FUJIPOLY

Fujipoly Data Sheet

SARCON GR80A series

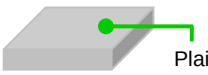
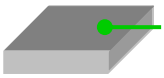
High Performance Gap Filler Type

FEATURES

Highly Conformable and High Heat Conducting gel materials.

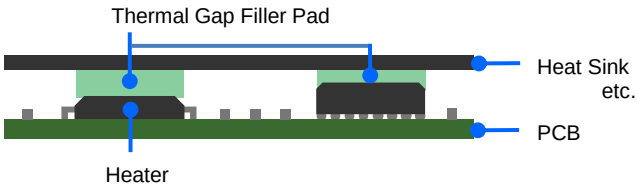
SARCON Thermal Gap Filler Pads are highly conformable and high heat conducting gel materials in a versatile sheet form. They easily fit and adhere to most all shapes and sizes of components, including protrusions and recessed areas.

CONSTRUCTIONS

Series	Characteristics	Constructions
SARCON GR80A-00	Silicone compound with double sticky surfaces and Thermal Conductivity of GR80A-00 material is 13.0W/m-K by using ASTM D5470 modified*1 (8.0W/m-K by using Hot Disk)	 Plain Type
SARCON GR80A-0H	Silicone compound as above GR80A-00 plus additional hardening of the top surface to facilitate handling and installation during complex assemblies	 Hardened Surface

*1) Thermal Conductivity：Measured by using ASTM D5470 modified, refer to Fujipoly Test method FTM P-3030.

RECOMMENDED APPLICATION



In areas where space between surface is uneven or varies and where surface textures are a concern regarding efficient thermal transfer, the supple consistency of Gap Filler Pad is excellent for filling air gaps and uneven surfaces.

THERMAL RESISTANCE

GR80A-00

Unit：K-cm^2/W (K-in^2/W)

Compression Force	1.0mmT	2.0mmT	3.0mmT
100kPa /14.5psi	1.1 (0.17)	2.3 (0.36)	3.7 (0.57)
300kPa /43.5psi	1.0 (0.16)	2.0 (0.31)	3.0 (0.47)
500kPa /72.5psi	0.9 (0.14)	1.6 (0.25)	2.4 (0.37)

GR80A-0H

Compression Force	0.3mmT	0.5mmT
100kPa /14.5psi	0.6 (0.09)	0.8 (0.12)
300kPa /43.5psi	0.5 (0.08)	0.7 (0.11)
500kPa /72.5psi	0.4 (0.06)	0.7 (0.11)

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		GR80A-00	Test method	Specimen
Physical Properties	Color	-		Light Gray	Visual	-
	Specific Gravity	-		3.3	ASTM D792	A
	Hardness Highest Value	Shore OO (ASKER-C)		75 (50)	ASTM D2240 JIS K7312	B
	Tensile Strength	MPa (psi)		0.3 (43.5)	ASTM D412	A
	Elongation	%		50	ASTM D412	A
	Tear Strength	N/mm (ppi)		0.7 (4.0)	ASTM D624	A
Electrical Properties	Volume Resistivity	Ohm-m		$1.0x10^{11}$	ASTM D257	C
	Breakdown Voltage	kV/mm (volts/mil)		15 (381)	ASTM D149	C
	Dielectric Strength	kV/mm (volts/mil)		8 (203)	ASTM D149	C
	Dielectric Constant	-	50Hz	9.54	ASTM D150	A
			1kHz	8.82		
			1MHz	7.92		
	Dissipation Factor	-	50Hz	0.063	ASTM D150	A
			1kHz	0.044		
			1MHz	0.014		
Thermal Properties	Thermal Conductivity	W/m-K		13.0	ASTM D5470*1	-
				8.0	ISO 22007-2	
	Useful Temperature	℃ (°F)		-40 to +150 (-40 to +302)	-	-
	Low molecular Siloxane	wt%		$D_3 \sim D_{10}$ 0.0010 $D_{11} \sim D_{20}$ 0.0010	Gas Chromatography	-
	Flame Retardant	UL94		V-0	UL 94	-

• Specimen A：2mmT Specimen B：60mmW x 120mmL x 20mmT • Specimen C：120mmW × 120mmL × 1mmT

*1) Thermal Conductivity：Measured by using ASTM D5470 modified, refer to Fujipoly Test method FTM P-3030.

COMPRESSION FORCE

GR80A-00

Unit：N/6.4cm^2 (psi)

Compression Ratio	1.0mmT	2.0mmT	3.0mmT
10%	82 (18.6)	60 (13.6)	49 (11.1)
20%	229 (51.9)	183 (41.5)	163 (36.9)
30%	468 (106.0)	379 (85.9)	318 (72.0)
40%	698 (158.1)	608 (137.8)	535 (121.2)
50%	930 (210.7)	794 (179.9)	713 (161.5)
Sustain 50%	389 (88.1)	319 (72.3)	286 (64.8)

GR80A-0H

Compression Ratio	0.3mmT	0.5mmT
10%	68 (15.4)	106 (24.0)
20%	193 (43.7)	312 (70.7)
30%	356 (80.7)	568 (128.7)
40%	510 (115.5)	832 (188.5)
50%	678 (153.6)	1145 (259.4)
Sustain 50%	660 (149.5)	861 (195.1)

Test method：Measured by ASTM D575-91 for reference

• Specimen Area：DIA.28.6mm (1.13in) • Platen Area：DIA. 28.6mm (1.13in) • Sustain 50%：Sustain 50% at 1 minute later

• Compression Velocity：5.0mm/minute

DURABILITY

Test Property	Unit	70℃		150℃	
		Initial	After 1,000hrs	Initial	After 1,000hrs
Specific Gravity	-	3.3	3.3	3.3	3.3
Hardness	Shore OO	75	72	75	92
Volume Resistivity	Ohm-m	$2.4x10^{11}$	$2.8x10^{11}$	$2.4x10^{11}$	$1.8x10^{13}$
Breakdown Voltage	kV/mm	15	14	15	20
Thermal Conductivity	W/m-K	8.0	8.0	8.0	8.0

Test Property	Unit	60℃/90%RH		-40℃/30min⇔125/30min	
		Initial	After 1,000hrs	Initial	After 1,000hrs
Specific Gravity	-	3.3	3.3	3.3	3.3
Hardness	Shore OO	75	80	75	70
Volume Resistivity	Ohm-m	$2.4x10^{11}$	$3.7x10^{11}$	$2.4x10^{11}$	$1.3x10^{12}$
Breakdown Voltage	kV/mm	15	17	15	17
Thermal Conductivity	W/m-K	8.0	8.0	8.0	8.0

Test Property	Unit	-40℃	
		Initial	After 1,000hrs
Specific Gravity	-	3.3	3.3
Hardness	Shore OO	75	70
Volume Resistivity	Ohm-m	$2.4x10^{11}$	$2.6x10^{11}$
Breakdown Voltage	kV/mm	15	15
Thermal Conductivity	W/m-K	8.0	8.0

reduced temperature

-40℃ = -40°F
60℃ = 140°F
70℃ = 158°F
125℃ = 257°F
150℃ = 302°F

•Specimen：GR80A-00 • Thermal Conductivity：Measured by using Hot Disk.

TYPES AND CONFIGURATION

Series	Product Name	Thickness	Sheet Size
SARCON GR80A-00	GR80A-00-100GY	1.0mm ± 0.15mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR80A-00-150GY	1.5mm ± 0.20mm	
	GR80A-00-200GY	2.0mm ± 0.30mm	
	GR80A-00-250GY	2.5mm ± 0.30mm	
	GR80A-00-300GY	3.0mm ± 0.30mm	
SARCON GR80A-0H	GR80A-0H-30GY	0.3mm ± 0.06mm	300mm × 200mm (Recommended Usable Size: 290mm×190mm)
	GR80A-0H-50GY	0.5mm ± 0.10mm	
	GR80A-0H-100GY	1.0mm ± 0.15mm	
	GR80A-0H-150GY	1.5mm ± 0.20mm	
	GR80A-0H-200GY	2.0mm ± 0.30mm	
	GR80A-0H-250GY	2.5mm ± 0.30mm	
	GR80A-0H-300GY	3.0mm ± 0.30mm	

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.
- Fujipoly Test method FTM-P3030 based on ASTM D5470 and ASTM C177 (GHP) method.
- 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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