

# High Thermally Conductive Silicone Pad

## TC-UP8

TC-UP8 has good compressibility and higher thermal conductivity than our conventional products.

### 1 Features

- 1) High thermal conductivity; 8 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



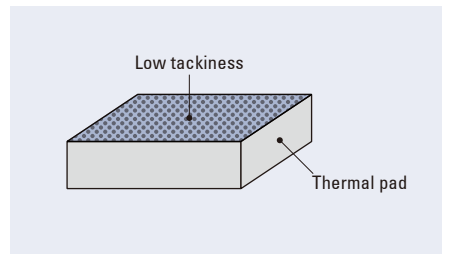
### 3 General properties

Parameter	Test Method	Grade	TC-UP8
Color	—	—	Gray
Structure*	—	—	Single layer
Thickness	mm	—	0.5 to 5.0
Thermal conductivity	W/m-K	Hotdisk (ISO22007-2)	8.0
Hardness	Asker C	—	15
	Shore 00	—	25
Thermal resistance	cm <sup>2</sup> ·K/W@1.0 mm	50°C/100 psi ASTM D5470	0.28
Breakdown voltage	kV	In air@1 mmt	7
Volume resistivity	Ω·cm	JIS K 6249	1.3 × 10 <sup>11</sup>
Dielectric constant (ε)	50 Hz	JIS K 6249	11
	100 Hz		12
	1 MHz		11
Dielectric dissipation factor (tan δ)	50 Hz	JIS K 6249	1.3 × 10 <sup>-1</sup>
	100 Hz		3.6 × 10 <sup>-2</sup>
	1 MHz		1.4 × 10 <sup>-2</sup>
Low molecular Siloxane content	D <sub>3</sub> -D <sub>10</sub> ppm	Acetone extraction	< 30
Flame retardance	—	UL94	V-0 equivalent
Density at 23°C	g/cm <sup>3</sup>	JIS K 6249	3.1
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

(Not specified values)

### 4 Structure



### 5 How to read Model Number

Example:

**TC-100UP8-TL**

TC: Thermal conductivity 8W  
 100: Thickness 1.0mm\*  
 UP8: Thermal conductivity 8W  
 TL: 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 (cm<sup>2</sup>·K/W) by ASTM D5470

Pressure (psi)	0.5mmt*	1.0 mmt	1.5mmt	2.0 mmt
10	0.56	0.85	1.20	1.61
40	0.42	0.45	0.76	1.16
70	0.27	0.35	0.52	0.94
100	0.25	0.28	0.33	0.65
130	0.24	0.25	0.28	0.33
170	0.22	0.23	0.25	0.28

\* -TL: Less tackiness in one side

(Not specified values)

### 7 Compression property

Compression ratio (%)

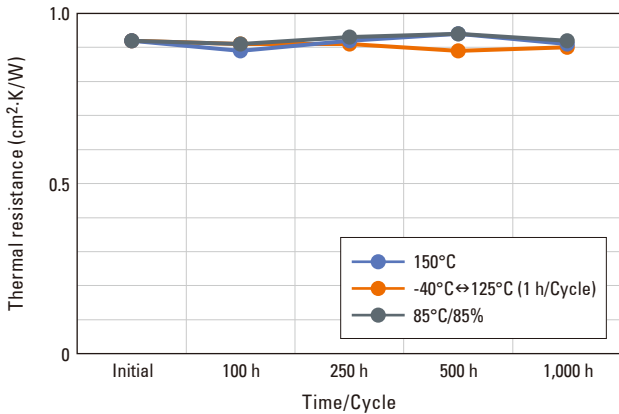
Pressure (psi)	0.5 mmt*	1.0 mmt	1.5 mmt	2.0 mmt
10	19	35	35	36
40	31	67	59	55
70	50	74	72	62
100	58	78	82	74
130	62	80	85	86
170	63	82	87	89

\* -TL: Less tackiness in one side

(Not specified values)

**8 Reliability data (1 mmt)**

■ Long-term reliability

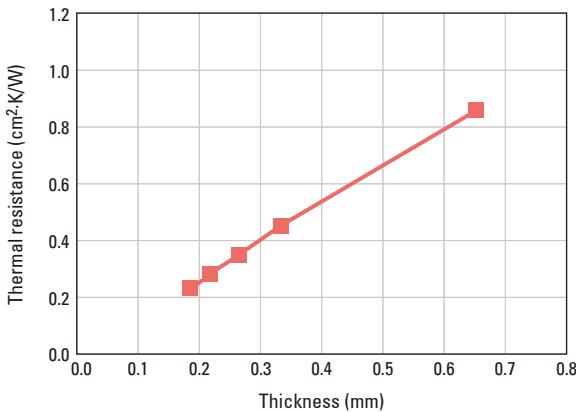


Thermal resistance (cm²·K/W) with 30% compression

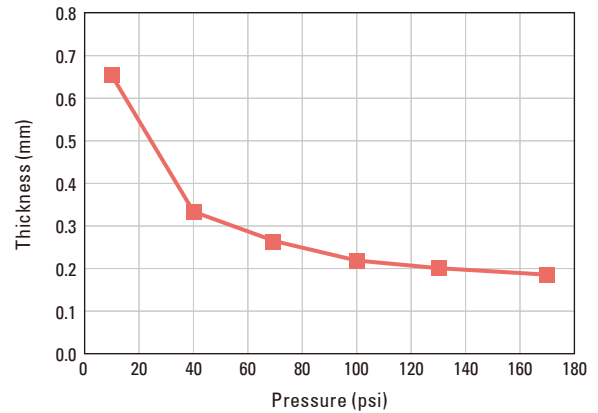
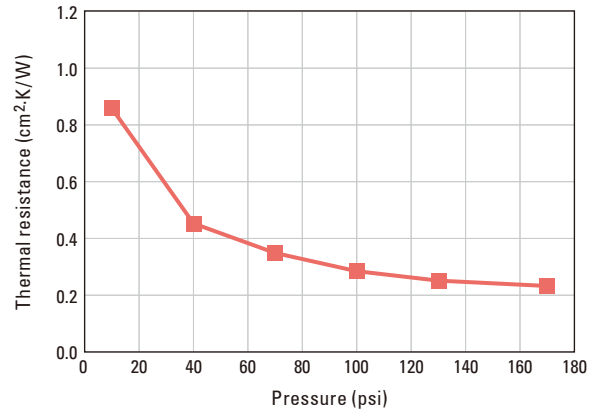
	Initial	100 h	250 h	500 h	1,000 h
150°C	0.92	0.89	0.92	0.94	0.91
-40°C ↔ 125°C (1 h/Cycle)	0.92	0.91	0.91	0.89	0.90
85°C/85%	0.92	0.91	0.93	0.94	0.92

(Not specified values)

**9 Thermal resistance vs. Thickness**



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



**11 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 compatibility.
- 5) Keep out of reach of children.
- 6) Please read the Safety Data Sheets (SDS) before use. SDS can be obtained from our Sales Department.

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