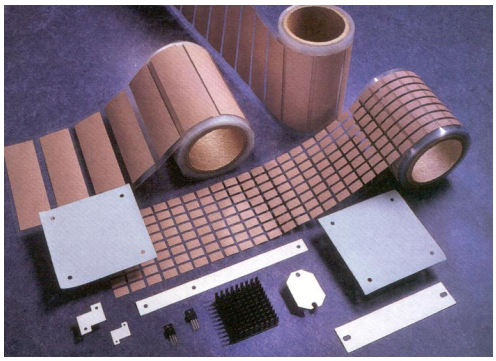
THE BERGQUIST COMPANY

Sil-Pad®2000

High Performance, High Reliability Insulator

Features and Benefits

- Thermal impedance
  0.33°C-in²/W (@50 psi)
- Complies with military standards
- Optimal heat transfer
- High thermal conductivity
  3.5 W/m-K



Sil-Pad 2000 is a high performance thermally conductive insulator. Sil-Pad 2000 material is designed for demanding military / aerospace and commercial applications. In these applications, Sil-Pad 2000 complies with military standards.

Sil-Pad 2000 is a silicone elastomer formulated to maximize the thermal and dielectric performance of the filler/binder matrix. The result is a grease-free, conformable material, capable of meeting or exceeding the thermal and electrical requirements of high reliability electronic packaging applications.

Typical Applications Include

- Military
- Aerospace
- Commercial

MIL SPEC. MIL-M-38527/8A
MIL-M-38527C
MIL-I-49456
UL FILE NUMBER E59150
FSCM NUMBER 55285

Typical Properties of Sil-Pad 2000

Property	Imperial Value	Metric Value	Test Method
Color	White	White	Visual
Reinforcement Carrier	Fiberglass	Fiberglass	***
Thickness, (inch) / (mm)	0.010 to 0.020	0.254 to 0.508	ASTM D374
Hardness, (Shore A)	90	90	ASTM D2240
Continuous Use Temp., (°F) / (°C)	-76 to 392	-60 to 200	***
Electrical	**Imperial Value**	**Metric Value**	**Test Method**
Dielectric Breakdown Voltage, (VAC)	4000	4000	ASTM D149
Dielectric Constant, (1000 Hz)	4.0	4.0	ASTM D150
Volume Resistivity, (Ohm-meter)	10^{11}	10^{11}	ASTM D257
Flame Rating	94 V-O	94 V-O	U.L.
Thermal	**Imperial Value**	**Metric Value**	**Test Method**
Thermal Conductivity, (W/m-K)	3.5	3.5	ASTM D5470

Thermal Impedance vs. Pressure

	Pressure (psi)	10	25	50	100	200
TO-220 Thermal Performance, (°C/W)	0.010"	2.61	2.32	2.02	1.65	1.37
TO-220 Thermal Performance, (°C/W)	0.015"	2.76	2.34	2.01	1.71	1.56
TO-220 Thermal Performance, (°C/W)	0.020"	2.78	2.48	2.21	1.99	1.86
Thermal Impedance, (°C-in²/W) (1)	0.010"	0.57	0.43	0.33	0.25	0.20
Thermal Impedance, (°C-in²/W) (1)	0.015"	0.63	0.48	0.37	0.30	0.24
Thermal Impedance, (°C-in²/W) (1)	0.020"	0.76	0.63	0.55	0.45	0.35

1). The ASTM D5470 (Bergquist Modified) test fixture was used. The recorded value includes interfacial thermal resistance. These values are given to the customer for reference only. Actual application performance is directly related to the surface roughness, flatness and pressure applied.

OUTGASSING DATA FOR SPACECRAFT MATERIALS

Post Cure Conditions	% TML (1.0% Maximum Acceptable)	%CVCM (0.1% Maximum Acceptable)
24 hrs. @ 175°C	0.07	0.03
No Post Cure	0.26	0.10

Configurations

Available:
- Sheet form
- Die-Cut parts
- With or without pressure sensitive adhesive
- Variety of thickness gages to meet customer requirements
  Preferred thickness includes 0.010", 0.015", 0.020"

We produce thousands of specials. Tooling charges vary depending on tolerances and complexity of the part.

Sil-Pad®: U.S. Patents 4,574,879; 4,602,125; 4,602,678; 4,685,987; 4,842,911 and others

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