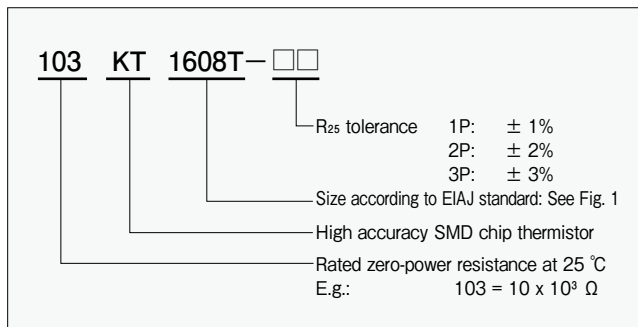


## High accuracy, SMD chip type thermistor

# KT Thermistor

The KT series SMD thermistor features high accuracy with tight resistance and B-value tolerances of  $\pm 1\%$ , high performance, high reliability and complies with EIAJ standards (dimensions: 1005, 1608).

### Product number explanation



### Applications

Office automation equipment, communication equipment, IT equipment, mobile devices, battery packs, battery chargers, LCDs, hybrid ICs, AV equipment

### Specifications

Product number	R <sub>25</sub> <sup>1</sup>	R <sub>25</sub> tolerance	B value <sup>2</sup>	Dissipation factor (mw / °C)	Thermal time constant (s) <sup>3</sup>	Rated power at 25 °C (mW)	Operating temperature range (°C)
103KT1608T	10 kΩ	$\pm 1\%$	3435 K $\pm 1\%$	approx. 0.9	approx. 5	4.5	- 40 to 125
503KT1608T	50 kΩ		4055 K $\pm 1\%$				
104KT1608T	100 kΩ		4390 K $\pm 1\%$				
103KT1005T	10 kΩ	$\pm 2\%$	3435 K $\pm 1\%$	approx. 0.7	approx. 2.2	3.5	

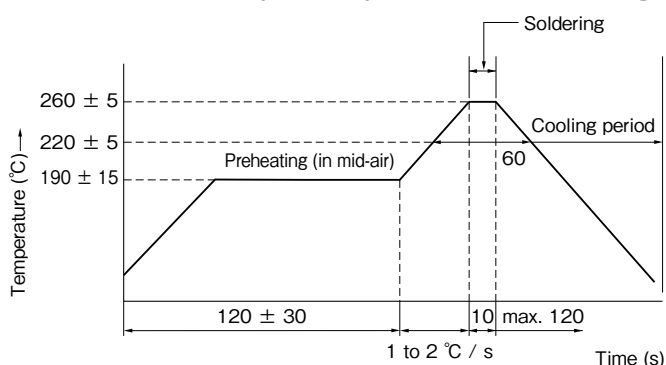
<sup>1</sup>: Rated zero-power resistance at 25 °C. <sup>2</sup>: B value calculated from rated zero-power resistance at 25 °C and 85 °C

<sup>3</sup>: Time required to reach 63.2% of temperature difference. Measured with sensor suspended in mid-air.

### Reliability data

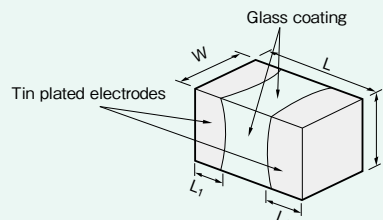
Item	Test conditions	Criteria
Resistance to soldering heat	10 s at 260 °C (wave soldering)	$\Delta R, \Delta B \pm 3\%$
Solderability	5 s at 235 °C Flux material: Rosin 25%, ethyl alcohol 75%	More than 75% soldered
Electrode connection strength vs. circuit board (horizontal)	After mounting the thermistor body is pushed horizontally with a jig with a force of 5 N for 10 s.	$\Delta R, \Delta B \pm 3\%$ and visual inspection
Electrode connection strength vs. circuit board (vertical)	After mounting the circuit board is bent from the back side to a maximum of 2 mm for 5 s.	
Strength of NTC body	A force of 10 N is applied vertically with a jig for 10 s.	$\Delta R, \Delta B \pm 3\%$
Dry heat	1000 hours at 125 °C	
Damp heat	1000 hours at 40 °C and 90% humidity	
Temperature cycle (thermal shock)	50 cycles as below: 1. - 25 °C for 30 minutes 2. Room temperature for 15 minutes 3. 100 °C for 30 minutes 4. Room temperature for 15 minutes	

### Recommended temperature profile for wave soldering



### Dimensions

Fig. 1



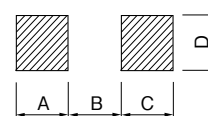
Size (Metric / EIAJ)	Size (Imperial)	L (mm)	W (mm)	T (mm)	L <sub>1</sub> (mm)
1005	0402	1.00 $\pm$ 0.15	0.50 $\pm$ 0.10	0.6 max.	0.15 to 0.30
1608	0603	1.60 $\pm$ 0.15	0.80 $\pm$ 0.15	0.95 max.	0.20 to 0.50

Unit: mm

### Caution

- Before and after soldering always make sure the circuit board is not bent or warped.
- The size of the soldering pad should be the same for both the left and the right side.

### Recommended soldering pad size



Size (EIAJ)	A	B	C	D
1005	0.6	0.5	0.6	0.6
1608	1.0	1.0	1.0	1.2

Unit: mm

## Resistance / temperature characteristics

Temperature (°C)	Product number			
	103KT1608T	503KT1608T	104KT1608T	103KT1005T
-40	221.9	1920	5218	223.9
-30	125.1	981.8	2530	126.1
-20	73.38	525.2	1285	73.87
-10	44.72	293.3	682.0	44.91
0	28.16	169.7	376.8	28.22
10	18.25	101.7	216.1	18.27
20	12.14	62.90	128.3	12.15
25	10.00	50.00	100.0	10.00
30	8.283	40.05	78.55	8.282
40	5.781	26.20	49.56	5.778
50	4.120	17.56	32.13	4.119
60	2.996	12.04	21.36	2.992
70	2.214	8.431	14.53	2.212
80	1.665	6.021	10.10	1.664
85	1.451	5.122	8.487	1.451
90	1.271	4.376	7.164	1.271
100	0.9832	3.237	5.176	0.9840
110	0.7707	2.433	3.803	0.7710
120	0.6114	1.855	2.839	0.6115
125	0.5469	1.627	2.466	0.5470
B <sub>25/85</sub>	3435 K	4055 K	4390 K	3435 K

Unit: kΩ

## Taping dimensions

