Sil-Pad® 400

The Original Sil-Pad Material

Features and Benefits

- Thermal impedance: 1.13°C-in²/W (@50 psi)
- Original Sil-Pad material
- Excellent mechanical and physical characteristics
- Flame retardant

Sil-Pad 400 is a composite of silicone rubber and fiberglass. The material is flame retardant and is specially formulated for use as a thermally conductive insulator. The primary use for Sil-Pad 400 is to electrically isolate power sources from heat sinks.

Sil-Pad 400 has excellent mechanical and physical characteristics. Surfaces are pliable and allow complete surface contact with excellent heat dissipation. Sil-Pad 400 actually improves its thermal resistance with age. The reinforcing fiberglass provides excellent cut-through resistance. In addition, Sil-Pad 400 is non-toxic and resists damage from cleaning agents.

TYPICAL PROPERTIES OF SIL-PAD 400

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	Gray	Gray	Visual
Reinforcement Carrier	Fiberglass	Fiberglass	—
Thickness (inch) / (mm)	0.007, 0.009	0.178, 0.229	ASTM D374
Hardness (Shore A)	85	85	ASTM D2240
Breaking Strength (lbs/inch) / (kN/m)	30	5	ASTM D1458
Elongation (%45° to Warp and Fill)	54	54	ASTM D412
Tensile Strength (psi) / (MPa)	3000	20	ASTM D412
Continuous Use Temp (°F) / (°C)	-76 to 356	-60 to 180	—
ELECTRICAL			
Dielectric Breakdown Voltage (Vac)	3500, 4500	3500, 4500	ASTM D149
Dielectric Constant (1000 Hz)	5.5	5.5	ASTM D150
Volume Resistivity (Ohm-meter)	10^{11}	10^{11}	ASTM D257
Flame Rating	V-O	V-O	U.L. 94
THERMAL			
Thermal Conductivity (W/m-K)	0.9	0.9	ASTM D5470

THERMAL PERFORMANCE vs PRESSURE

Pressure (psi)	10	25	50	100	200
TO-220 Thermal Performance (°C/W) 0.007"	6.62	5.93	5.14	4.38	3.61
TO-220 Thermal Performance (°C/W) 0.009"	8.51	7.62	6.61	5.63	4.64
Thermal Impedance (°C-in²/W) 0.007" (1)	1.82	1.42	1.13	0.82	0.54
Thermal Impedance (°C-in²/W) 0.009" (1)	2.34	1.83	1.45	1.05	0.69

1) The ASTM D5470 (Bergquist modified) 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.

Typical Applications Include:

- Power supplies
- Power semiconductors
- Military Specifications:
  - MIL-M-38527/8A
  - MIL-M-38527C
  - MIL-I-49456
  - MIL-M-87111
- Automotive electronics
- U.L. File Number E59150
- Motor controls
- FSCM Number 55285

Configurations Available:

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

Building a Part Number

SP400 – 0.007 – AC – 12/250 – NA

Section A: SP400 = Sil-Pad 400 Material

Section B: 0.007 = Standard thicknesses available: 0.007", 0.009"

Section C: AC = Adhesive on one side, 00 = no adhesive

Section D: ____ = Standard configuration dash number, 1212 = 12" x 12" sheets, 12/250 = 12" x 250' rolls, or 00 = custom configuration

Section E: NA = Selected standard option. If not selecting a standard option, insert company name, drawing number, and revision level.

Standard Options

example

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

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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