



# SIL PAD TSP 1600

Known as SIL-PAD 800  
November 2018

## PRODUCT DESCRIPTION

High Performance Insulator for Low-Pressure Applications.

Technology	Silicone
Appearance	Gold
Reinforcement Carrier	Fibreglass
Total Thickness , ASTM D374	0.127 mm
Application	Thermal management, Thermally conductive adhesive
Operating Temperature Range	-60 to 180°C

## FEATURES AND BENEFITS

- Thermal impedance: 0.45°C-in<sup>2</sup>/W @ 50 psi
- High value material
- Smooth and highly compliant surface
- Electrically isolating

## TYPICAL APPLICATIONS

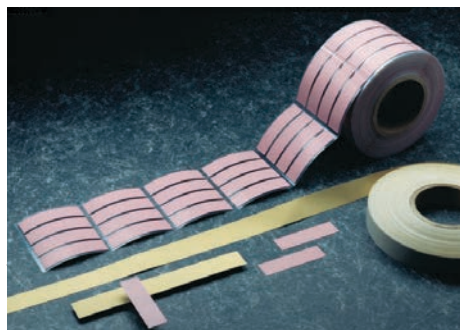
- Power supplies
- Automotive electronics
- Motor controls
- Power semiconductors

SIL PAD TSP 1600 family of thermally conductive insulation materials is designed for applications requiring high thermal performance and electrical isolation. These applications also typically have low mounting pressures for component clamping.

SIL PAD TSP 1600 material combines a smooth and highly compliant surface characteristic with high thermal conductivity. These features optimize the thermal resistance properties at low pressure.

Applications requiring low component clamping forces include discrete semiconductors (TO-220, TO-247 and TO-218) mounted with spring clips. Spring clips assist with quick assembly but apply a limited amount of force to the semiconductor.

The smooth surface texture of SIL PAD TSP 1600 minimizes interfacial thermal resistance and maximizes thermal performance.



## TYPICAL PROPERTIES

### Physical Properties

Hardness, Shore A, ASTM D2240	91
Elongation , 45° to warp and fill, ASTM D412,%	20
Tensile Strength, ASTM D412, MPa	12
Flammability Rating, UL 94	V-0

### Electrical Properties

Dielectric Breakdown Voltage , ASTM D149, Vac	3,000
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)	1.6
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### Thermal Performance vs. Pressure

TO-220 Thermal Performance, °C/W	
@ 10 psi	3.56
@ 25 psi	3.01
@ 50 psi	2.45
@ 100 psi	2.05
@ 200 psi	1.74

Thermal Impedance, ASTM D5470, °C-in <sup>2</sup> /W <sup>(1)</sup>	
@ 10 psi	0.92
@ 25 psi	0.6
@ 50 psi	0.45
@ 100 psi	0.36
@ 200 psi	0.29

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 HITEK Electronic Materials for assistance and recommendations on specifications for this product.

## CONFIGURATIONS AVAILABLE

SIL PAD TSP 1600 are supplied in:

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



Tests Performed In Accordance with: ASTM E-595, NASA SP-R-0022A

BQ Material Legacy Names	Henkel Material New Names	Post Cure	TML %	CVCN %	WVR %
SP 800	TSP 1600	----	0.15	0.04	0.01
SP 900S	TSP 1600S	----	0.25	0.08	0.03

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## Reference 1

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