



# SPECIFICATIONS

Part No. : 103JT Series  
Spec. No. : S08-U007

CHECKED BY	SUBMITTED BY

<b>SPECIFICATIONS</b>	User Part No. ;	Approved	Checked	Drawn
	Application ;	Part No. ; 103JT Series	技師 00,7,21 池田	鈴 00,7,15 木田

### 1. Scope

This specification defines rating, dimensions, electric properties, mechanical properties and climatic properties for the following part.

### 2. Meaning of part number

Example     103 JT - 050  
                  1    2    3

1 : Zero-power resistance  
103 → 10 × 10<sup>3</sup> Ω

2 : JT Thermistor

3 : Dimension  
050 → 50mm




### 3. Rating and Characteristic

Part No.	Zero-power resistance (R25)	Tolerance of zero-power resistance	B-value (B25/85)	Tolerance of B-value	Dissipation factor (in still air)	Thermal time constant (in still air)	Rated maximum power dissipation
	[kΩ]	[%]	[K]	[%]	[mW/deg. C]	[s]	[mW]
103JT-025	10.0	+/- 1.0	3 435	+/- 1.0	Approx. 0.7	Approx. 5.0	3.5
103JT-050							
103JT-075							
103JT-100							

4. Operating temperature range : -50 deg. C ~ +90 deg. C

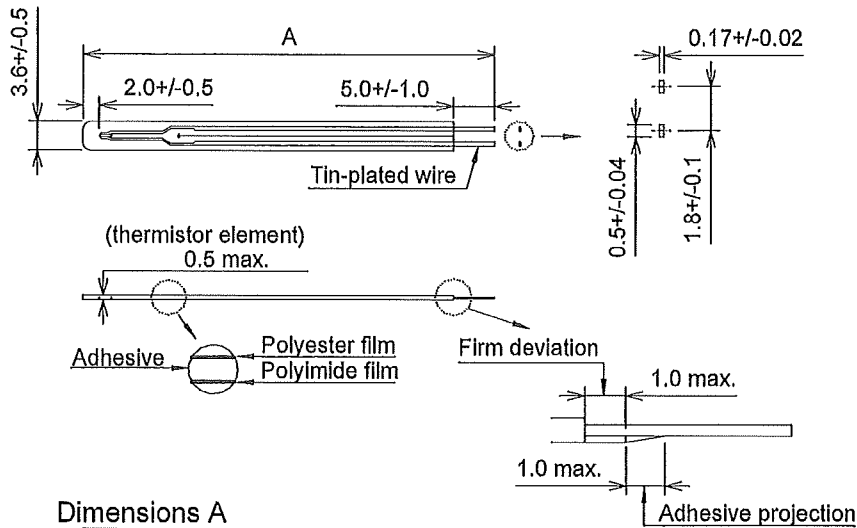
5. Storage temperature range : -10 deg. C ~ +40 deg. C

Company ;	Note ;	Date	15-Jul-08
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## 6. Dimensions

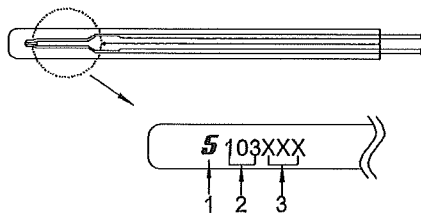
Unit : mm



Dimensions A

Part No.	A (mm)
103JT-025	25.0±1.0
103JT-050	50.0±1.0
103JT-075	75.0±1.0
103JT-100	100.0±1.0

## 7. Marking



- Trade mark **5**
- Zero-power resistance at 25 deg. C  
103 → 10 × 10<sup>3</sup> [Ω]
- Lot No.  
X : 0 ~ 9, A ~ Z

## 8. Properties

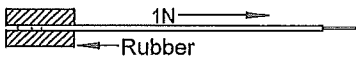
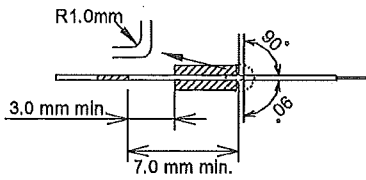
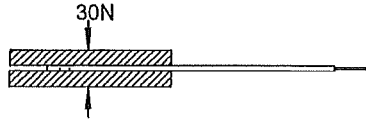
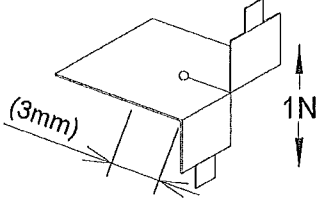
### 8.1 Electric properties

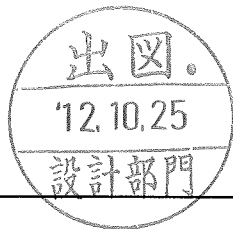
Item	Test conditions	Criteria
8.1.1 Insulation resistance	Measured at DC. 100 V between part of the film area and lead-wire.	Over 100 MΩ
8.1.2 Voltage proof	Measured at AC. 100 V for one minute between the film area and lead-wire.	Limited current is under 1 mA or more.

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### 8.2 Mechanical properties

Item	Test conditions	Criteria
8.2.1 Tensile of terminations	After 1 N loading weight is applied to the wire terminations for 10 s +/- 1 s. 	Variation of R25 and B25/B5 after test shall be within +/- 1 % of those of the initial values. No visible damage.
8.2.2 Free fall	After three times natural fall to a maple board from 0.75 m high.	
8.2.3 Bending of terminations	The lead wire shall be bent into 90 degree and bent back in one operation. 	Variation of R25 and B25/B5 after test shall be within +/- 1 % of those of the initial values. Not to produce disconnection of a lead.
8.2.4 Solderability	Terminals of the test samples shall be one time immersed into solder bath at 245 deg. C +/- 5 deg. C for 2 s ~ 3 s.  Solder : Sn-3.0Ag-0.5Cu Flux : Rosin 25%, Ethyl alcohol 75%	Soldered newly, more than 90%
8.2.5 Resistance to soldering heat	Terminals of the test samples shall be dipped into the soldering bath at 260 deg. C +/- 5 deg. C to the point 2 mm from the body and held there for 5 s +/- 1 s.	Variation of R25 and B25/B5 after test shall be within +/- 1 % of those of the initial values. No visible damage.
8.2.6 Press of termination	Put a test sample between 2 glass epoxy plates which is 1.6 mm thickness and 40 square mm and press 30 N weight for 60 s +/- 3 s from both side. 	
8.2.7 Tensile of terminations	One time 1N load for 10 s +/- 1 s as shown below. 	Variation of R25 and B25/B5 after test shall be within +/- 1 % of those of the initial values. No visible damage. (except the bend of the lead wire due to the 1N load.)

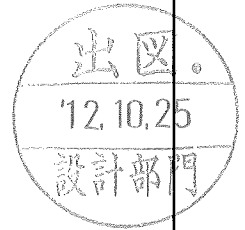


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### 8.3 Climatic properties

Item	Test conditions	Criteria
8.3.1 Cold	At -55 deg. C +/- 3 deg. C for 1 000 h and then stored at room temperature and humidity for 1 h.	Variation of R25 and B25/85 after test shall be within +/- 1 % of those of the initial values.
8.3.2 Dry heat	At +90 deg. C +/- 3 deg. C for 1 000 h and then stored at room temperature and humidity for 1 h.	
8.3.3 Dry heat (Under loading)	At +90 deg. C +/- 3 deg. C with the DC. 1 mA load for 1 000 h and then stored at room temperature and humidity for 1 h.	
8.3.4 Change of temperature	100 times in the following order and conditions and then stored at room temperature and humidity for 1 h. "At room temperature (Initial value)." "At -25 deg. C +/- 3 deg. C for 30 min." "At room temperature for 3 min." "At +90 deg. C +/- 3 deg. C for 30 min." "At room temperature for 3 min."	
8.3.5 Damp heat	At +40 deg. C +/- 3 deg. C, 90 %RH ~ 95 %RH for 1 000 h and then stored at room temperature and humidity for 1 h.	
8.3.6 Damp heat (Under loading)	At +40deg. C +/- 3 deg. C, 90 %RH ~ 95 %RH with the DC. 1 mA load for 1 000 h and then stored at room temperature and humidity for 1 h.	



#### Note

"Room temperature" is defined as the temperature between 15 deg. C and 35 deg. C.  
"Room humidity" is defined as the humidity between 25 %RH ~ 75 %RH.

### 9. Packaging

- 9.1 Packaging      Plastic bag
- 9.2 Quantity      1 000 pcs / bag
- 9.3 Label          Part No., Type No., Quantity and Lot No. shall be the mention form on label.

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Precautions for Use of JT Thermistor



**Warning.**

Comply with the following precautions for use, since JT Thermistor may be broken down or it may cause failure and/or malfunction of equipment.

- (1) Thermistor is designed for a particular use.  
Do not utilize it for other use applied.
- (2) Check by yourself performance and function of your equipment with the Thermistor by your actual evaluation test and reliability test.
- (3) Pay attention to voltage to be applied to the Thermistor because its lowered resistance by self-heating may cause failure and/or malfunction of equipment.
- (4) Do not use the Thermistor out of operating temperature range specified.
- (5) Take all possible measures such as a safety circuit or concomitance use of another Thermistor with same performance to prevent any accident.
- (6) Take measures as follows in case of electrical noise is concerned.
  - A protect circuit.
  - An electrical shield over the Thermistor including lead-wires.
- (7) When the Thermistor is sealed, examine a kind of sealant, quantity, curing condition and adhesiveness and confirm its reliability.
- (8) Do not apply rating power in excess of that specified.
- (9) Do not apply any mechanical impact such as falling or pressure in excess of those specified.
- (10) When lead-wires and covering films are bent, do not exceed 2.5N forced and 90° two times bend.  
 ※ One bend is defined as bend by 90° and then bend to the original position.
- (11) When lead-wires and covering films are cut or bent, proceed with holding the portion of 3 mm away from a Thermistor element.
- (12) Do not apply more than 1N force to the Thermistor in the axial direction.
- (13) When a terminal of the Thermistor is connected, keep it clean without such as blot or rust, otherwise it may cause poor contact.
- (14) When the Thermistor is soldered, do not melt films and/or solder of the Thermistor itself.
- (15) Do not attach a soldering iron to a Thermistor element and films.
- (16) Do not bend, hold with something hard and twist portion of the Thermistor element.
- (17) Do not keep using the Thermistor for a long time at more than 85 %RH, except when it is taken measures against humidity.
- (18) Give warning to a user not to touch the Thermistor, if the user can touch the Thermistor in your application.
- (19) Do not use the Thermistor under the following environment , except it is taken measures.
  - Corrosive gas. (Cl<sub>2</sub>, NH<sub>3</sub>, SO<sub>x</sub>, NO<sub>x</sub> etc)
  - High conductive conditions. (electrolyte, water, saline solution and etc.)
  - Acids, alkalis, organic solvent.
  - Dusty place.
  - Condensing place

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Caution.

Pay attention of the following cautions for use of JT Thermistor.

- (1) Please consult us when the Thermistor is reprocessed.
- (2) Pay attention to the following description when the Thermistor is installed to your equipment, otherwise it may cause malfunction of your equipment when the Thermistor can not detect real temperature.
  - When the Thermistor detects temperature of air or liquid, put the Thermistor in order to detect the certain ambient temperature and not to be affected by a heater or a chiller.
  - When the Thermistor detects temperature of a solid substance, then fill thermal conductive grease or adhesive up between the substance and the Thermistor, and pay attention that the Thermistor is not affected by air-flow or wind from outside.
- (3) When the Thermistor is installed with pushing, pressing, clamping or inserting, then please consult us about installing condition such as mechanical properties of the Thermistor.
- (4) Pay attention to the following storage condition, otherwise it may cause deterioration and/or damage of the Thermistor.
  - Store the Thermistor at -10 deg. C ~ +40 deg. C, less than 75 %RH in a carton not to be loaded at a depository without rapid temperature change, direct sunlight, corrosive gas and dust,
  - Storage term limitation.  
Use the Thermistor up within 6 month after its delivery.
- (5) When something at more than 150 deg. C touches to the films of the Thermistor in soldering process, then the film may melt.



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Revision records

Revision No.	Date	Revised by	Revision item	Former specification	New specification
a					
b					
c					
d					
e					
f					
g					
h					
i					
j					



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