

High Thermally Conductive Silicone Pad

TC-UP6

TC-UP6 has good compressibility and higher thermal conductivity than our conventional products.



1 Features

- 1) High thermal conductivity; 6.3 W/m·K
- 2) Low hardness and good compressibility
- 3) Electrical insulation
- 4) Long term reliability
- 5) Single side less tackiness is available.

2 Applications

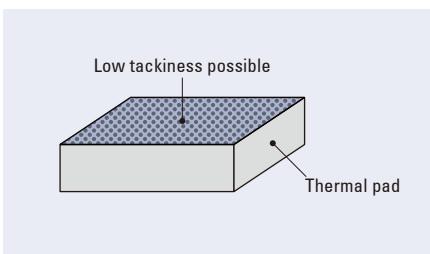
Thermal conductive pad for 5G base station and so on

3 General properties

Parameter	Test Method	Grade	TC-UP6
Color	—	Vermillion	
Structure*	—	Single layer	
Thickness mm	—	0.5 to 5.0	
Thermal conductivity W/m·K	Hotdisk (ISO22007-2)	6.3	
Hardness	Asker C	15	
	Shore 00	40	
Thermal resistance cm ² ·K/W@1.0 mm	50°C/100 psi ASTM D5470	0.48	
Breakdown voltage in oil kV	JIS C 2110-1@1 mm	21	
Volume resistivity Ω·cm	JIS K 6249	4.9 × 10 ¹⁴	
Dielectric constant (ε)	50 Hz	9.1	
	1 kHz	8.5	
	1 MHz	8.1	
Dielectric dissipation factor (tan δ)	50 Hz	1.7 × 10 ⁻¹	
	1 kHz	3.1 × 10 ⁻²	
	1 MHz	6.8 × 10 ⁻³	
Low molecular Siloxane content D ₃ -D ₁₀ ppm	Acetone extraction	40	
Flame retardance	UL94	V-0 equivalent	
Density at 23°C g/cm ³	JIS K 6249	3.3	
Continuous use temp. °C	—	-40 to 180	

* For improving handling, we can prepare the product;
-TL which has less tackiness in one side by special treatment

4 Structure



5 How to read Model Number

Example:

TC-100UP6-TL

Thickness 1.0 mm* Thermal conductivity 6 W/m·K
Less tackiness (By customer request)

* The Thickness of the TC-UP Series product is specified by a two digital code corresponding to the thickness in millimeters multiplied by 100.

6 Thermal resistance

Thermal resistance (cm²·K/W) by ASTM D5470

Pressure (psi)	0.5 mm	1.0 mm	1.5 mm	2.0 mm
10	0.82	1.27	1.78	2.12
40	0.51	0.78	0.93	1.01
70	0.39	0.60	0.67	0.71
100	0.32	0.48	0.52	0.54
130	0.30	0.41	0.41	0.43
170	0.27	0.36	0.34	0.35

(Not specified values)

7 Compression property

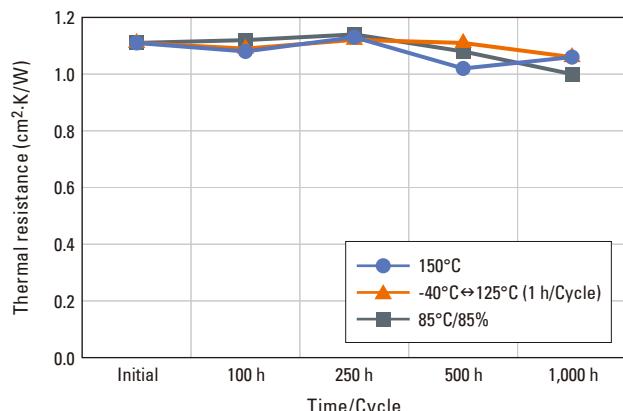
Compression ratio (%)

Pressure (psi)	0.5 mm	1.0 mm	1.5 mm	2.0 mm
10	—	20.4	22.8	30.3
40	37.0	52.1	61.6	68.9
70	51.2	63.7	72.7	78.4
100	58.9	71.2	79.5	84.0
130	61.9	75.6	83.9	87.7
170	64.9	78.8	86.8	90.0

(Not specified values)

8 Reliability data (1 mmt)

■ Long-term reliability

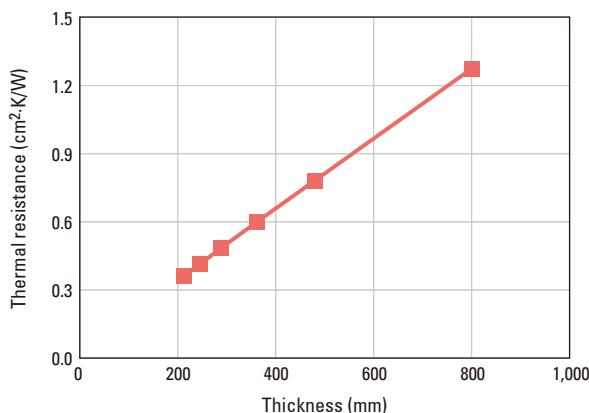


Thermal resistance (cm²·K/W) with 30% compression

	Initial	100 h	250 h	500 h	1,000 h
150°C	1.11	1.08	1.13	1.02	1.06
-40°C to 125°C (1 h/Cycle)	1.11	1.09	1.12	1.11	1.06
85°C/85%	1.11	1.12	1.14	1.08	1.00

(Not specified values)

9 Thermal resistance vs. Thickness



CAUTION

- The data and information presented in this catalog may not be relied upon to represent standard values. Shin-Etsu reserves the right to change such data and information, in whole or in part, in this catalog, including product performance standards and specifications without notice.
- Users are solely responsible for making preliminary tests to determine the suitability of products for their intended use. Statements concerning possible or suggested uses made herein may not be relied upon, or be construed, as a warranty of no patent infringement.
- For detailed information regarding safety, please refer to the Safety Data Sheet (SDS). Please download the SDS from our website. If the SDS is not listed on the website, please contact the sales department.
- SDS download URL: <https://www.shinetsusilicone-global.com/support/sdstds/>
- The silicone products described herein have been designed, manufactured and developed solely

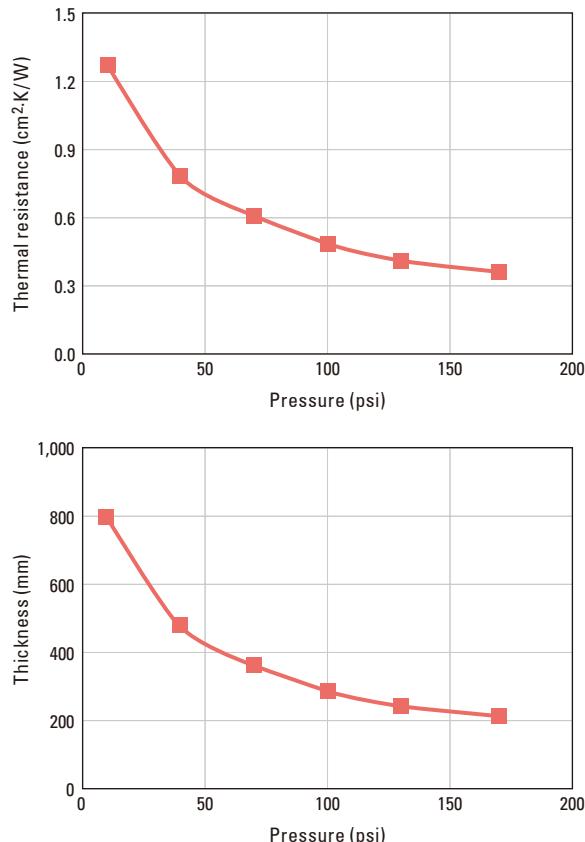
ShinEtsu

Shin-Etsu Chemical Co., Ltd.

Marunouchi Eiraku Bldg., 4-1, Marunouchi 1-chome,
Chiyoda-ku, Tokyo, 100-0005 Japan

"Shin-Etsu Silicone" is a registered trademark of Shin-Etsu Chemical Co., Ltd.
This is an edited version of the product data released on Jan. 2026.

10 Thermal resistance, Thickness vs. Pressure (1 mmt)



11 Handling precautions

- Products should be stored in a dry place out of direct sunlight.
- Avoid contact with residual solvents or oils as they may deteriorate the properties of the product.
- For better results, the substrate surface should be cleaned and dried to remove any dirt, moisture or oils before application.
- Prior to using the product with a thermal interface grease, test a sample with a small amount to determine compatibility.
- Keep out of reach of children.
- 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.

for general industrial use only; such silicone products are not designed for, intended for use as, or suitable for, medical, surgical or other particular purposes. Users have the sole responsibility and obligation to determine the suitability of the silicone products described herein for any application, to make preliminary tests, and to confirm the safety of such products for their use.

- Users must never use the silicone products described herein for the purpose of implantation into the human body and/or injection into humans.
- Users are solely responsible for exporting or importing the silicone products described herein, and complying with all applicable laws, regulations, and rules relating to the use of such products. Shin-Etsu recommends checking each pertinent country's laws, regulations, and rules in advance, when exporting or importing, and before using the products.
- Please contact Shin-Etsu before reproducing any part of this catalog. Copyright belongs to Shin-Etsu Chemical Co., Ltd.

<https://www.shinetsusilicone-global.com/>

Silicone Division, Sales and Marketing Department III

Phone : +81-(0)3-6812-2409 Fax : +81-(0)3-6812-2415