

# Sil-Pad<sup>®</sup> K-10

November 2013

#### PRODUCT DESCRIPTION

The High Performance Polyimide-Based Insulator

#### FEATURES AND BENEFITS

- Thermal impedance: 0.41°C-in<sup>2</sup>/W (@50 psi)
- Tough dielectric barrier against cut-through
- High performance film
- Designed to replace ceramic insulators



Sil-Pad<sup>®</sup> K-10 is a high performance insulator. It combines special film with a filled silicone rubber. The result is a product with good cut-through properties and excellent thermal performance.

Sil-Pad<sup>®</sup> K-10 is designed to replace ceramic insulators such as Beryllium Oxide, Boron Nitride and Alumina. Ceramic insulators are expensive and they break easily. Sil-Pad<sup>®</sup> K-10 eliminates breakage and costs much less than ceramics.

Note: To build a part number, visit our website at www.bergquistcompany.com.

TYPICAL PROPERTIES OF SIL-PAD K-10						
PROPERTY	IMPERIAL VALUE		METRIC VALUE		TEST METHOD	
Color	Beige		Beige		Visual	
Reinforcement Carrier	Polyimide		Polyimide			
Thickness (inch) / (mm)	0.006		0.152		ASTM D374	
Hardness (Shore A)	90		90		ASTM D2240	
Breaking Strength (lbs/inch) / (kN/m)	30		5		ASTM D1458	
Elongation (%)	40		40		ASTM D412	
Tensile Strength (psi) / (MPa)	5000		34		ASTM D412	
Continuous Use Temp (°F) / (°C)	-76 to 356		-60 to 180			
ELECTRICAL						
Dielectric Breakdown Voltage (Vac)	6000		6000		ASTM D149	
Dielectric Constant (1000 Hz)	3.7		3.7		ASTM D150	
Volume Resistivity (Ohm-meter)	10 <sup>12</sup>		10 <sup>12</sup>		ASTM D257	
Flame Rating	VTM-O		VTM-O		U.L.94	
THERMAL						
Thermal Conductivity (W/m-K)	1.3		1.3		ASTM D5470	
THERMAL PERFORMANCE vs PRESSURE						
Press	sure (psi)	10	25	50	100	200
TO-220 Thermal Performance (°C/W)		2.35	2.19	2.01	1.87	1.76
Thermal Impedance (°C-in²/W) (1)		0.86	0.56	0.41	0.38	0.33
I) The ASTM D5470 test fixture was used. The reco	rded value inclu	udes interfacial	thermal resis	tance.These v	alues are prov	ided for

 The ASTM D5470 test fixture was used. The recorded value includes interfacial thermal resistance. These values are provided reference only. Actual application performance is directly related to the surface roughness, flatness and pressure applied.

#### **TYPICAL APPLICATIONS INCLUDE**

- Power supplies
- Motor controls
- Power semiconductors

### **CONFIGURATIONS AVAILABLE**

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

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## Disclaimer

#### Note:

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Reference 0.1