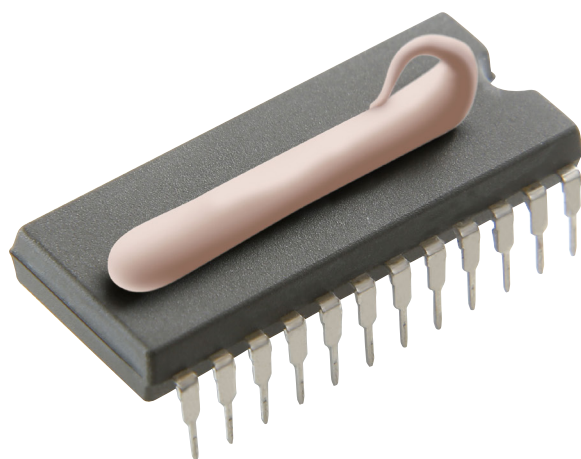


TERMISK LEDENDE MATERIALE



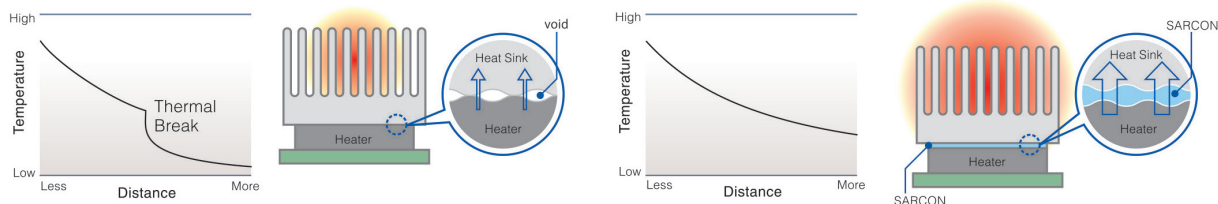
**SARCON®
GENERELT**

THERMALLY CONDUCTIVE / NON- FLAMMABLE SILICONE RUBBER "SARCON®"

Our unique product, SARCON® is an advanced silicone rubber with high thermal conductivity and superior flame retardancy.

FUNCTIONS:

As shown below, even the most highly polished mating surfaces do not make reliable contact surfaces. Complete physical contact is necessary to minimize the resistance to heat flow for the best thermally conductive path. Such surface voids, when properly filled with a conformable, SARCON, will in most cases exhibit the continuous characteristics of a solid metal of the same dimensions.



PATENTS:

No.6,083,853 , No.8,324,313 and others

FLAME RETARDANT:

UL File Number: E58126

APPLICATIONS:

- Thermal conductive insulators for semiconductors
- Compression jointing materials for thermistors and temperature sensors
- Thermal conductive material for all types of heaters

FORMULATIONS/CONFIGURATIONS:

- A variety of specific compounds are available for a wide range of performance requirements in Sheets, Rolls, Die-cuts, Sleeves, Gel, Extrusions, Moldings

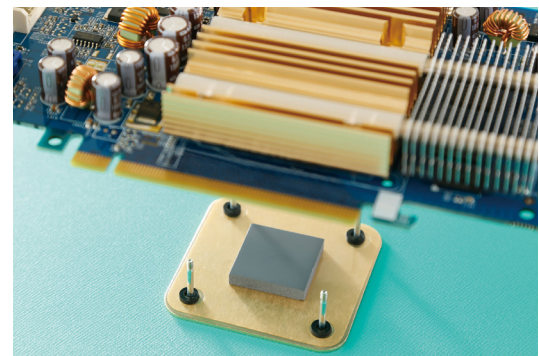
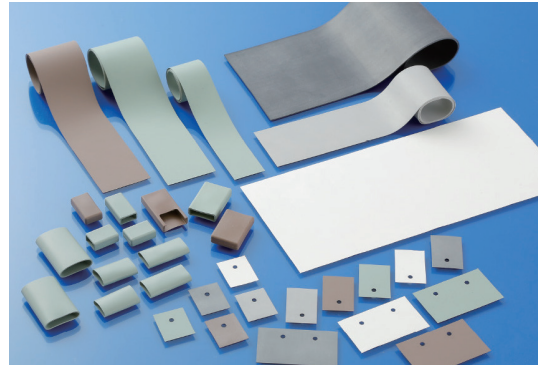
SARCON's versatility in thermal management applications is doubly enhanced by way of the variety of end-use configurations possible, and the many standard material formulations available in each.

The silicone rubber based materials offer other useful elements such as electrical insulation, protective coverings and gasketing as integral features in most designs.

Along with a few simple recommendations to help in obtaining the optimum performance for your application, a few suggestions are included which may help you to take advantage of some of these other features.

More power and light weight. In the past, these two characteristics in electronics were mutually exclusive. Now, micro-electronics are just that, and in addition, need thermal management components to further complement these objectives.

SARCON is an advanced silicone rubber with high thermal conductivity and superior flame-retardancy. By combining the inherent silicone rubber properties of heat resistance, electrical insulation and long-term aging into one compound, this universally applicable material can be made in an unlimited number of thermal management configurations.

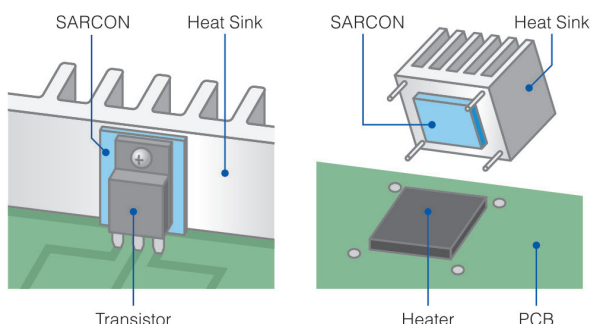


ATTACHMENT:

a.) No special preparations are necessary to attach the SARCON component.
b.) Some of the most common alternatives include:

- Pressure Sensitive Adhesive
- Silicone Adhesive
- Mechanical Clamping
- Hardware Attachment / Screws, rivets
- Self-Adhering Silicone Gel

THERMAL TRANSFER:



- a.) Consider the most efficient SARCON materials regarding thermal conductivity.
b.) Take advantage of the heat transfer characteristics of any nearby sheet metal, heat sink and case components by using the SARCON component as a thermally conductive bridge from Heater to Heat Sink. See drawing at left.
c.) Note also that SARCON is very elastic, providing a very tight fit over uneven surfaces. This eliminates the need for gap-filling agents in order to achieve high rates of thermal dissipation without variation. The sleeves and cases can be designed as an interface fit which can slip snugly over appropriately configured components.

SARCON®

SELECTION GUIDE

SARCON® THERMAL CONDUCTIVITY LIST:

Thermal Conductivity (W/mK)	RUBBER TYPE	GAP FILLER TYPE	EXTREMELY COMPRESSIBLE GAP FILLER TYPE	FORM IN PLACE GAP FILLER TYPE	NON-SILICONE GAP FILLER TYPE	ELECTROMAGNETIC WAVE ABSORPTION TYPE
0.8						EGR-11F (1.0W/mK)*1
0.9	GTR					
1.2	TR					
1.3		GR-ae (1.5W/mK)*1			NR-c (1.5W/mK)*1	
1.4	GHR	GR14A (1.6W/mK)*1				
1.7	HR					
2.1				SPG-20B		
2.2	YR-a					
2.5		GR25A (2.8W/mK)*1	PG25A (2.8W/mK)*1			
2.9	GSR					
3.0	GAR					
3.1				SPG-30B		
4.0	YR-c					
4.5		GR45A (6.0W/mK)*1	PG45A GR-Pm (6.0W/mK)*1			
5.0				SPG-50A		
8.0		GR80A (13.0W/mK)*2	PG80A (13.0W/mK)*2			
11.0		XR-m (17.0W/mK)*2	XR-Um (17.0W/mK)*2			
13.0		GR130A				

Measured by using Hot Disk method, refer to Fujipoly Test method "FTM P-1612". → See P.35
 Rubber Type and *1 : Measured by using Hot Wire method, refer to Fujipoly Test method "FTM P-1620". → See P.35
 *2 : Measured by using ASTM D5470 modified, refer to Fujipoly Test method "FTM P-3030". → See P.36

Test Method: Thermal Conductivity (W/m-K)					
Thin film with high electric isolation	RUBBER TYPE	Hot Wire : 1.2	TR	▶ P. 13-14	
		Hot Wire : 1.7	HR	▶ P. 13-14	
		Hot Wire : 2.2	YR-a	▶ P. 13-14	
		Hot Wire : 4.0	YR-c	▶ P. 13-14	
Thin film with high electric isolation and high mechanical strength	RUBBER TYPE within Glass Fiber Cloth	Hot Wire : 0.9	GTR	▶ P. 13-14	
		Hot Wire : 1.4	GHR	▶ P. 13-14	
		Hot Wire : 2.9	GSR	▶ P. 13-14	
		Hot Wire : 3.0	GAR	▶ P. 13-14	
Thin or middle thickness with wider gap's variation	GAP FILLER TYPE Standard Gap Filler Pads	Hot Wire : 1.5	GR-ae	▶ P. 17-18	
		Hot Disk : 1.3			
		Hot Wire : 1.6	GR14A	▶ P. 17-18	
		Hot Disk : 1.4			
		Hot Wire : 2.8	GR25A	▶ P. 17-18	
		Hot Disk : 2.5			
	Hot Wire : 6.0	GR45A	▶ P. 17-18		
	Hot Disk : 4.5				
Thin or middle thickness with wider gap's variation and low thermal resistance	GAP FILLER TYPE High Performance Gap Filler Pads	ASTM D5470 :13.0	GR80A	▶ P. 17-18	
		Hot Disk : 8.0			
		ASTM D5470 :17.0	XR-m	▶ P. 17-18	
		Hot Disk :11.0			
		Hot Disk :13.0	GR130A	▶ P. 17-18	
For wider gaps with better compressibility	EXTREMELY COMPRESSIBLE GAP FILLER TYPE (PUTTY TYPE) Highly Thermally Conductive and Non-Flammable interface materials	Hot Wire : 2.8	PG25A	▶ P. 19-20	
		Hot Disk : 2.5			
		Hot Disk : 4.5	PG45A	▶ P. 19-20	
		Hot Wire : 6.0			
		Hot Disk : 4.5	GR-Pm	▶ P. 19-20	
		ASTM D5470 :13.0			
		Hot Disk : 8.0	PG80A	▶ P. 19-20	
Minimum thickness with Both-sides sticky Silicone putty pad	EXTREMELY COMPRESSIBLE GAP FILLER TYPE (PUTTY TYPE) Highest Thermally Conductive and Non-Flammable interface materials	ASTM D5470 :17.0	XR-Um	▶ P. 21-22	
		Hot Disk :11.0			
For wider gaps with better compressibility	FORM IN PLACE GAP FILLER TYPE	Hot Disk : 2.1	SPG-20B	▶ P. 23-24	
		Hot Disk : 3.1	SPG-30B	▶ P. 23-24	
		Hot Disk : 5.0	SPG-50A	▶ P. 23-24	
Thin or middle thickness with Non-Silicone Pad	NON-SILICONE GAP FILLER TYPE	Hot Wire : 1.5	NR-c	▶ P. 25	
		Hot Disk : 1.3			
To absorb and damp range of electromagnetic waves	ELECTROMAGNETIC WAVE ABSORPTION TYPE	Hot Wire : 1.0	EGR-11F	▶ P. 26	
		Hot Disk : 0.8			
Minimum thickness (Silicone and Non-Silicone formulations)	GREASE TYPE	ASTM D5470 : 0.75 to 4.2	SG-SL / SG-NS	▶ P. 27	

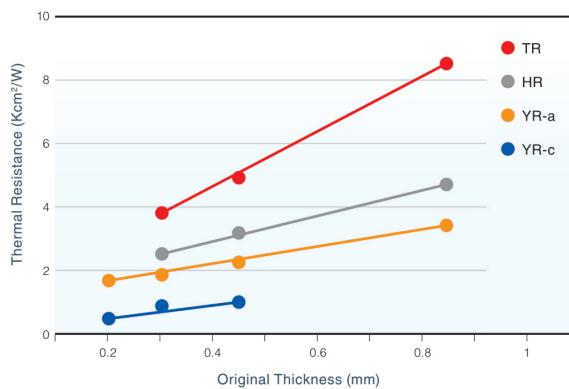
ASTM D5470: Measured by ASTM D5470 modified, refer to Fujipoly Test method "FTM-P3030". → See P.36

THERMAL RESISTANCE DATA

SARCON® THERMAL RESISTANCE DATA

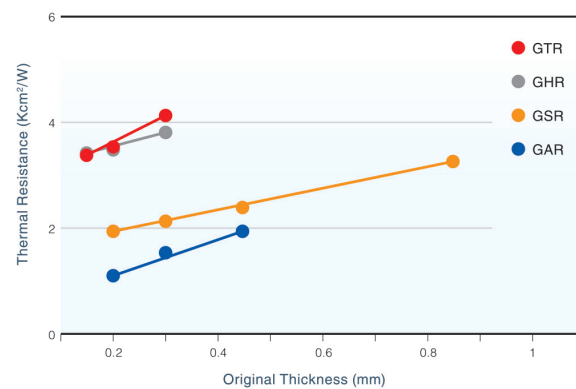
Clamping Torque : 0.69Nm (0.51lbf-ft)
Calculated Pressure : 2.66MPa (385.7psi)

RUBBER TYPE



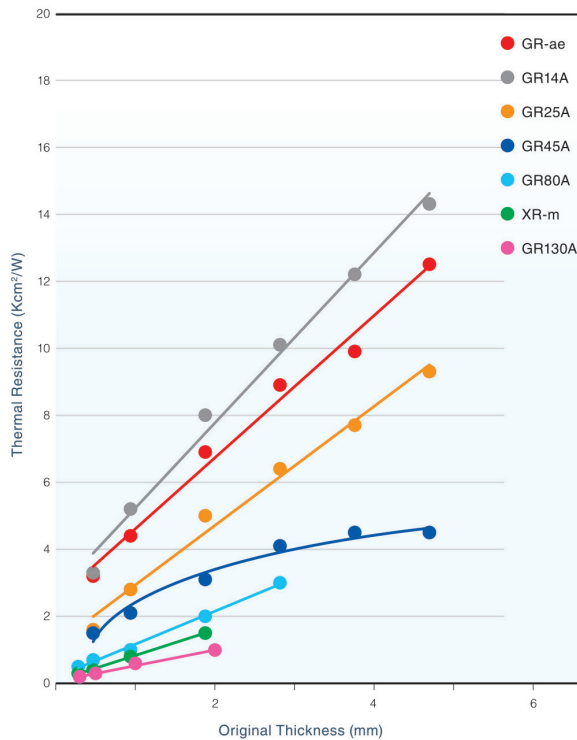
Measured by using Fujiopoly Original (TO-3 package), refer to Fujiopoly Test method "FTM P-3010". → See P.33

RUBBER TYPE within Glass Fiber Cloth



Pressure : 300kPa (43.5psi)

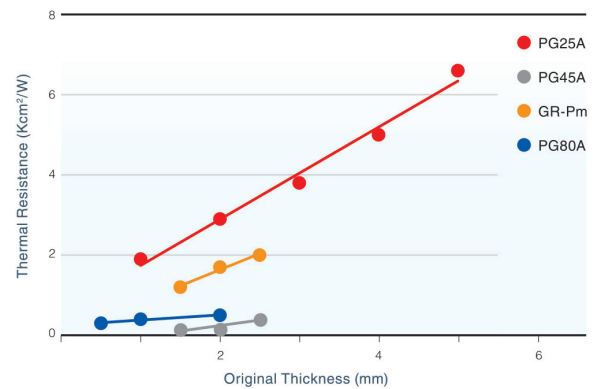
GAP FILLER TYPE



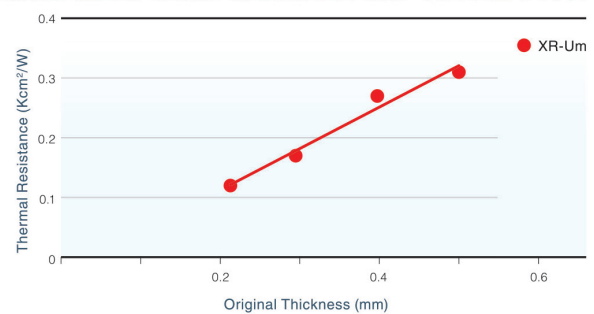
Measured by using ASTM D5470 equivalent (TIM tester 1300), refer to Fujiopoly Test method "FTM P-3050". → See P.36

Original Thickness is the initial thickness of SARCON before pressing.

EXTREMELY COMPRESSIBLE GAP FILLER TYPE

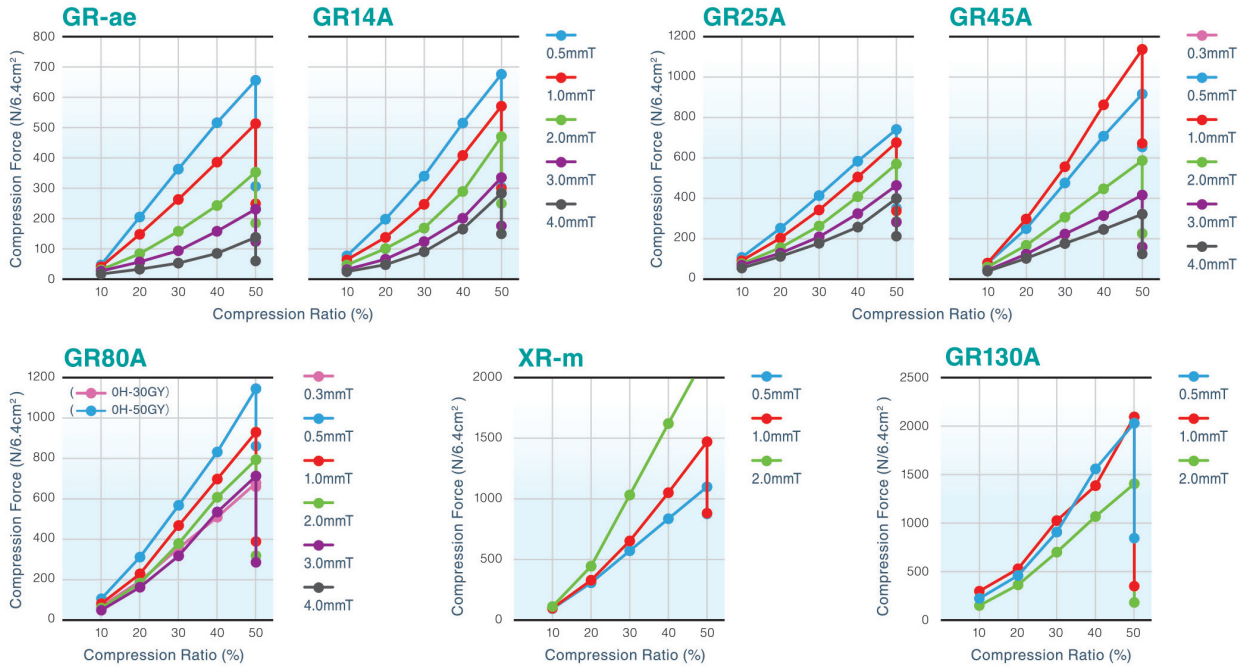


EXTREMELY COMPRESSIBLE GAP FILLER TYPE

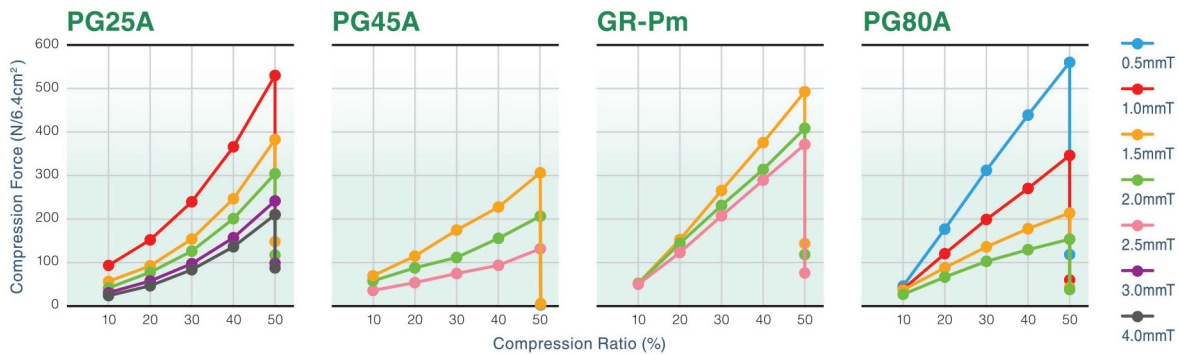


INITIAL COMPRESSION FORCE

GAP FILLER TYPE



EXTREMELY COMPRESSIBLE GAP FILLER TYPE



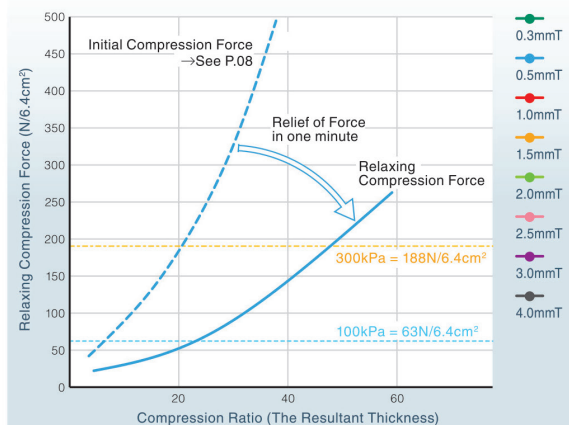
FORM IN PLACE GAP FILLER TYPE



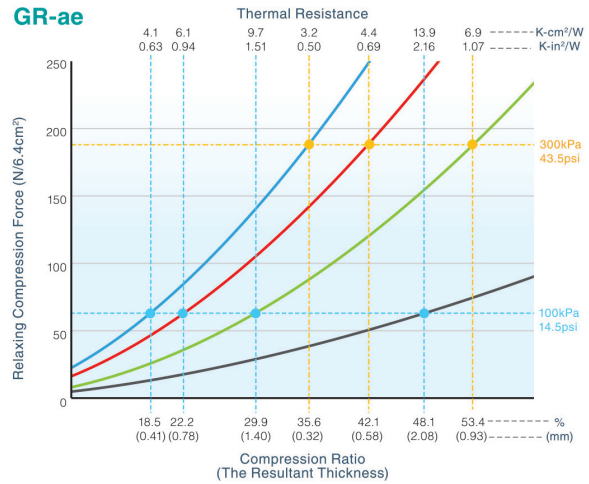
RELAXING COMPRESSION FORCE VERSUS

Relaxing Compression Force : Relief of Compression Force in one minute)

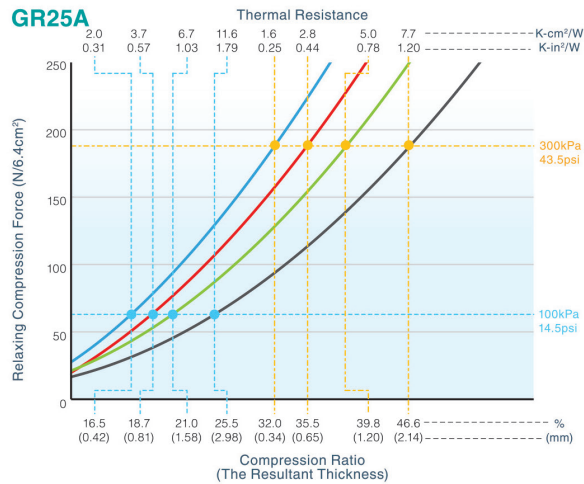
Description of Chart



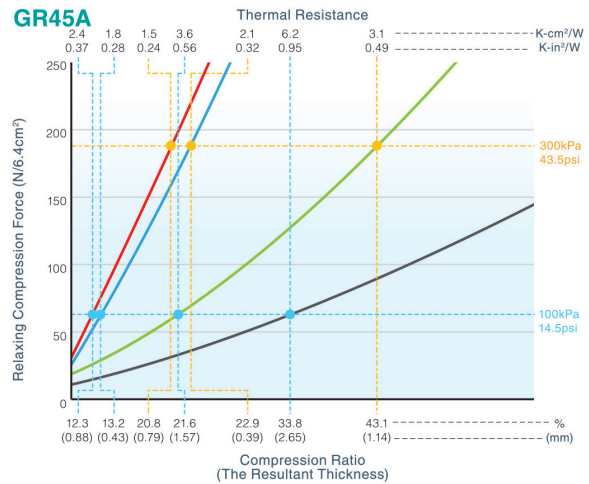
GR-ae



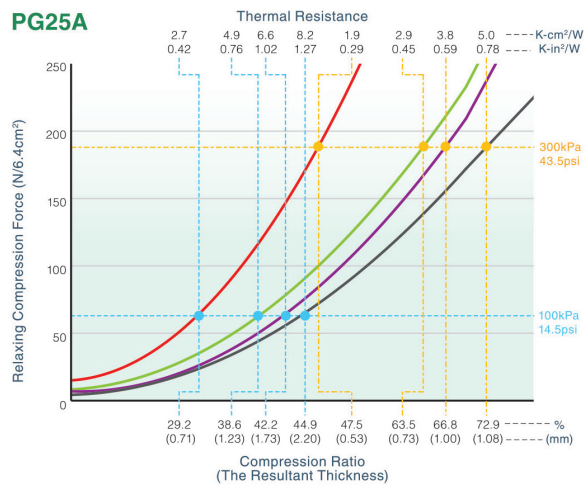
GR25A



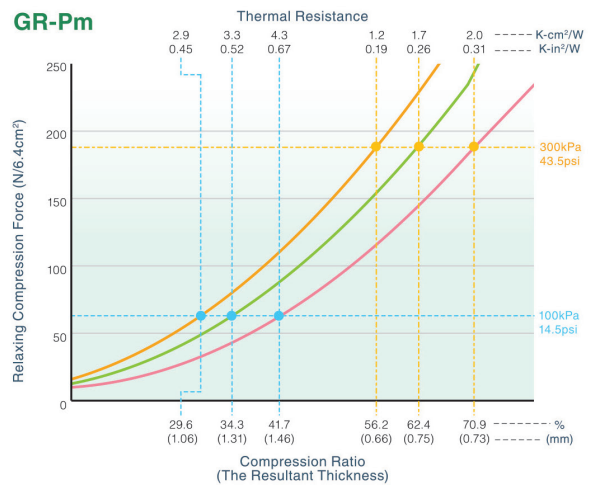
GR45A



PG25A

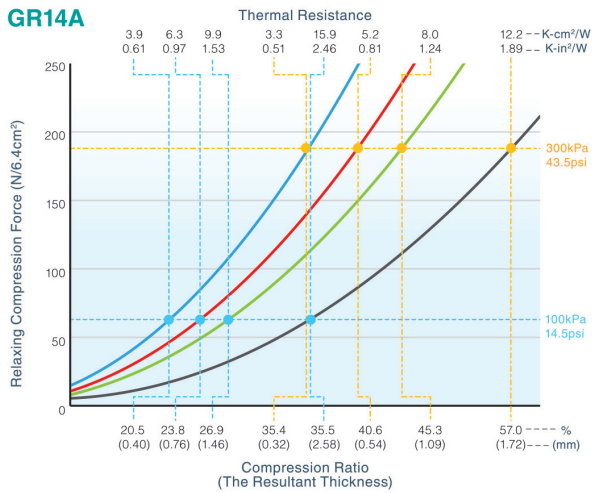


GR-Pm

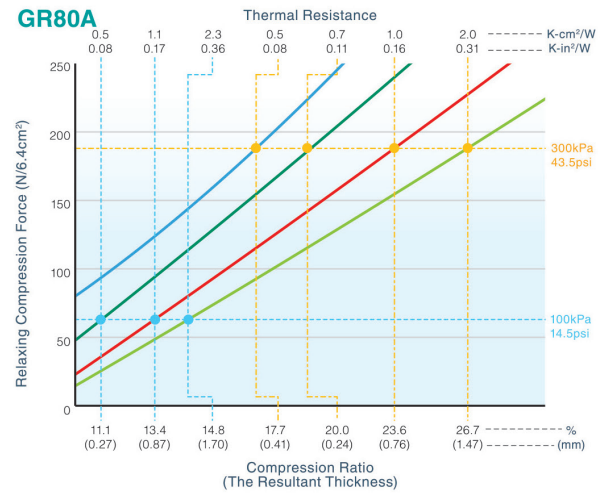


THERMAL RESISTANCE

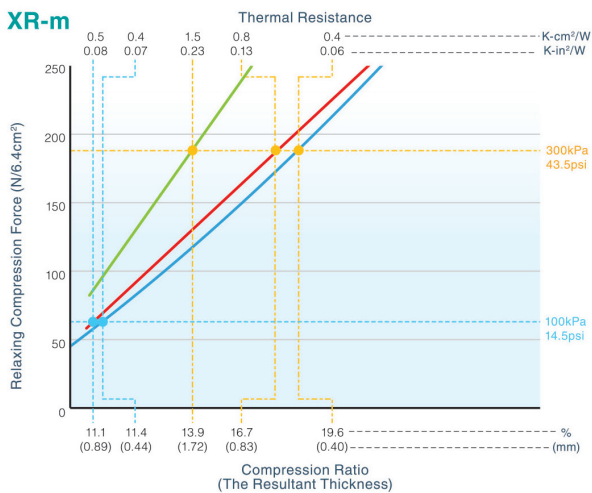
GR14A



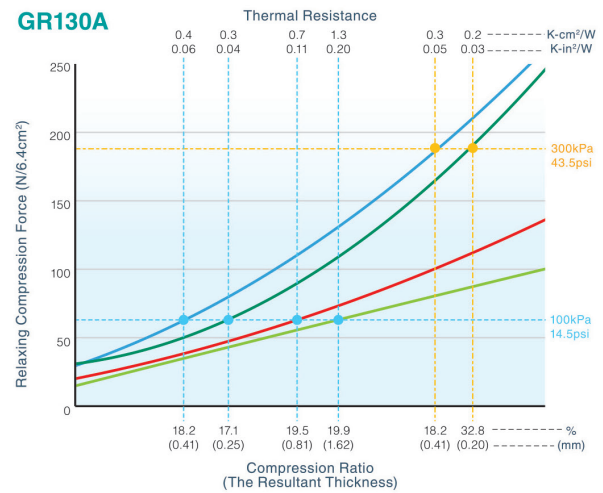
GR80A



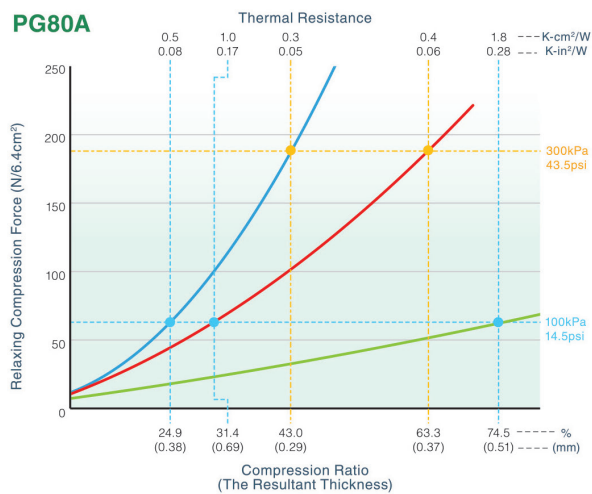
XR-m



GR130A



PG80A



Relaxing Compression Force

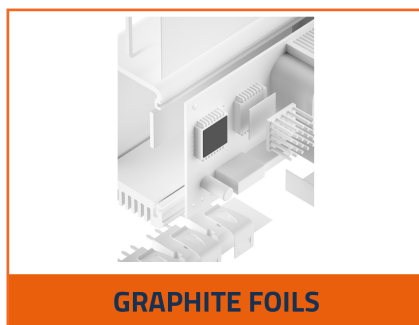
- 0.3mmT
- 0.5mmT
- 1.0mmT
- 1.5mmT
- 2.0mmT
- 2.5mmT
- 3.0mmT
- 3.0mmT
- 4.0mmT

- a) Specimen size:
for Compression Force : Dia. 28.6mm → See P.38
for Thermal Resistance : Dia. 33.0mm → See P.36
- b) The resultant thickness is the gap thickness after relieving of compression force in one minute.
- c) ● : Thermal Resistance at 100kPa by using TIM tester
● : Thermal Resistance at 300kPa by using TIM tester

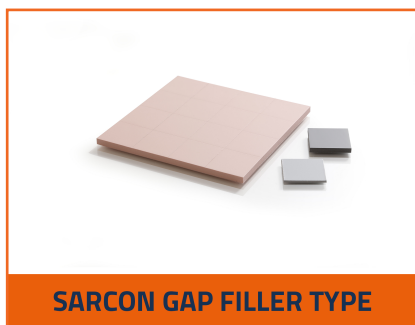


KØLEPROFILER

VORES PRODUKTSORTIMENT INKLUDERER:



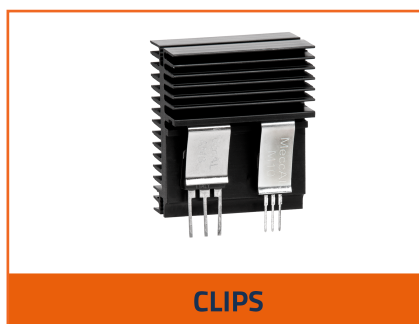
GRAPHITE FOILS



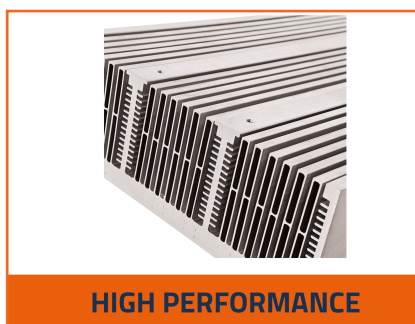
SARCON GAP FILLER TYPE



TERMISK LEDENDE MATERIALE



CLIPS



HIGH PERFORMANCE



KØLEPROFILER

VI FØRER PRODUKTER INDENFOR KATEGORIERNE:



AUTOMATIK



**HVAC & BYGNINGS-
AUTOMATIK**



ELVARME

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