impedance: 0.6°C.in<sup>2</sup> /W @ 50 psi
- Polyester based
- For applications requiring non-silicone conformal coatings
- Designed for silicone-sensitive standard applications
- Excellent dielectric strength and thermal performance

## TYPICAL APPLICATIONS

- Power supplies
- Motor controls
- Power semiconductors

BERGQUIST SIL PAD TSP PPK1300 is a composite of film coated with a polyester resin. The material offers superior thermal performance for your most critical applications with a thermal resistance of 0.2°C-in<sup>2</sup>/W as well as excellent dielectric strength. Polyester-based, thermally conductive insulators from Bergquist provide a complete family of materials for silicone-sensitive applications. Poly-Pads are ideally suited for applications requiring conformal coatings or applications where silicone contamination is a concern (telecomm and certain aerospace applications). Poly-Pads are constructed with ceramic-filled polyester resins coating either side of a fiberglass carrier or a film carrier. The Poly-Pad® family offers a complete range of performance characteristics to match individual applications.

## TYPICAL PROPERTIES

### Physical Properties

|                                     |     |
|-------------------------------------|-----|
| Hardness, Shore A                   | 90  |
| Breaking Strength, ASTM D1458, KN/m | 5   |
| Elongation, ASTM D412, %            | 40  |
| Flammability, UL 94                 | V-0 |

|                             |       |         |
|-----------------------------|-------|---------|
| Tensile Strength, ASTM D412 | Mpa   | 34      |
|                             | (psi) | (5,000) |

## Electrical Properties

|   |                    |
|---|--------------------|
| Dielectric Breakdown Voltage , ASTM D149, VAC | 6,000              |
| Volume Resistivity, ASTM D257, ohm-meter      | 1×10 <sup>12</sup> |
| Dielectric Constant                           |                    |

## Thermal Properties

|   |     |
|---|-----|
| Thermal Conductivity , ASTM D5470, W/(m-K) <sup>(1)</sup> | 1.3 |
|---|-----|

## Thermal Performance vs. Pressure

TO-220 Thermal Performance, °C/W:

|           |      |
|-----------|------|
| @ 10 psi  | 3.76 |
| @ 25 psi  | 3.35 |
| @ 50 psi  | 2.75 |
| @ 100 psi | 2.3  |
| @ 200 psi | 2.03 |

Thermal Impedance, °C-in<sup>2</sup>/W:

|           |      |
|-----------|------|
| @ 10 psi  | 1.04 |
| @ 25 psi  | 0.8  |
| @ 50 psi  | 0.6  |
| @ 100 psi | 0.43 |
| @ 200 psi | 0.3  |

<sup>(1)</sup>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).

## CONFIGURATIONS AVAILABLE

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

## 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.



**Conversions**

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

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