

## FUJIPOLY Data Sheet

# SARCON GR80B series

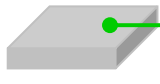
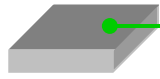
## High Performance Gap Filler Type

### FEATURES

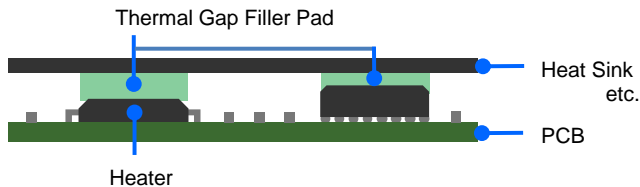
Highly Conformable and High Heat Conducting gel materials.

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 GR80B-00	Silicone compound with double sticky surfaces and Thermal Conductivity of GR80B-00 material is 8.0W/m-K by using Hot Disk.	 Plain Type
SARCON GR80B-0H	Silicone compound as above GR80B-00 plus additional hardening of the top surface to facilitate handling and installation during complex assemblies	 Hardened Surface

### RECOMMENDED APPLICATION



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

### THERMAL RESISTANCE

#### GR80B-00

Unit : K-cm<sup>2</sup>/W (K-in<sup>2</sup>/W)

Compression Force	1.0mmT	2.0mmT	3.0mmT
100kPa /14.5psi	1.11 (0.17)	2.22 (0.34)	3.36 (0.52)
300kPa /43.5psi	0.98 (0.15)	2.00 (0.31)	2.87 (0.44)
500kPa /72.5psi	0.93 (0.14)	1.84 (0.29)	2.59 (0.40)

#### GR80B-0H

Compression Force	0.3mmT	0.5mmT	1.0mmT	2.0mmT	3.0mmT
100kPa /14.5psi	0.58 (0.09)	0.73 (0.11)	1.29 (0.20)	2.32 (0.36)	3.20 (0.50)
300kPa /43.5psi	0.46 (0.07)	0.58 (0.09)	1.09 (0.17)	2.12 (0.33)	2.91 (0.45)
500kPa /72.5psi	0.42 (0.07)	0.55 (0.09)	1.03 (0.16)	2.01 (0.31)	2.72 (0.42)

Test method : Fujipoly Test method, FTM-P3050 by TIM Tester 1400 which is ASTM D5470 equivalent

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

## TYPICAL PROPERTIES

Properties		unit	GR80B-00	Test method	Specimen	
Physical Properties	Color	-	Gray	Visual	-	
	Specific Gravity	-	3.3	ASTM D792	A	
	Hardness Highest Value	Shore OO	67	ASTM D2240	B	
ASKER-C		36	JIS K7312			
Electrical Properties	Volume Resistivity	Ohm-m	$3.0 \times 10^{11}$	ASTM D257	C	
	Breakdown Voltage	kV/mm (volts/mil)	12 (305)	ASTM D149	C	
	Dielectric Strength	kV/mm (volts/mil)	8 (203)	ASTM D149	C	
	Dielectric Constant	-	50Hz	10.5	ASTM D150	A
			1kHz	9.4		
			1MHz	8.6		
	Dissipation Factor	-	50Hz	0.190	ASTM D150	A
1kHz			0.048			
1MHz			0.015			
Thermal Properties	Thermal Conductivity	W/m-K	8.0	ISO 22007-2	-	
	Useful Temperature	°C (°F)	-40 to +150 (-40 to +302)	-	-	
	Low molecular Siloxane	wt%	$D_3 \sim D_{10}$ 0.0010	Gas Chromatography	-	
	Flame Retardant	-	V-0 equivalent	UL 94	-	

• Specimen A : 2mmT    Specimen B : 80mmW x 100mmL x 10mmT (2mmT x 5pcs)    • Specimen C : 120mmW x 120mmL x 1mmT

## COMPRESSION FORCE

### GR80B-00

Unit : N/6.4cm<sup>2</sup> (psi)

Compression Ratio	1.0mmT	2.0mmT	3.0mmT
10%	110 (24.9)	88 (19.9)	75 (17.0)
20%	311 (70.5)	331 (75.0)	325 (73.6)
30%	648 (146.8)	512 (116.0)	626 (141.8)
40%	1055 (239.0)	898 (203.5)	843 (191.0)
50%	1375 (311.5)	1159 (262.6)	1055 (239.0)
Sustain 50%	980 (222.0)	765 (173.3)	576 (130.5)

### GR80B-0H

Compression Ratio	0.3mmT	0.5mmT	1.0mmT	2.0mmT	3.0mmT
10%	90 (20.4)	80 (18.1)	108 (24.5)	124 (28.1)	64 (14.5)
20%	212 (48.0)	284 (64.3)	369 (83.6)	538 (121.9)	220 (49.8)
30%	425 (96.3)	531 (120.3)	768 (174.0)	874 (198.0)	607 (137.5)
40%	629 (142.5)	774 (175.4)	1140 (258.3)	1067 (241.7)	879 (199.1)
50%	805 (182.4)	1046 (237.0)	1519 (344.1)	1309 (296.6)	1020 (231.1)
Sustain 50%	773 (175.1)	986 (223.4)	1190 (269.6)	1005 (227.7)	508 (115.1)

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°C		150°C	
		Initial	After 1,000hrs	Initial	After 1,000hrs
Specific Gravity	-	3.3	3.3	3.3	3.3
Hardness	Shore OO	63	72	63	90
Volume Resistivity	Ohm-m	$3 \times 10^{11}$	$4 \times 10^{12}$	$3 \times 10^{11}$	$9 \times 10^{13}$
Breakdown Voltage	kV/mm	12	14	12	17
Thermal Conductivity	W/m-K	8.1	8.1	8.1	8.2

Test Property	Unit	60°C/95%RH		-40°C/30min↔125/30min	
		Initial	After 1,000hrs	Initial	After 1,000hrs
Specific Gravity	-	3.3	3.3	3.3	3.3
Hardness	Shore OO	63	73	63	75
Volume Resistivity	Ohm-m	$3 \times 10^{11}$	$1 \times 10^{12}$	$3 \times 10^{11}$	$9 \times 10^{12}$
Breakdown Voltage	kV/mm	12	13	12	13
Thermal Conductivity	W/m-K	8.1	8.2	8.1	8.1

Test Property	Unit	-40°C	
		Initial	After 1,000hrs
Specific Gravity	-	3.3	3.3
Hardness	Shore OO	63	65
Volume Resistivity	Ohm-m	$3 \times 10^{11}$	$3 \times 10^{11}$
Breakdown Voltage	kV/mm	12	13
Thermal Conductivity	W/m-K	8.1	8.1

reduced temperature

-40°C = -40°F

60°C = 140°F

70°C = 158°F

125°C = 257°F

150°C = 302°F

•Specimen : GR80B-00

**TYPES AND CONFIGURATION**

Series	Product Name	Thickness	Sheet Size
SARCON GR80B-00	GR80B-00-100GY	1.0mm ± 0.15mm	300mm x 200mm (Recommended Usable Size: 290mm×190mm)
	GR80B-00-150GY	1.5mm ± 0.20mm	
	GR80B-00-200GY	2.0mm ± 0.30mm	
	GR80B-00-250GY	2.5mm ± 0.30mm	
	GR80B-00-300GY	3.0mm ± 0.30mm	
SARCON GR80B-0H	GR80B-0H-30GY	0.3mm ± 0.06mm	300mm x 200mm (Recommended Usable Size: 290mm×190mm)
	GR80B-0H-50GY	0.5mm ± 0.10mm	
	GR80B-0H-100GY	1.0mm ± 0.15mm	
	GR80B-0H-150GY	1.5mm ± 0.20mm	
	GR80B-0H-200GY	2.0mm ± 0.30mm	
	GR80B-0H-250GY	2.5mm ± 0.30mm	
	GR80B-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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