FUJIPOLY

FUJIPOLY Data Sheet

SARCON GR80B series

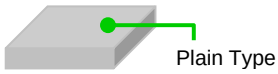
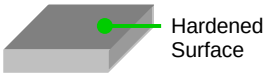
High Performance Gap Filler Type

FEATURES

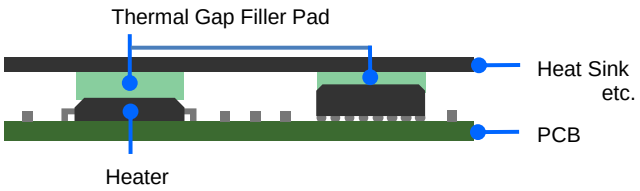
Highly Conformable and High Heat Conducting gel materials.

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 supple consistency of Gap Filler Pad is excellent for filling air gaps and uneven surfaces.

THERMAL RESISTANCE

GR80B-00

Unit：K-cm^2/W (K-in^2/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		$3.0x10^{11}$	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	℃ (°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 × 120mmL × 1mmT

COMPRESSION FORCE

GR80B-00

Unit：N/6.4cm^2 (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℃		150℃	
		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	$3x10^{11}$	$4x10^{12}$	$3x10^{11}$	$9x10^{13}$
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℃/95%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	63	73	63	75
Volume Resistivity	Ohm-m	$3x10^{11}$	$1x10^{12}$	$3x10^{11}$	$9x10^{12}$
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℃	
		Initial	After 1,000hrs
Specific Gravity	-	3.3	3.3
Hardness	Shore OO	63	65
Volume Resistivity	Ohm-m	$3x10^{11}$	$3x10^{11}$
Breakdown Voltage	kV/mm	12	13
Thermal Conductivity	W/m-K	8.1	8.1

reduced temperature
-40℃ = -40°F
60℃ = 140°F
70℃ = 158°F
125℃ = 257°F
150℃ = 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 × 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 × 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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