Oil Resistant, Chemical Resistant, Low-hardness Thermal Interface Pads

TC-FORS-2-40 Series

The TC-FORS-2-40 Series is a line of low-hardness thermal interface pads that can stand up to exposure to oils and acidic and alkaline fluids with no significant loss of thermal conductivity.

1 Features

Oil resistance: Products retain thermal conductivity even when used in proximity to engine oil.

Chemical resistance: Products retain thermal conductivity even when used in proximity to acidic and alkaline fluids.

Long-term reliability: Products provide long-term, consistent performance in temperatures ranging from −40°C up to 180°C.

2 Applications

For drawing heat away from electronic components used in automobiles and industrial machinery.

3 General properties

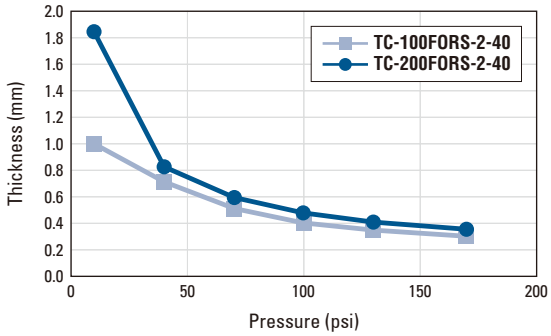
Parameter \ Test Method / Grade			TC-100FORS-2-40	TC-200FORS-2-40
Color		—	Reddish brown	
Structure		—	Single layer sheet (Double-sided adhesive)	
Thickness	mm	—	1.0	2.0
Density at 23°C	g/cm^3	JIS K 6249	3.2	3.2
Hardness Asker C		JIS K 6249	40	40
Continuous Use Temp.	°C	—	−40 to 180	−40 to 180
Volume Resistivity	TΩ·m	JIS K 6249	9.9×10^{11}	9.9×10^{11}
Dielectric Breakdown Voltage In oil	kV	JIS K 6249	19	28
Dielectric Strength	kV	JIS C 2110	16	26
Thermal Conductivity	W/m·K	ISO 22007-2	1.9	1.9
Thermal Resistance 50°C/100 psi	cm^2·K/W	ASTM D5470	2.77	3.50
Flame Retardance UL94		—	V-0 equivalent	V-0 equivalent
Low-molecular-weight Siloxane Content $\Sigma D_{3\text{-}10}$	ppm	Shin-Etsu Method*	< 10	< 10

* Acetone extraction method.

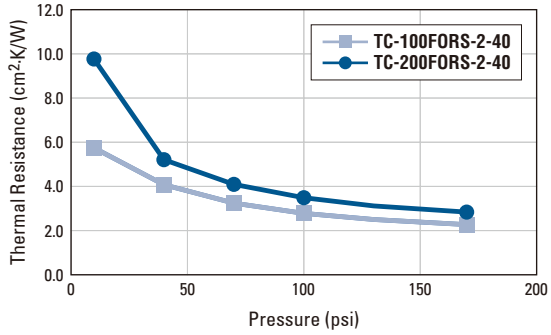
(Not specified values)

Other thickness, Please talk to our sales department

4 Pressure and Thickness



5 Pressure and Thermal Resistance



6 ATF Compatibility Test

Test Method: Physical properties were measured after immersing samples in automatic transmission fluid for a specified period at 150°C.

Sample: TC-200FORS-2-40

Test Results

Immersion Time	h	0	1000
—			
Density at 23°C	cm^3	3.18	3.26
Hardness Asker C		38	59
Thickness	mm	2.00	2.01
Dielectric Breakdown Voltage In oil	kV	28.0	28.0
Thermal Conductivity	W/m·K	1.94	1.95

(Not specified values)

✻ These products are not suitable for use with all solvents.
Be sure to test to check compatibility with particular oils and fluids before use.

Appearance of typical silicone thermal conductive soft pad after 500 hrs aging in 150°C ATF

7 Handling precautions

1) Products should be stored in a dry place out of direct sunlight.
2) Avoid contact with residual solvents or oils as they may deteriorate the properties of the product.
3) For better results, the substrate surface should be cleaned and dried to remove any dirt, moisture or oils before application.
4) Prior to using the product with a thermal interface grease, test a sample with a small amount to determine compataibility.
5) Keep out of reach of children.
6) Be sure to read the Safety Data Sheets (SDS) for these products before use.
SDS are available from the Shin-Etsu Silicone website.
If the SDS is not listed on the website, please contact the sales department.

ShinEtsu
https://www.shinetsusilicone-global.com/

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