

THERMISTOR SPECIFICATIONS

1. Scope

This specification defines rating, dimensions, electrical properties, mechanical properties and climatic properties for "KT" the SMD thermistor.

2. Part No.

103KT1608T-1P

Note: EIA 0603 / EIAJ 1608 size

3. Rating

3.1 Rated zero-power resistance R_{25} 10.0 k Ω \pm 1% (at 25°C)

3.2 Rated B-value $B_{25/85}$ 3 435 K \pm 1%

(The Rated B-value is calculated from the zero-power resistance values measured at 25°C and 85°C.)

4. Other properties

4.1 Dissipation factor

Approx. 0.9 mW/°C (in still air)
(Measured at our laboratory, according to JIS C 2570 13.7)

4.2 Thermal time constant



Approx. 5.0 sec. (in still air)
(The time required for thermistor temperature to reach 63.2% of the differences between the initial temperature and ambient temperature when thermal equilibrium is plunged to the state of zero power. Measured according to JIS C 2570 13.8)

4.3 Maximum power dissipation

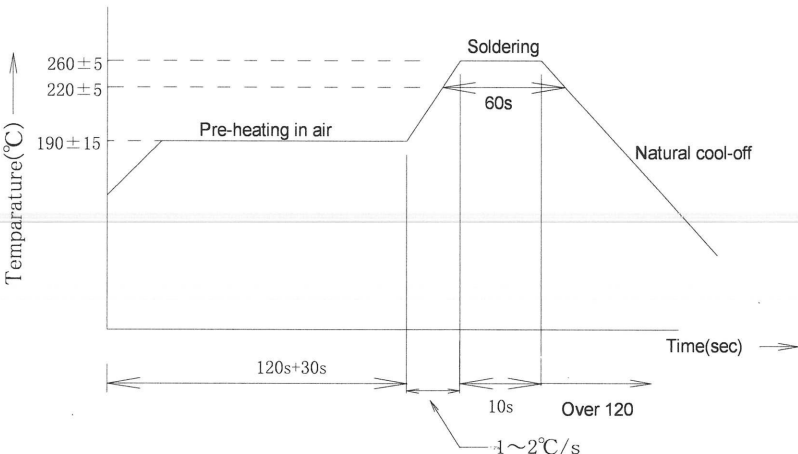
4.5mW (at 25°C)
(Including self-heat of approx. 5°C)

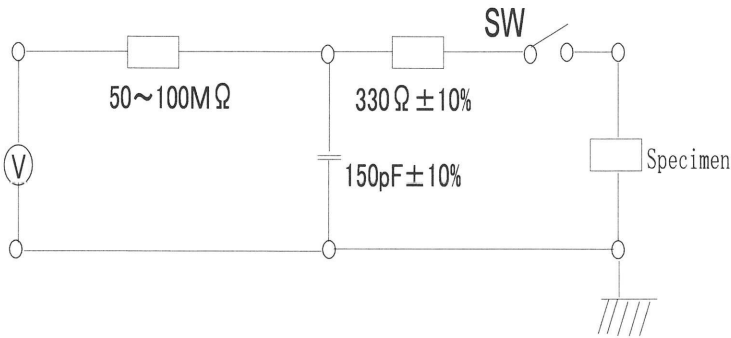
4.4 Operating temperature range

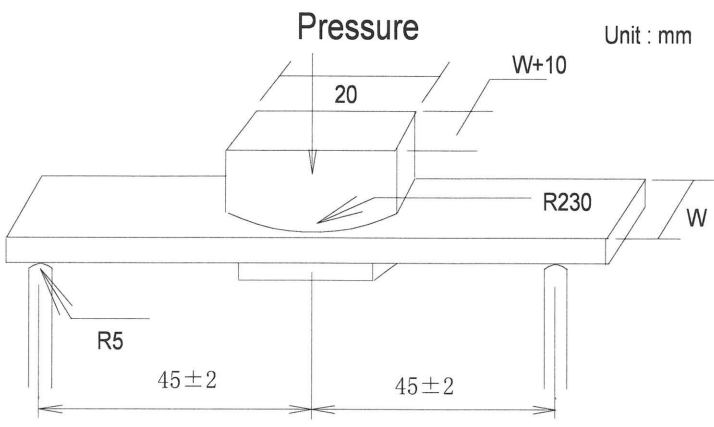
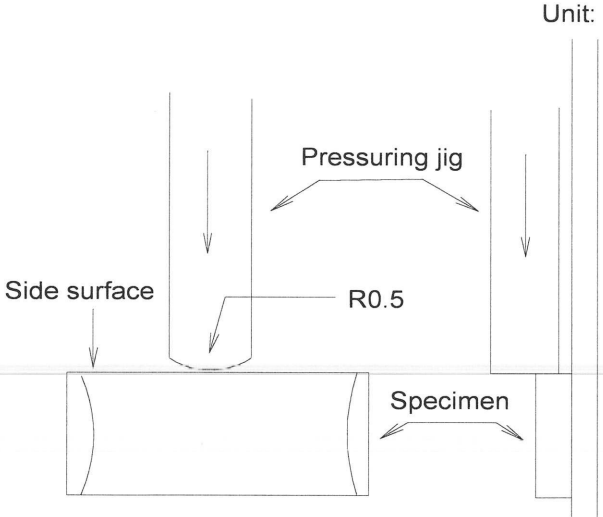
-40°C ~ +125°C

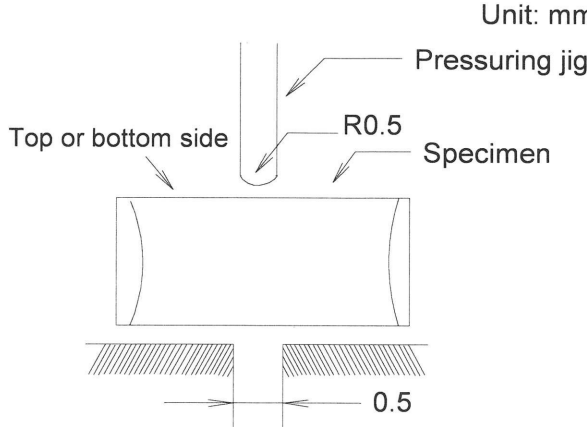
Spec. No.: S01-0227		Note		Revision	
Date: October 10, 2001				A	
Approved		Checked		Drawn	B
				SATO, T.	C

5. Reliability test

Item	Test Conditions	Criteria
Cold	Shall be exposed at $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for 1000 hours and then in room temperature for 1 hour.	Variation of resistance at 25°C and Rated B-value after test shall be within $\pm 3\%$ of those of the initial values.
Dry Heat	Shall be exposed at $125^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 1000 hrs and then in room temperature for 1 hour.	
Dump Heat	Shall be exposed at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 95%RH for 1000 hrs and then in room temperature for 1 hour.	
Temperature Cycling	Temperature cycling shall be proceeded 50 times in the following order and conditions. " $-25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for 30min." \rightarrow "Room temperature for 3~15 min." \rightarrow " $100^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 30 min."	
Resistance to Soldering heat	<p>● Flow-soldering Shall be immersed into melted solder of $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 10 ± 1sec. and then stored in room temperature for 1 hour.</p> <p>IEC 68-2-58 / JIS C 2570 14.10</p> <p>● Reflow-soldering temperature profile</p> <p>Specimen shall be soldered after going through the reflow furnace twice of which temperature profile is as follows:</p> 	No remarkable changes in appearance Variation of resistance at 25°C and Rated B-value after test shall be within $\pm 3\%$ of those of the initial values.
Solderability	The fluxed sample should be immersed into melted solder of $235^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 5 ± 1 sec. IEC 68-2-58 / JIS C 2570.14.9	At least 75% of the electrode shall be covered with soldering paste.
Dissolution resistance to solder	The fluxed sample should be immersed into melted solder of $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ within 30sec. IEC 115-1 / JIS C 2570.14.11	The electrode should not be lost to show the undercoating or die.

<p>Resistance to cleaning solvent</p>	<p>The sample shall be immersed into Isopropyl alcohol at room temperature for 90sec. and then exposed to room temperature for at least 1 hour.</p> <p>IEC 115-1 / JIS C 5201-1 4,29</p>	<p>No mechanical damages nor remarkable changes in appearance</p>
<p>Resistance to electrostatic discharge</p>	<p>In the following circuit, 15KV (air discharge) or 8KV (contact discharge) shall be applied 5 times at 10 to 1000ms intervals and then reverse the polarity to repeat the same operation.</p>  <p>IEC : 1995, 1000-4-2</p>	<p>No remarkable changes in appearance</p> <p>Variation of resistance at 25°C and Rated B-value after test shall be within ±3% of those of the initial values</p>

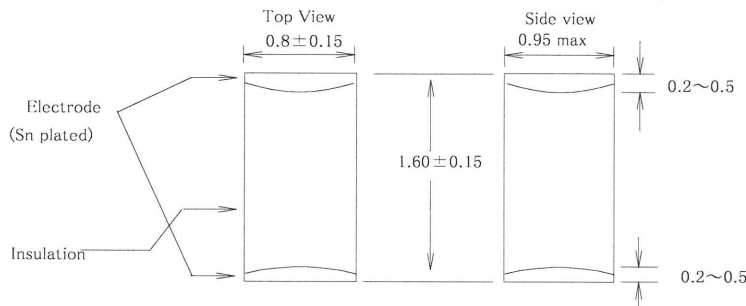
<p>Strength of electrode</p>	<p>The substrate with the sample mounted shall be bent with a speed of 0.5mm/sec to a depth of 2mm and maintained for 5 sec.</p>  <p>IEC 115-1 / JIS C5201-1 4.33</p>	<p>Variation of resistance at 25°C and Rated B-value after test shall be within $\pm 3\%$ of those of the initial values</p>
<p>Peel strength of electrode</p>	<p>The mounted sample shall be pressurized with the jig having Radius 0.5 in the direction of the arrow by 5N force and maintained for 10sec.</p>  <p>IEC 115-1 / JIS C5201-1.4.32</p>	<p>Electrode shall not be peeled off.</p> <p>Variation of resistance at 25 °C and Rated B-value after test shall be within $\pm 3\%$ of those of the initial values</p>

<p>Strength of NTC Body</p>	<p>A force of 10N (1.02Kgf) shall be applied by a jig having Radius 0.5 to the center of the specimen as shown below and maintained for 10s.</p> <p style="text-align: right;">Unit: mm</p>  <p style="text-align: center;">IEC 115-1 / JIS C5202, 6.2</p>	<p>Variation of resistance at 25°C and Rated B-value after test shall be within $\pm 3\%$ of those of the initial values.</p>
-----------------------------	---	--

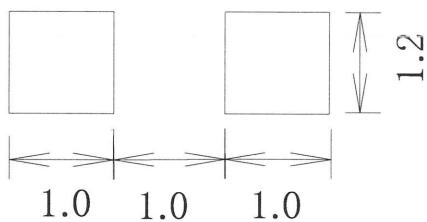
Note : "Room temperature" is defined as the temperature between 15°C to 35°C.

Test conditions shall be in accordance with JIS C-2570 until otherwise specified.

6. Dimensions

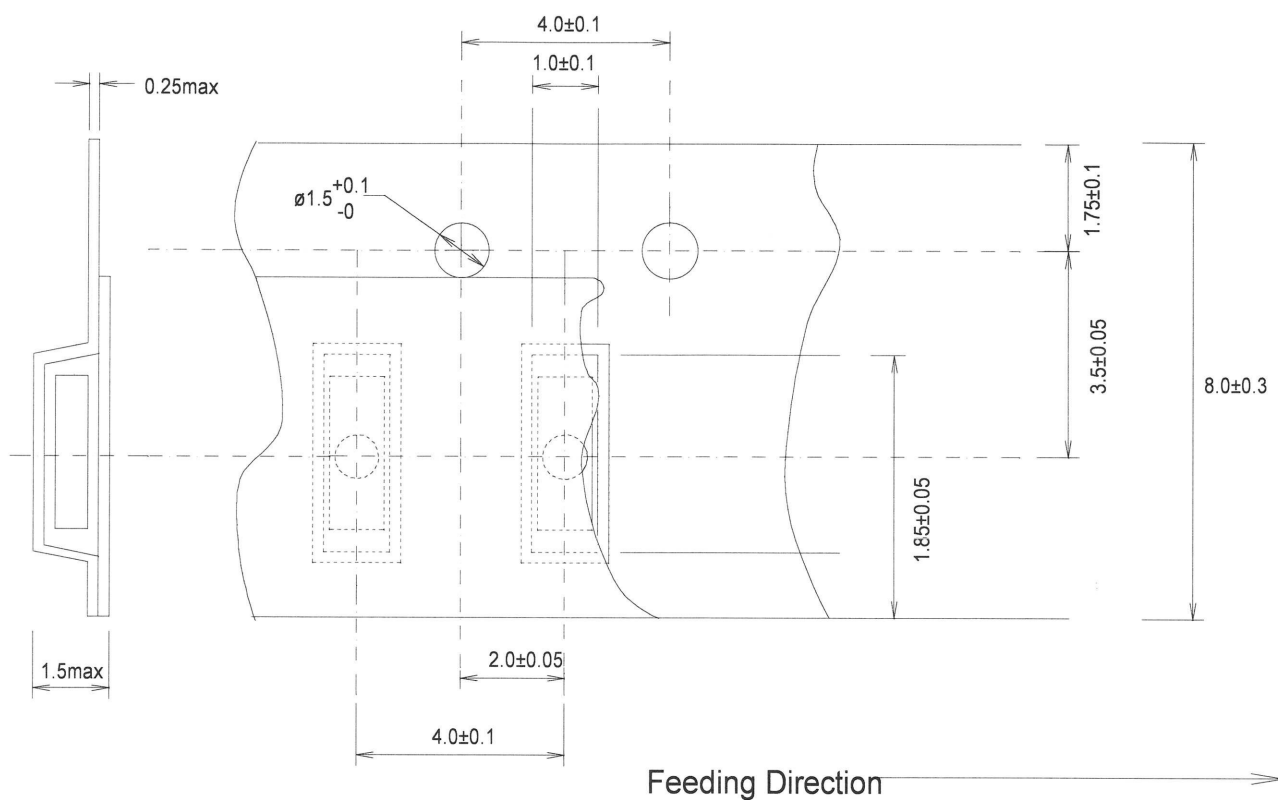


6.1 Recommended land sizes



6.2 Tape dimensions

Unit: mm

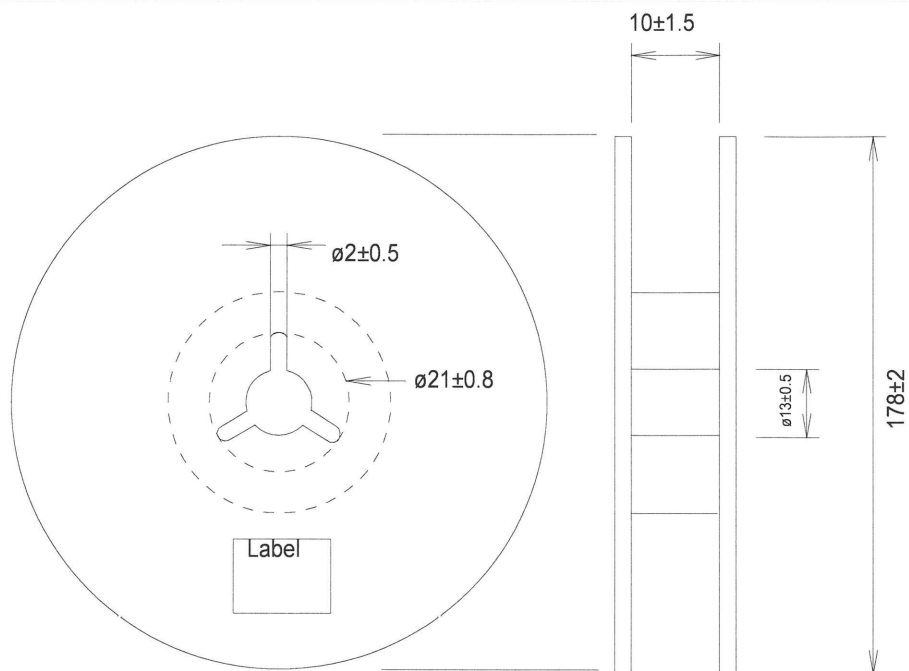


7. Packaging

- (1) Unit of order: 4,000pcs/reel
- (2) Label on the reel
- (3) Part No., Quantity and Lot No. shall be specified on the label.
- (4) Part No, Quantity and etc. shall be specified on the external package.

7.1 Reel dimensions

Unit: mm



7.2 Tape Leader dimensions

Unit: mm

