

Fujipoly Data Sheet

SARCON® GR25A series

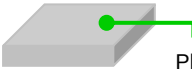
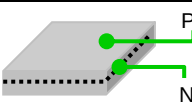
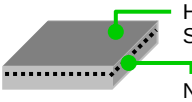
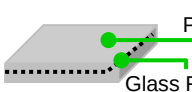
Gap Filler Type

FEATURES

Highly Conformable, Non-Flammable, Isolation and High Heat Conducting Gel materials.

- Gap filler materials are supplied in a fully cured state and remain pliable, easy conforming to minute surface irregularities.
- The basic Gap Filler Pad series can be further enhanced for special handling and die-cutting requirements.

CONSTRUCTIONS

Series	Characteristics	Constructions
SARCON® GR25A-00	Silicone compound with double sticky surfaces and Thermal Conductivity of GR25A material is 2.8W/m-K by using Hot Wire (2.5W/m-K by using Hot Disk)	 Plain Type
SARCON® GR25A-0H	Silicone compound as above GR25A-00 plus additional hardening of the top surface to facilitate handling and installation during complex assemblies	 Hardened Surface
SARCON® GR25A-F0	Silicone compound with Nylon mesh reinforcement stiffener to prevent stretching	 Plain Type Nylon Mesh
SARCON® GR25A-FH	Silicone compound as above GR25A-F0 plus additional hardening of the top surface to facilitate handling and installation during complex assemblies	 Hardened Surface Nylon Mesh
SARCON® GR25A-G0	Silicone compound with Glass Faiber cloth reinforcement stiffener to prevent stretching (UL94 V-0)	 Plain Type Glass Faiber cloth

THERMAL RESISTANCE

GR25A-00

Unit : K-cm²/W (K-in²/W)

Compression Force	0.5mmT	1.0mmT	1.5mmT	2.0mmT	2.5mmT	3.0mmT	4.0mmT	5.0mmT
100kPa /14.5psi	2.0 (0.31)	3.7 (0.57)	5.1 (0.79)	6.7 (1.03)	7.5 (1.16)	9.2 (1.42)	11.6 (1.79)	13.9 (2.16)
300kPa /43.5psi	1.6 (0.25)	2.8 (0.44)	3.9 (0.61)	5.0 (0.78)	5.6 (0.87)	6.4 (0.99)	7.7 (1.20)	9.3 (1.43)
500kPa /72.5psi	1.5 (0.23)	2.5 (0.39)	3.4 (0.53)	4.2 (0.65)	4.7 (0.73)	5.4 (0.83)	6.5 (1.00)	7.8 (1.21)

GR25A-0H

Compression Force	0.3mmT	0.5mmT	1.0mmT	1.5mmT	2.0mmT	3.0mmT	4.0mmT	5.0mmT
100kPa /14.5psi	2.3 (0.36)	2.5 (0.38)	4.0 (0.62)	6.0 (0.93)	8.1 (1.25)	10.2 (1.59)	13.9 (2.16)	16.0 (2.48)
300kPa /43.5psi	1.8 (0.28)	2.3 (0.36)	3.6 (0.56)	5.1 (0.80)	6.3 (0.97)	8.1 (1.25)	10.8 (1.67)	12.3 (1.91)
500kPa /72.5psi	1.6 (0.24)	2.3 (0.35)	3.5 (0.55)	4.8 (0.74)	5.6 (0.86)	7.0 (1.08)	8.9 (1.38)	10.2 (1.58)

GR25A-F0

/ GR25A-FH

/ GR25A-G0

Compression Force	0.5mmT	1.0mmT	2.0mmT	0.5mmT	1.0mmT	2.0mmT	0.3mmT	0.5mmT	1.0mmT	1.5mmT
100kPa /14.5psi	2.7 (0.41)	4.6 (0.71)	7.8 (1.21)	2.8 (0.43)	4.7 (0.73)	8.7 (1.34)	1.6 (0.25)	2.5 (0.39)	4.4 (0.68)	6.2 (0.96)
300kPa /43.5psi	2.5 (0.39)	4.1 (0.63)	6.5 (1.01)	2.7 (0.41)	4.5 (0.69)	7.4 (1.14)	1.5 (0.23)	2.4 (0.37)	4.0 (0.61)	5.3 (0.82)
500kPa /72.5psi	2.5 (0.38)	3.7 (0.58)	5.9 (0.92)	2.6 (0.40)	4.2 (0.66)	6.6 (1.02)	1.4 (0.22)	2.3 (0.35)	3.5 (0.55)	4.2 (0.65)

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	GR25A-00		Test method	Specimen
Physical Properties	Color	-	Gray	Visual	-
	Specific Gravity	-	2.6	ASTM D792	A
	Hardness Highest Value	Shore OO (ASKER C)	50 (18)	ASTM D2240 (ISO 7619)	B
	Tensile Strength	MPa (psi)	0.1 (14.5)	ASTM D412	A
	Elongation	%	200	ASTM D412	A
	Tear Strength	N/mm (ppi)	0.8 (4.6)	ASTM D624	A
Electrical Properties	Volume Resistivity	Ohm-m	1.0×10^{11}	ASTM D257	C
	Breakdown Voltage	kV/mm (volts/mil)	15 (381)	ASTM D149	C
	Dielectric Strength	kV/mm (volts/mil)	9 (229)	ASTM D149	C
	Dielectric Constant	50Hz	6.60	ASTM D150	A
		1kHz	6.05		
		1MHz	5.74		
	Dissipation Factor	50Hz	0.0826	ASTM D150	A
		1kHz	0.0300		
		1MHz	0.0052		
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	0.0028	Gas Chromatography
	Flame Retardant	-	V-0		UL 94

- Specimen A: 2mmT • Specimen B: 30mmW x 50mmL x 12mmT (3mmT x 4pcs) • Specimen C: 120mmW x 120mmL x 1mmT
- Test methods of Thermal Conductivity are based on Fujipoly Test Method, FTM P-1612 by Hot Disk and FTM P-1620 by Hot Wire.

COMPRESSION FORCE**GR25A-00**Unit : N/6.4cm² (psi)

Compression Ratio	0.5mmT	1.0mmT	1.5mmT	2.0mmT	2.5mmT	3.0mmT	4.0mmT	5.0mmT
10%	108 (24.5)	92 (20.8)	83 (18.7)	77 (17.5)	75 (16.9)	70 (15.9)	55 (12.5)	41 (9.3)
20%	252 (57.1)	203 (46.0)	178 (40.4)	156 (35.3)	139 (31.5)	129 (29.2)	113 (25.5)	94 (21.2)
30%	413 (93.6)	342 (77.5)	331 (75.0)	263 (59.6)	230 (52.0)	209 (47.4)	178 (40.3)	153 (233)
40%	583 (132.1)	505 (114.4)	461 (104.4)	408 (92.4)	355 (80.4)	324 (73.4)	258 (58.4)	233 (52.7)
50%	740 (167.7)	675 (152.9)	662 (150.0)	569 (128.9)	515 (116.6)	463 (104.9)	400 (90.6)	370 (83.8)
Sustain 50%	351 (79.5)	337 (76.4)	321 (72.7)	285 (64.6)	283 (64.1)	282 (63.9)	213 (48.2)	188 (42.7)

GR25A-0H

Compression Ratio	0.3mmT	0.5mmT	1.0mmT	1.5mmT	2.0mmT	3.0mmT	4.0mmT	5.0mmT
10%	65 (14.7)	225 (51.0)	209 (47.3)	195 (44.2)	177 (40.1)	96 (21.8)	76 (17.2)	52 (11.8)
20%	173 (39.2)	506 (114.6)	439 (99.5)	371 (84.1)	336 (76.1)	182 (41.2)	143 (32.4)	127 (28.8)
30%	304 (68.9)	762 (172.6)	670 (151.7)	602 (136.4)	521 (118.0)	322 (73.0)	292 (66.2)	239 (54.0)
40%	457 (103.5)	1076 (243.8)	927 (210.0)	848 (192.1)	743 (168.3)	498 (112.8)	430 (97.4)	382 (86.5)
50%	629 (142.5)	1381 (312.9)	1211 (274.3)	1108 (251.0)	1023 (231.8)	723 (163.8)	609 (138.0)	553 (125.2)
Sustain 50%	568 (128.7)	1042 (236.1)	835 (189.2)	727 (164.7)	592 (134.1)	404 (91.5)	386 (87.5)	304 (68.9)

Test method: Measured by ASTM D575-91 for reference

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

GR25A-F0Unit : N/6.4cm² (psi)

Compression Ratio	0.5mmT	1.0mmT	1.5mmT	2.0mmT
10%	128 (29.0)	220 (49.8)	187 (42.4)	142 (32.2)
20%	374 (84.7)	520 (117.8)	454 (102.9)	307 (69.6)
30%	649 (147.0)	811 (183.7)	736 (166.8)	508 (115.1)
40%	928 (210.3)	1133 (256.7)	1022 (231.5)	759 (172.0)
50%	1218 (276.0)	1488 (337.1)	1344 (304.5)	1024 (232.0)
Sustain 50%	1019 (230.9)	928 (210.3)	771 (174.7)	547 (123.9)

GR25A-FH

Compression Ratio	0.5mmT	1.0mmT	1.5mmT	2.0mmT
10%	150 (34.0)	245 (55.5)	215 (48.7)	203 (46.0)
20%	432 (97.9)	588 (133.2)	504 (114.2)	417 (94.5)
30%	739 (167.4)	909 (205.9)	784 (177.6)	676 (153.2)
40%	1037 (234.9)	1255 (284.3)	1109 (251.3)	981 (222.3)
50%	1350 (305.9)	1615 (365.9)	1453 (329.2)	1282 (290.5)
Sustain 50%	1168 (264.6)	1230 (278.7)	1030 (233.4)	751 (170.1)

GR25A-G0

Compression Ratio	0.3mmT	0.5mmT	1.0mmT	1.5mmT
10%	120 (27.2)	146 (33.1)	338 (76.6)	208 (47.1)
20%	308 (69.8)	460 (104.2)	674 (152.7)	494 (111.9)
30%	516 (116.9)	775 (175.6)	947 (214.6)	735 (166.5)
40%	727 (164.7)	1074 (243.3)	1233 (279.4)	1004 (227.5)
50%	1002 (227.0)	1402 (317.6)	1556 (352.5)	1308 (296.3)
Sustain 50%	922 (208.9)	996 (225.7)	885 (200.5)	717 (162.4)

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

DURABILITY

Test Property	Unit	70°C		150°C	
		Initial	After 1,000hrs	Initial	After 1,000hrs
Specific Gravity	-	2.6	2.6	2.6	2.6
Hardness	ASKER C	18	14	18	27
Breakdown Voltage	kV/mm	15	15	15	19
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	18	13	18	17
Breakdown Voltage	kV/mm	15	14	15	15
Thermal Conductivity	W/m-K	2.5	2.5	2.5	2.5

Test Property	Unit	-40°C(30min)↔+125°C(30min)	
		Initial	After 1,000hrs
Specific Gravity	-	2.6	2.6
Hardness	ASKER C	18	15
Breakdown Voltage	kV/mm	15	15
Thermal Conductivity	W/m-K	2.5	2.5

reduced temperature

-40°C = -40°F

60°C = 140°F

70°C = 158°F

125°C = 257°F

150°C = 302°F

- Specimen : GR25A-00 • 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® GR25A-00	GR25A-00-50GY	0.5mm ± 0.05mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR25A-00-100GY	1.0mm ± 0.10mm	
	GR25A-00-150GY	1.5mm ± 0.15mm	
	GR25A-00-200GY	2.0mm ± 0.20mm	
	GR25A-00-250GY	2.5mm ± 0.25mm	
	GR25A-00-300GY	3.0mm ± 0.30mm	
	GR25A-00-350GY	3.5mm ± 0.30mm	
	GR25A-00-400GY	4.0mm ± 0.30mm	
	GR25A-00-450GY	4.5mm ± 0.30mm	
	GR25A-00-500GY	5.0mm ± 0.30mm	
SARCON® GR25A-0H	GR25A-0H2-30GY	0.3mm ± 0.05mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR25A-0H-50GY	0.5mm ± 0.05mm	
	GR25A-0H-100GY	1.0mm ± 0.10mm	
	GR25A-0H-150GY	1.5mm ± 0.15mm	
	GR25A-0H-200GY	2.0mm ± 0.20mm	
	GR25A-0H-250GY	2.5mm ± 0.25mm	
	GR25A-0H-300GY	3.0mm ± 0.30mm	
	GR25A-0H-350GY	3.5mm ± 0.30mm	
	GR25A-0H-400GY	4.0mm ± 0.30mm	
	GR25A-0H-450GY	4.5mm ± 0.30mm	
SARCON® GR25A-F0	GR25A-F0-50GY	0.5mm ± 0.15mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR25A-F0-100GY	1.0mm ± 0.20mm	
	GR25A-F0-150GY	1.5mm ± 0.20mm	
	GR25A-F0-200GY	2.0mm ± 0.30mm	
SARCON® GR25A-FH	GR25A-FH-50GY	0.5mm ± 0.15mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR25A-FH-100GY	1.0mm ± 0.20mm	
	GR25A-FH-150GY	1.5mm ± 0.20mm	
	GR25A-FH-200GY	2.0mm ± 0.30mm	
SARCON® GR25A-G0	GR25A-G0-30GY	0.3mm ± 0.06mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR25A-G0-50GY	0.5mm ± 0.15mm	
	GR25A-G0-100GY	1.0mm ± 0.20mm	
	GR25A-G0-150GY	1.5mm ± 0.20mm	

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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