

Fujipoly Data Sheet

SARCON[®] XR-j series

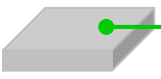

High Performance Gap Filler Type

FEATURES

Highly Conformable and High Heat Conducting gel materials.

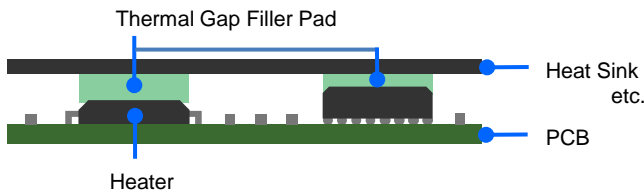
SARCON[®] Thermal Gap Filler Pads are highly conformable and high heat conducting gel materials in a versatile sheet form. They easily fit and adhere to most all shapes and sizes of components, including protrusions and recessed areas.

CONSTRUCTIONS

Series	Characteristics	Constructions
SARCON[®] XR-j	Silicone compound with double sticky surfaces and Thermal Conductivity of XR-j material is 14.0W/m-K by using ASTM D5470 modified* ¹ (9.0W/m-K by using Hot Disk)	 Plain Type
SARCON[®] XR-Hj	Silicone compound as above XR-j 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

XR-j

Unit : K-cm²/W (K-in²/W)

Compression Force	1.0mmT	1.5mmT	2.0mmT
100kPa /14.5psi	1.1 (0.17)	1.6 (0.25)	2.0 (0.31)
300kPa /43.5psi	1.0 (0.16)	1.5 (0.23)	1.7 (0.26)
500kPa /72.5psi	1.0 (0.15)	1.3 (0.19)	1.3 (0.20)

XR-Hj

Compression Force	0.3mmT	0.5mmT	1.0mmT	1.5mmT	2.0mmT
100kPa /14.5psi	0.6 (0.10)	0.8 (0.12)	1.2 (0.19)	1.9 (0.29)	2.3 (0.35)
300kPa /43.5psi	0.6 (0.09)	0.7 (0.10)	1.0 (0.16)	1.6 (0.25)	2.0 (0.31)
500kPa /72.5psi	0.6 (0.09)	0.6 (0.09)	1.0 (0.15)	1.5 (0.23)	1.9 (0.29)

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-j	Test method	Specimen		
Physical Properties	Color	-	Light Gray	Visual	-	
	Specific Gravity	-	3.2	ASTM D792	A	
	Hardness Highest Value	Shore OO	80	ASTM D2240	B	
	Tensile Strength	MPa (psi)	0.2 (29.0)	ASTM D412	A	
	Elongation	%	25	ASTM D412	A	
	Tear Strength	N/mm (ppi)	1.0 (5.7)	ASTM D624	A	
Electrical Properties	Volume Resistivity	Ohm-m	1.0x10 ¹¹	ASTM D257	C	
	Breakdown Voltage	kV/mm (volts/mil)	18 (457)	ASTM D149	C	
	Dielectric Strength	kV/mm (volts/mil)	13 (330)	ASTM D149	C	
	Dielectric Constant	-	50Hz	6.8	ASTM D150	A
			1kHz	6.8		
			1MHz	6.8		
	Dissipation Factor	-	50Hz	0.006	ASTM D150	A
1kHz			0.001			
1MHz			0.001			
Thermal Properties	Thermal Conductivity	W/m-K	14.0 by ASTM D5470	ASTM D5470 ¹	-	
			9.0 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	0.0020 or less	Gas Chromatography	-
Flame Retardant	-	V-0		UL 94	-	

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

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

COMPRESSION FORCE**XR-j**Unit : N/6.4cm² (psi)

Compression Ratio	1.0mmT	1.5mmT	2.0mmT
10%	89 (20.2)	96 (21.8)	105 (23.8)
20%	206 (46.7)	248 (56.2)	280 (63.4)
30%	453 (102.6)	505 (114.4)	549 (124.4)
40%	714 (161.8)	825 (186.9)	923 (209.1)
50%	1095 (248.1)	1213 (274.8)	1346 (305.0)
Sustain 50%	897 (203.2)	945 (214.1)	1011 (229.1)

XR-Hj

Compression Ratio	0.3mmT	0.5mmT	1.0mmT	1.5mmT	2.0mmT
10%	43 (9.7)	110 (24.9)	147 (33.3)	152 (34.4)	174 (39.4)
20%	104 (23.6)	335 (76.0)	474 (107.3)	554 (125.5)	649 (147.0)
30%	195 (44.3)	592 (134.2)	834 (189.0)	935 (211.8)	1047 (237.0)
40%	347 (78.5)	849 (192.3)	1159 (262.6)	1278 (289.5)	1445 (327.4)
50%	501 (113.5)	1091 (274.1)	1468 (332.6)	1637 (370.9)	1864 (422.3)
Sustain 50%	462 (104.7)	898 (203.4)	1109 (251.3)	1124 (254.7)	1263 (286.1)

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	50	64	50	85
Breakdown Voltage	kV/mm	18	19	18	19
Thermal Conductivity	W/m-K	14	14	14	14

Test Property	Unit	60°C/90%RH	
		Initial	After 1,000hrs
Specific Gravity	-	3.2	3.4
Hardness	ASKER C	50	62
Breakdown Voltage	kV/mm	18	17
Thermal Conductivity	W/m-K	14	14

reduced temperature

60°C = 140°F

70°C = 158°F

150°C = 302°F

•Specimen : XR-j • Thermal Conductivity ; Measured by using ASTM D5470 modified, refer to Fujipoly Test method FTM P-3030.

TYPES AND CONFIGURATION

Series	Product Name	Thickness	Sheet Size
SARCON® XR-j	100X-j	1.0mm ± 0.20mm	300mm x 200mm (Recommended Usable Size: 290mmx190mm)
	150X-j	1.5mm ± 0.20mm	
	200X-j	2.0mm ± 0.30mm	
SARCON® XR-Hj	30X-Hj	0.3mm ± 0.06mm	50mm x 50mm
	50X-Hj	0.5mm ± 0.15mm	300mm x 200mm (Recommended Usable Size: 290mmx190mm)
	100X-Hj	1.0mm ± 0.20mm	
	150X-Hj	1.5mm ± 0.20mm	
	200X-Hj	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.
- 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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