

Fujipoly Data Sheet

SARCON® PG25A series


Extremely Compressible Gap Filler Type

FEATURES

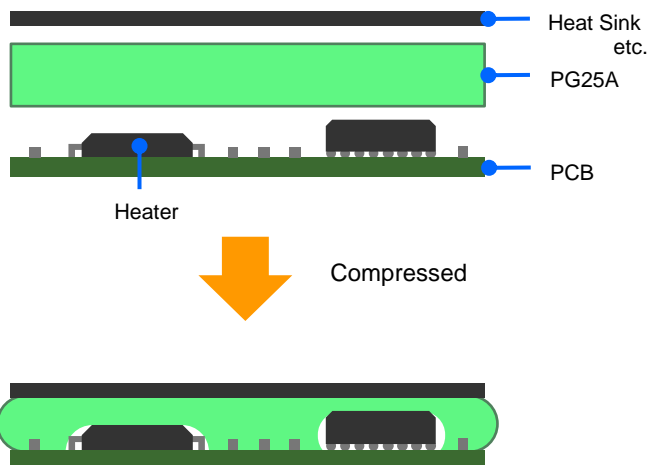
Very Low Modulus, Highly Thermally Conductive and Non-Flammable interface materials.

SARCON® Extremely Compressible Gap Filler Type (Putty Type) is a highly conformable, thermally conductive, non-flammable interface materials. The surface consistency is excellent for filling small air gaps and uneven mating surface, making reliable contact with various shapes and sizes of components.

CONSTRUCTION

| Series | Characteristics | Constructions |
|----------------------|---|--|
| SARCON® PG25A | Silicone compound with double sticky surfaces and Thermal Conductivity of PG25A material is 2.8W/m-K by using Hot Wire (2.5W/m-K by using Hot Disk) |  Plain Type |

RECOMMENDED APPLICATION



PG25A is the lowest modulus type of Putty Type available. Ideally suited for applications requiring low compression force on the component. It offers the high performance that very easily conforms in and around protrusions and depressions on components to make complete, reliable physical contact.

- **Absolute lowest modulus with high adhesion**
- **Easily fills air gaps, uneven surfaces**
- **Lower thermal resistance due to complete surface contact**

THERMAL RESISTANCE

Unit : K-cm²/W (K-in²/W)

| Compression Force | 1.0mmT | 1.5mmT | 2.0mmT | 2.5mmT | 3.0mmT | 3.5mmT | 4.0mmT | 5.0mmT |
|-------------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| 100kPa /14.5psi | 2.7 (0.42) | 3.9 (0.60) | 4.9 (0.76) | 5.8 (0.90) | 6.6 (1.02) | 7.4 (1.15) | 8.2 (1.27) | 10.6 (1.64) |
| 300kPa /43.5psi | 1.9 (0.29) | 2.5 (0.39) | 2.9 (0.45) | 3.4 (0.53) | 3.8 (0.59) | 4.5 (0.70) | 5.0 (0.78) | 6.6 (1.02) |
| 500kPa /72.5psi | 1.5 (0.23) | 2.0 (0.31) | 2.2 (0.34) | 2.6 (0.40) | 3.0 (0.47) | 3.6 (0.56) | 4.1 (0.64) | 5.9 (0.91) |

Test method: Fujipoly Test method, FTM-P3050 by TIM Tester 1300 which is ASTM D5470 equivalent

- Specimen Area; DIA.33.0mm (1.30in)

TYPICAL PROPERTIES

| Properties | | unit | PG25A | | Test method | Specimen | |
|-----------------------|------------------------|-------------------|---|----------------|----------------|--------------------|---|
| Physical Properties | Color | - | Gray | | Visual | - | |
| | Specific Gravity | - | 2.6 | | ASTM D792 | A | |
| Electrical Properties | Volume Resistivity | Ohm-m | 1.0x10 ¹¹ | | ASTM D257 | B | |
| | Breakdown Voltage | kV/mm (volts/mil) | 18 (457) | | ASTM D149 | B | |
| | Dielectric Strength | kV/mm (volts/mil) | 10 (254) | | ASTM D149 | B | |
| | Dielectric Constant | - | 50Hz | 7.21 | | ASTM D150 | A |
| | | | 1kHz | 6.73 | | | |
| | | | 1MHz | 6.25 | | | |
| Dissipation Factor | - | 50Hz | 0.059 | | ASTM D150 | A | |
| | | 1kHz | 0.031 | | | | |
| | | 1MHz | 0.007 | | | | |
| Thermal Properties | Thermal Conductivity | W/m-K | 2.8 by Hot Wire | | ASTM D2326 | - | |
| | | | 2.5 by Hot Disk | | ISO/CD 22007-2 | | |
| | Useful Temperature | °C (°F) | -40 to +150 (-40 to +302) | | - | - | |
| | Low molecular Siloxane | wt% | D ₄ to D ₂₀ Total | 0.0016 or less | | Gas Chromatography | - |
| Flame Retardant | - | V-0 | | UL 94 | - | | |

- Each Specimens are cured for measurement.
- Specimen A: 2mmT
- Specimen B: 120mmW × 120mmL × 1mmT

COMPRESSION FORCEUnit : N/6.4cm² (psi)

| Compression Ratio | 1.0mmT | 1.5mmT | 2.0mmT | 2.5mmT | 3.0mmT | 3.5mmT | 4.0mmT | 5.0mmT |
|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 10% | 94 (14.6) | 57 (8.8) | 42 (6.5) | 34 (5.3) | 31 (4.8) | 27 (4.2) | 24 (3.7) | 16 (2.5) |
| 20% | 153 (23.7) | 93 (14.4) | 78 (12.1) | 63 (9.8) | 58 (9.0) | 53 (8.2) | 47 (7.3) | 35 (5.4) |
| 30% | 241 (37.4) | 155 (24.0) | 127 (19.7) | 108 (16.7) | 98 (15.2) | 90 (14.0) | 84 (13.0) | 66 (10.2) |
| 40% | 368 (57.0) | 248 (38.4) | 202 (31.3) | 173 (26.8) | 158 (24.5) | 146 (22.6) | 137 (21.2) | 110 (17.1) |
| 50% | 533 (82.6) | 385 (59.7) | 306 (47.4) | 268 (41.5) | 243 (37.7) | 228 (35.3) | 211 (32.7) | 140 (21.7) |
| Sustain 50% | 212 (32.9) | 149 (23.1) | 118 (18.3) | 106 (16.4) | 99 (15.3) | 95 (14.7) | 88 (13.6) | 58 (9.0) |

Test method: Measured by ASTM D575-91 for reference

- Specimen Area; DIA.28.6mm (1.13in)
- Platen Area; DIA. 28.6 (1.13in)
- Sustain 50%: Sustain 50% at 1 minute later
- Compression Velocity; 5.0mm/minute

DURABILITYUnit : K-cm²/W

| Test Property | Unit | 70°C | | 150°C | |
|----------------------|---------|---------|----------------|---------|----------------|
| | | Initial | After 1,000hrs | Initial | After 1,000hrs |
| Specific Gravity | - | 2.6 | 2.6 | 2.6 | 2.7 |
| Hardness | ASKER C | 9 | 17 | 9 | 44 |
| Breakdown Voltage | kV/mm | 18 | 17 | 18 | 21 |
| Thermal conductivity | W/m-K | 2.5 | 2.5 | 2.5 | 2.5 |

| Test Property | Unit | 60°C/95%RH | | -40°C | |
|----------------------|---------|------------|----------------|---------|----------------|
| | | Initial | After 1,000hrs | Initial | After 1,000hrs |
| Specific Gravity | - | 2.6 | 2.6 | 2.6 | 2.6 |
| Hardness | ASKER C | 9 | 17 | 9 | 9 |
| Breakdown Voltage | kV/mm | 18 | 17 | 18 | 16 |
| Thermal conductivity | W/m-K | 2.5 | 2.5 | 2.5 | 2.5 |

- Test methods of Thermal Conductivity base on Fujipoly Test Method, FTM P-1612 by Hot Disk.

DURABILITYUnit : K-cm²/W

| Test Property | Unit | -40°C(30min)↔+125°C(30min) | |
|----------------------|---------|----------------------------|----------------|
| | | Initial | After 1,000hrs |
| Specific Gravity | - | 2.6 | 2.6 |
| Hardness | ASKER C | 9 | 48 |
| Breakdown Voltage | kV/mm | 18 | 19 |
| Thermal conductivity | W/m-K | 2.5 | 2.5 |

reduced temperature

-40°C = -40°F

125°C = 257°F

60°C = 140°F

150°C = 302°F

70°C = 158°F

- Test methods of Thermal Conductivity base on Fujipoly Test Method, FTM P-1612 by Hot Disk.

TYPES AND CONFIGURATION

| Series | Product Name | Thickness | Sheet Size |
|---------------|----------------|----------------|--|
| SARCON® PG25A | PG25A-00-100GY | 1.0mm ± 0.15mm | 300mm × 200mm (Recommended Usable Size:290mm×190mm) |
| | PG25A-00-150GY | 1.5mm ± 0.20mm | |
| | PG25A-00-200GY | 2.0mm ± 0.30mm | |
| | PG25A-00-250GY | 2.5mm ± 0.30mm | |
| | PG25A-00-300GY | 3.0mm ± 0.30mm | |
| | PG25A-00-350GY | 3.5mm ± 0.35mm | |
| | PG25A-00-400GY | 4.0mm ± 0.40mm | |
| | PG25A-00-450GY | 4.5mm ± 0.45mm | |
| | PG25A-00-500GY | 5.0mm ± 0.50mm | |

HANDLING NOTES

- It is recommended to use the material in up to 30% of compression ratio. Using the material beyond the recommended compression rate may result in excessive silicone oil exudation.
- It is recommended to compress the material with the equal ratio on the whole surface. Partial excessive stress may also result in excessive silicone oil exudation.

WARRANTY STATEMENT

- Fujipoly has been utilizing Hot Disk method and TIM Tester method since Fujipoly defined them as Fujipoly standard.
- Properties of the products may be revised due to some changes for improving performance.
- Properties values in this document are not specification or guaranteed.
- This product is made of silicone, and silicone oil may exude from the product.
- This product is made of silicone, and low molecular siloxane may vaporize depending on operating conditions.
- The product is designed, developed, and manufactured for general industrial use only. Never use for medical, surgical, and/or relating purposes. Never use for the purpose of implantation and/or other purposes by which a part of or whole product remains in human body.
- Before using, a safety must be evaluated and verified by the purchaser.
- Contents described in the document do not guarantee the performances and qualities required for the purchaser's specific purposes. The purchaser is responsible for pre-testing the product under the purchaser's specific conditions and for verifying the expected performances.
- Statements concerning possible or suggested uses made herein may not be relied upon, or be constructed, as a guaranty of no patent infringement.
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