

## Fujipoly Data Sheet

# SARCON<sup>®</sup> XR-m series


### High Performance Gap Filler Type

### FEATURES

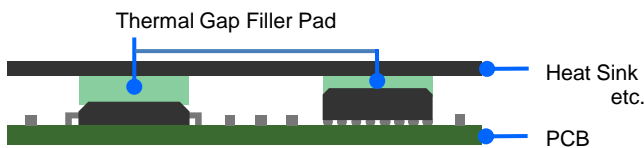
#### **Highly Conformable and High Heat Conducting Gel Materials.**

SARCON<sup>®</sup> 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
<b>SARCON<sup>®</sup> XR-m</b>	Silicone compound with double sticky surfaces and Thermal Conductivity of XR-m material is 17.0W/m-K by using GHP (11.0W/m-K by using Hot Disk)	 Plain Type

### 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

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

Compression Force	0.3mmT	0.5mmT	1.0mmT	1.5mmT	2.0mmT
100kPa(14.5psi)	0.4 (0.07)	0.5 (0.08)	0.9 (0.14)	1.3 (0.20)	1.7 (0.27)
300kPa(43.5psi)	0.3 (0.05)	0.4 (0.06)	0.8 (0.13)	1.1 (0.18)	1.5 (0.23)
500kPa(72.5psi)	0.2 (0.04)	0.4 (0.06)	0.8 (0.12)	1.0 (0.16)	1.4 (0.21)

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	XR-m	Test method	Specimen		
Physical Properties	Color	-	Light Gray	Visual	-	
	Specific Gravity	-	3.2	ASTM D 792	A	
	Hardness Highest Value	Shore OO (ASKER C)	72 (46)	ASTM D2240 (ISO 7619)	B	
	Tensile Strength	MPa (psi)	0.5 (72.5)	ASTM D 412	A	
	Elongation	%	40	ASTM D 412	A	
	Tear Strength	N/mm (ppi)	1.0 (5.7)	ASTM D 624	A	
Electrical Properties	Volume Resistivity	Ohm-m	1.0x10 <sup>11</sup>	ASTM D 257	C	
	Breakdown Voltage	kV/mm (volts/mil)	10 (254)	ASTM D 149	C	
	Dielectric Strength	kV/mm (volts/mil)	7 (178)	ASTM D 149	C	
	Dielectric Constant	-	50Hz	4.8	ASTM D 150	A
			1kHz	4.7		
			1MHz	4.8		
	Dissipation Factor	-	50Hz	0.058	ASTM D 150	A
1kHz			0.003			
1MHz			0.001			
Thermal Properties	Thermal Conductivity	W/m-K	17.0 by GHP	ASTM D 5470	-	
			11.0 by Hot Disk	ISO/CD 22007-2		
	Useful Temperature	°C (°F)	-40 to +150 (-40 to +302)		-	-
	Low molecular Siloxane	wt%	D <sub>4</sub> to D <sub>20</sub> Total	less than 0.0010	Gas Chromatography	-
Flame Retardant	UL94	V-0		UL 94	-	

- Specimen A: 2mmT Specimen B: 60mmW x 120mmL x 20mmT • 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-3030 by GHP (Guarded Hot Plate).

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

Compression Ratio	0.3mmT	0.5mmT	1.0mmT	1.5mmT	2.0mmT
10%	33 (7.5)	94 (21.3)	98 (22.2)	103 (23.3)	112 (25.4)
20%	130 (29.5)	308 (69.8)	329 (74.5)	378 (85.6)	445 (100.8)
30%	255 (57.8)	572 (129.6)	653 (147.9)	816 (184.9)	1032 (233.8)
40%	404 (91.5)	836 (189.4)	1051 (238.1)	1276 (289.1)	1621 (367.3)
50%	579 (131.2)	1099 (249.0)	1471 (333.3)	1784 (404.2)	2200 (498.4)
Sustain 50%	506 (114.6)	875 (198.2)	882 (199.8)	1299 (294.3)	1523 (345.1)

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	-	3.2	3.2	3.2	3.2
Hardness	ASKER C	46	54	46	62
Breakdown Voltage	kV/mm	10	10	10	10
Thermal conductivity	W/m-K	17	17	17	17

Test Property	Unit	60°C/90%RH	
		Initial	After 1,000hrs
Specific Gravity	-	3.2	3.2
Hardness	ASKER C	46	53
Breakdown Voltage	kV/mm	10	9
Thermal conductivity	W/m-K	17	17

reduced temperature

-40°C = -40°F

60°C = 140°F

70°C = 158°F

125°C = 257°F

150°C = 302°F

- Specimen : XR-m
- Test methods of Thermal Conductivity base on Fujipoly Test Method, FTM P-3030 by GHP.

**TYPES AND CONFIGURATION**

Series	Product Name	Thickness	Sheet Size
SARCON® XR-m	30X-m	0.3mm ± 0.06mm	50mm x 50mm
	50X-m	0.5mm ± 0.15mm	300mm x 200mm (Recommended Usable Size: 290mmx190mm)
	100X-m	1.0mm ± 0.20mm	
	150X-m	1.5mm ± 0.20mm	
	200X-m	2.0mm ± 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.
- 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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