

Fujipoly Product Technical Information

SARCON[®] SPG-50A

Highly Thermal Conductive, Electricity Insulative, Low Viscosity type Silicone Compound

1.Features;

Sarcon[®] SPG-50A is highly conformable/thermally conductive, low viscosity silicone compound. It provides a thermal solution for the recent trends of higher frequencies and integration in the development of electronic devices. **Sarcon[®] SPG-50A** easily forms and adheres to most of surfaces, shapes, and sizes of components. **Sarcon[®] SPG-50A** makes complete and reliable physical contact with the component and opposing surfaces. It provides handling properties that are superior to thermal grease & potting materials.

- 1) Suitable for filling the delicate gaps and still provide superior thermal transfer.
- 2) Highly conformable with very low compression forces.
- 3) Has excellent vibration absorption capabilities.
- 4) Maintains thermal properties across a wide temperature range.
- 5) Can be used to "Form-In-Place" and will remain form stable.
- 6) Requires no heat curing.
- 7) Will not cause corrosion on any metal surface.

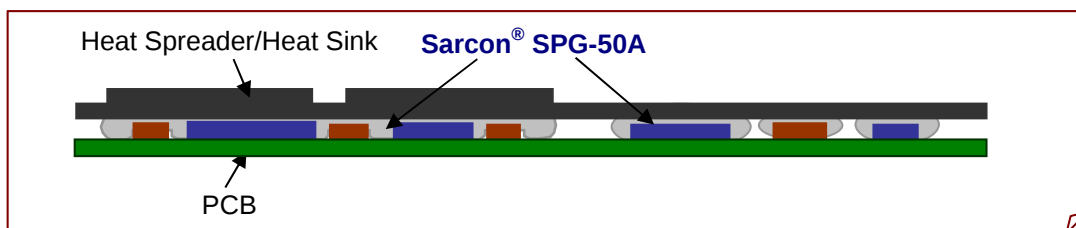
2.Recommended application

Thermal transfer from heat-generating device to heat spreader or heat sink

3.Description

Material Code	Construction
Sarcon[®] SPG-50A	Low Viscosity type Silicone compound

Packaging: Tubes or Syringes



4.Typical Properties

4-1.Typical Material Properties

Item	Unit	SPG-50A	Test method
Specific Gravity	-	3.2	JIS K 6220/(ASTM D792)
Viscosity	Pa·s	5,000	Fujipoly test method ^{*1}
		19,300	Fujipoly test method ^{*2}
Thermal Conductivity	(Watt/m·K)	5.0	Hot Disk method

^{*1}: Accurate Rotary Viscometer (RV1) Shearing Speed:1(1/S)

^{*2}: Accurate Rotary Viscometer (RV1) Shearing Speed:0.1(1/S)

4-2. Typical Product Properties

Item	Unit	SPG-50A	Test method
Operating Temperature Range	°C	-40 ~ +150	-
Thermal Resistance	°C·cm ² /W	1.8	ASTM D5470 equivalent ^{*3}

^{*3}: Contact Surface: 3.14 cm², (0.49 inch²) Filled material's weight: 1.0g for 1.0mm gap

4-3. Typical Durability (Reliability)

Thermal resistance under Heat, Cold, Humid and Thermal Shock conditions.

+70°C Aging

120°C Aging

Gaps	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs	Gaps	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs
1.0mm	1.7	1.7	1.7	1.7	1.7	1.0mm	1.7	1.8	1.7	1.7	1.7

+150°C Aging

-40°C Aging

Gaps	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs	Gaps	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs
1.0mm	1.7	1.7	1.8	1.8	1.8	1.0mm	1.8	1.8	1.9	1.9	1.9

+60°C 95%RH Aging

-40°C⇄+125°C Heat Shock

Gaps	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs	Gaps	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs
1.0mm	1.8	1.8	1.8	1.8	1.7	1.0mm	1.8	1.7	1.8	1.7	1.7

Remark: ^{*}Unit of Thermal Resistance: °C·inch²/W based on ASTM D5470 equivalent method

^{*}Contact Surface: 3.14 cm², (0.49 inch²)

^{*}Filled material's weight: 1.0g for 1.0mm gap

Viscosity under Heat, Cold, Humid and Thermal Shock conditions.

Test Conditions	Unit	Initial	100 hrs	250 hrs	500 hrs	1,000 hrs
+70°C Aging	Pa·s ^{*5}	19,300	19,100	20,500	20,000	20,400
+120°C Aging		19,300	19,800	19,100	19,500	19,400
+150°C Aging		19,300	18,800	21,400	18,700	24,000
-40°C Aging		19,300	20,000	20,600	19,200	19,500
+60°C95%RH Aging		19,300	19,600	21,700	19,300	19,700
-40°C⇄+125°C Heat Shock		19,300	19,700	22,800	19,200	20,100

^{*5}: Accurate Rotary Viscometer (RV1)

Notes:

- Some silicone oil may exude from the product according to operating conditions.
- Some low molecular siloxane may vaporize from the product according to operating conditions.
- It is advisable to use the product under recommended operating condition. Some more silicone oil may exude from the product if it was used over the recommended condition.
- It is advisable to use the product under parallel and even compression. Some more silicone oil may exude from the product if it was used under excessive or partial stress.

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