

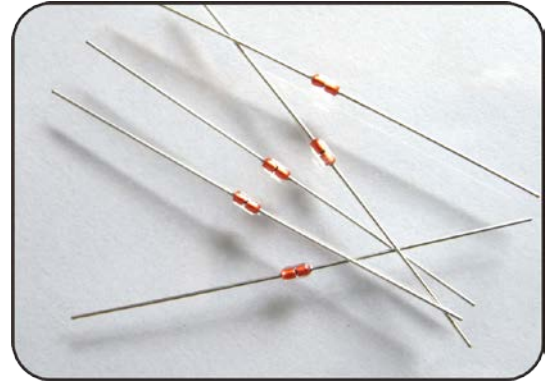
# NTC Thermistor : JPTD Type



## Glass Axial Type for Temperature Sensing/Compensation

### ■ Features

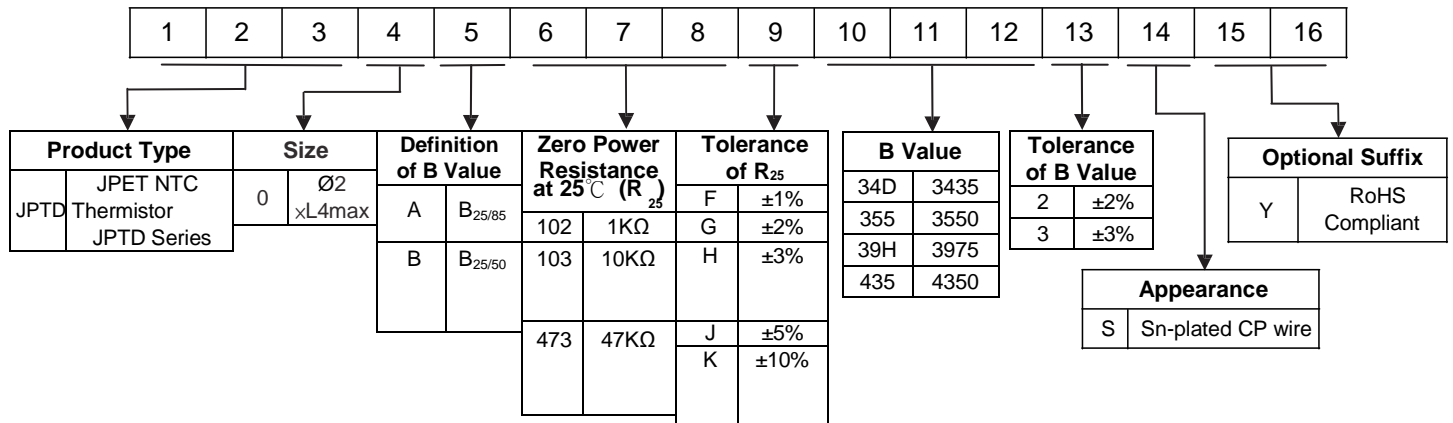
1. RoHS compliant
2. Body size  $\varnothing 2\text{mm} \times 4\text{mm}$
3. Axial lead glass-sealed
4. Operating temperature range:  $-40^{\circ}\text{C} \sim +200^{\circ}\text{C}$
5. Agency recognition: UL / cUL



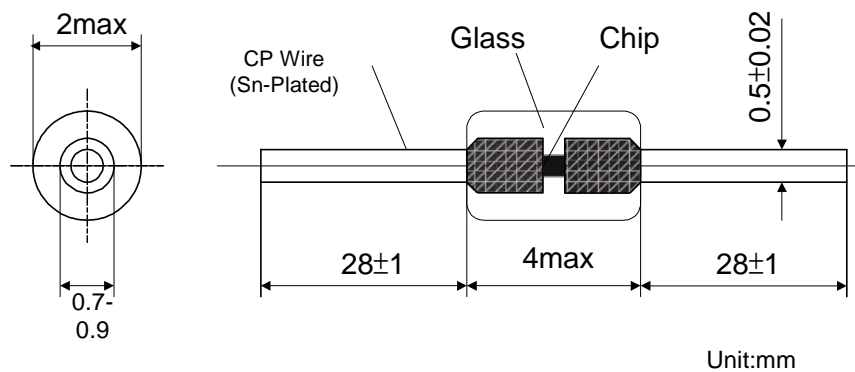
### ■ Recommended Applications

1. Home appliances (air conditioner, refrigerator, electric fan, electric cooker, washing machine, microwave oven, drinking machine, CTV, radio.)
2. Automotive electronics
3. Heaters

### ■ Part Number Code



### ■ Structure and Dimensions



# NTC Thermistor : JPTD Type



## Glass Axial Type for Temperature Sensing/Compensation

### Electrical Characteristics

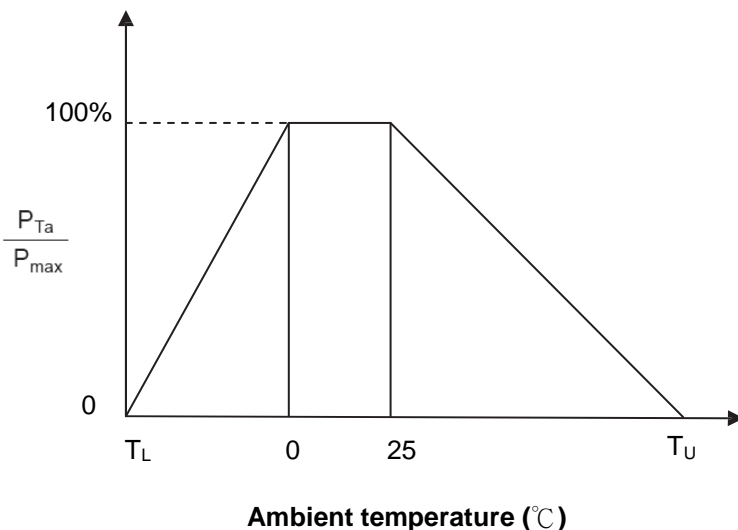
Part No.	Zero Power Resistance at 25°C	Tolerance of R <sub>25</sub> (±%)	B Value (K)		Tolerance of B Value (±%)	Max. Power Dissipation at 25°C P <sub>max</sub> (mW)	Dissipation Factor ä(mW/°C)	Thermal Time Constant τ (Sec.)	Operating Temperature Range T <sub>L</sub> ~T <sub>U</sub> (°C)	Safety Approvals	
	R <sub>25</sub> (KΩ)										UL
JPTD0A502□355*	5	1、2、3、5、10	25/85	3550	2、3	120	≥2	≤10	-40~+200	√	
JPTD0B103□355*	10		25/50	3550						√	
JPTD0A103□34D*	10		25/85	3435						√	
JPTD0A103□347*	10		25/85	3470						√	
JPTD0A103□39H*	10		25/85	3975						√	
JPTD0B203□395*	20		25/50	3950						√	
JPTD0B303□395*	30		25/50	3950						√	
JPTD0B473□395*	47		25/50	3950						√	
JPTD0B503□395*	50		25/50	3950						√	
JPTD0B104□400*	100		25/50	4000						√	
JPTD0A104□39H*	100		25/85	3975						√	
JPTD0A104□430*	100		25/85	4300						√	
JPTD0B204□395*	200		25/50	3950						√	
JPTD0A204□400*	200		25/85	4000						√	
JPTD0B204□435*	200		25/50	4350						√	

Note 1: □ = Tolerance of R<sub>25</sub>  
 \* = Tolerance of B value

Note 2: UL/cUL

Note 3: Special specifications are available upon request.

### Max. Power Dissipation Derating Curve



T<sub>U</sub> : Maximum operating temperature (°C)  
 T<sub>L</sub> : Minimum operating temperature (°C)

For example:

Ambient temperature (T<sub>a</sub>) = 55°C

Maximum operating temperature (T<sub>U</sub>) = 200°C

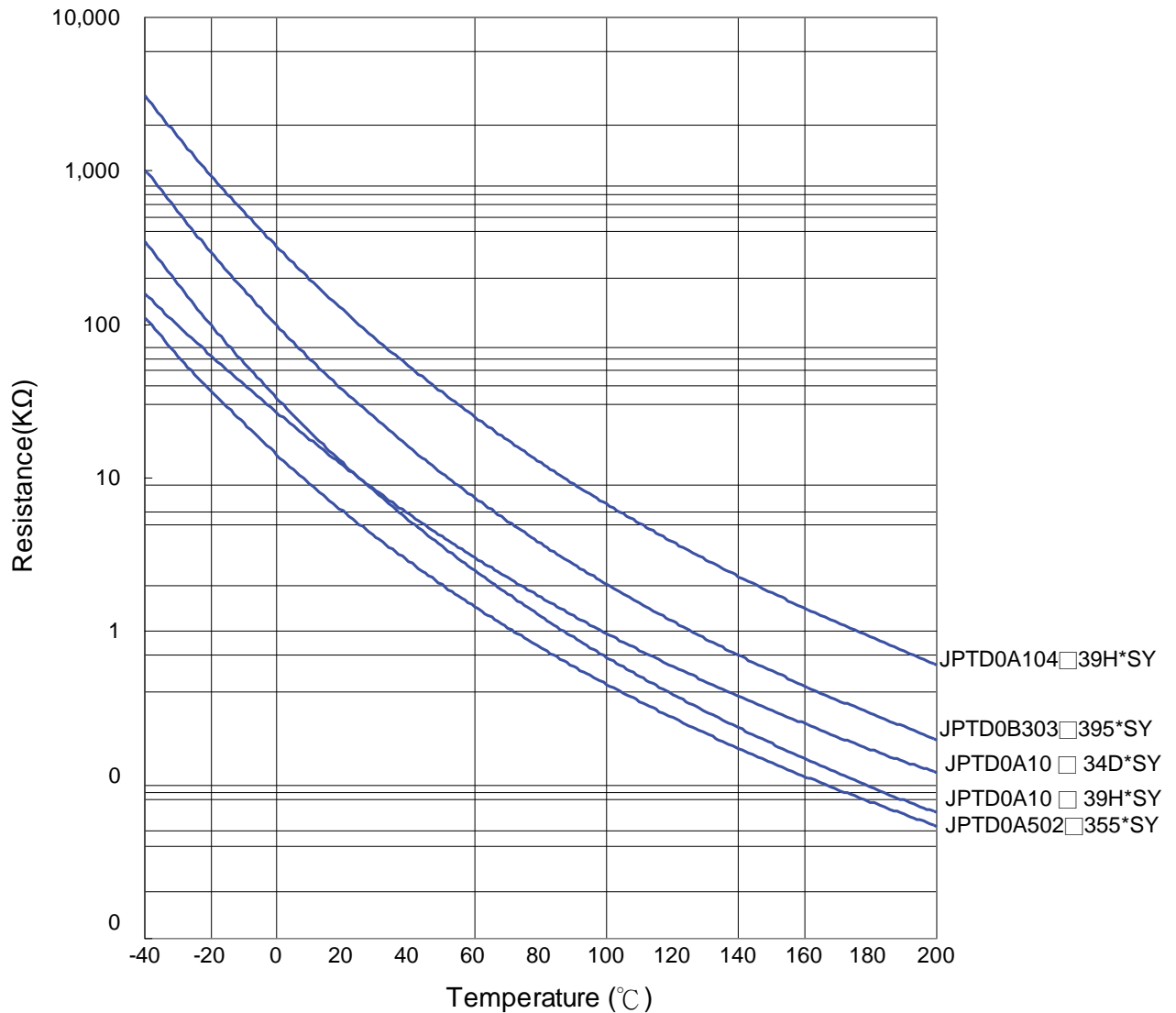
$$P_{Ta} = (T_U - T_a) / (T_U - 25) \times P_{max} \cong 83\% P_{max}$$

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## Glass Axial Type for Temperature Sensing/Compensation

### ■ R-T Characteristic Curves



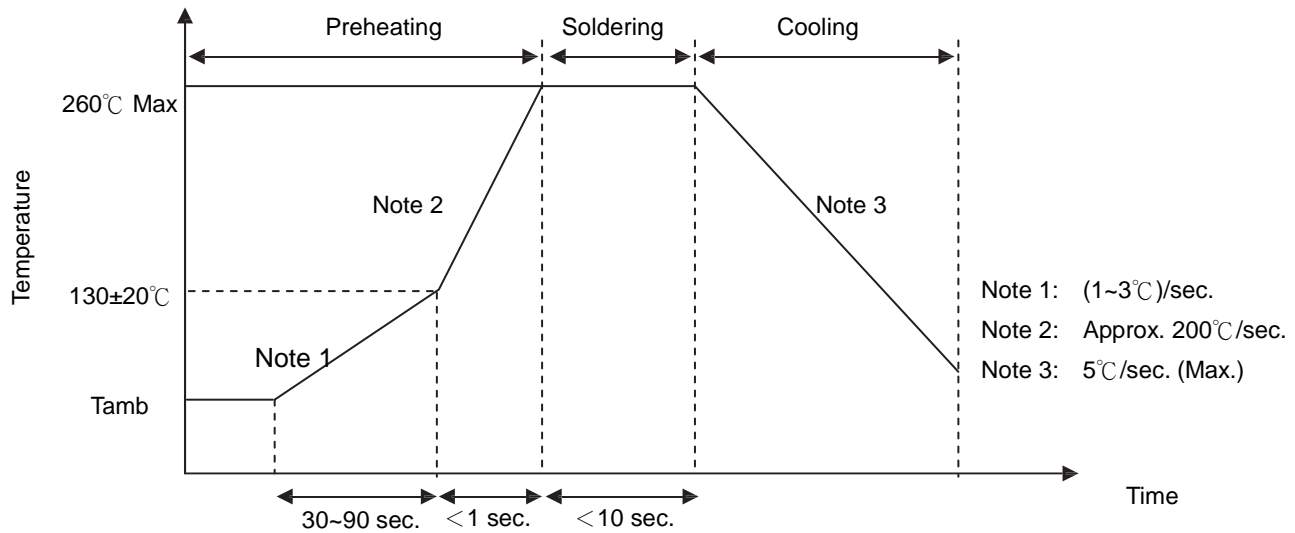
# NTC Thermistor : JPTD Type



## Glass Axial Type for Temperature Sensing/Compensation

### ■ Soldering Recommendation

#### ● Wave Soldering Profile



#### ● Recommended Reworking Conditions With Soldering Iron

Item	Conditions
Temperature of Soldering Iron-tip	$360^\circ\text{C}$ (max.)
Soldering Time	3 sec. (max.)
Distance from Thermistor	2 mm (min.)

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## Glass Axial Type for Temperature Sensing/Compensation

### ■ Reliability

Item	Standard	Test conditions / Methods	Specifications															
Tensile Strength of Terminations	IEC 60068-2-21	<p>Gradually apply the force specified and keep the unit fixed for 10±1 sec.</p> <table border="0"> <tr> <td style="text-align: center;">Terminal diameter (mm)</td> <td style="text-align: center;">Force (Kg)</td> </tr> <tr> <td style="text-align: center;"><math>0.3 &lt; d \leq 0.5</math></td> <td style="text-align: center;">0.5</td> </tr> </table>	Terminal diameter (mm)	Force (Kg)	$0.3 < d \leq 0.5$	0.5	No visible damage											
Terminal diameter (mm)	Force (Kg)																	
$0.3 < d \leq 0.5$	0.5																	
Bending Strength of Terminations	IEC 60068-2-21	<p>Hold specimen and apply the force specified below to each lead. Bend the specimen to 90°, and then return to the original position. Repeat the procedure in the opposite direction.</p> <table border="0"> <tr> <td style="text-align: center;">Terminal diameter (mm)</td> <td style="text-align: center;">Force (Kg)</td> </tr> <tr> <td style="text-align: center;"><math>0.3 &lt; d \leq 0.5</math></td> <td style="text-align: center;">0.25</td> </tr> </table>	Terminal diameter (mm)	Force (Kg)	$0.3 < d \leq 0.5$	0.25	No visible damage											
Terminal diameter (mm)	Force (Kg)																	
$0.3 < d \leq 0.5$	0.25																	
Solderability	IEC 60068-2-20	245 ± 3 °C, 3 ± 0.3 sec	At least 95% of terminal electrode is covered by new solder															
Resistance to Soldering Heat	IEC 60068-2-20	260 ± 3 °C, 10 ± 1 sec	No visible damage   $\Delta R_{25}/R_{25}$   ≤ 3 %															
High Temperature Storage	IEC 60068-2-2	200 ± 5 °C, 1000 ± 24 hrs	No visible damage   $\Delta R_{25}/R_{25}$   ≤ 5 %															
Damp Heat, Steady State	IEC 60068-2-78	40 ± 2°C, 90~95% RH, 1000 ± 24 hrs	No visible damage   $\Delta R_{25}/R_{25}$   ≤ 3 %															
Rapid Change of Temperature	IEC 60068-2-14	<p>The conditions shown below shall be repeated 5 cycles.</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Period (minutes)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40 ± 5</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temperature</td> <td>5 ± 3</td> </tr> <tr> <td>3</td> <td>200 ± 5</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>5 ± 3</td> </tr> </tbody> </table>	Step	Temperature (°C)	Period (minutes)	1	-40 ± 5	30 ± 3	2	Room temperature	5 ± 3	3	200 ± 5	30 ± 3	4	Room temperature	5 ± 3	No visible damage   $\Delta R_{25}/R_{25}$   ≤ 3 %
Step	Temperature (°C)	Period (minutes)																
1	-40 ± 5	30 ± 3																
2	Room temperature	5 ± 3																
3	200 ± 5	30 ± 3																
4	Room temperature	5 ± 3																
Max. Power Dissipation	IEC 60539-1 4.26.3	25 ± 5°C, Pmax., 1000 ± 24 hrs	No visible damage   $\Delta R_{25}/R_{25}$   ≤ 5 %															

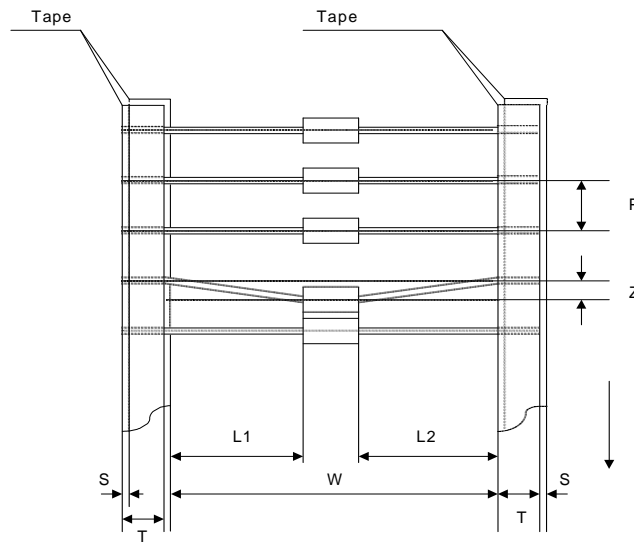
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## Glass Axial Type for Temperature Sensing/Compensation

### ■ Packaging

#### ● Taping Specification



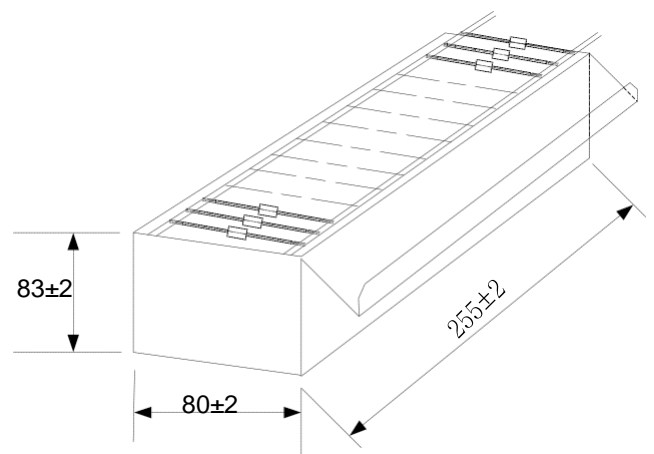
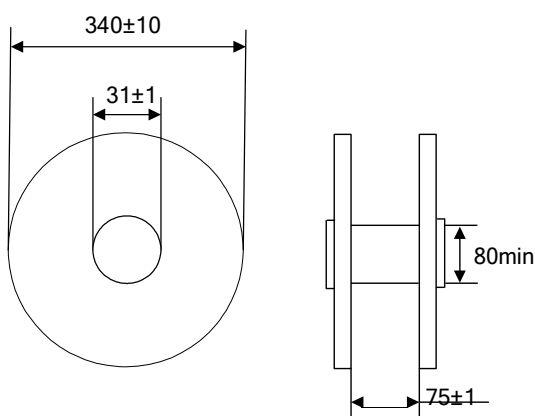
Item	W	P	L1-L2	T	Z	S
Max.	27	5.5	1	7	1.2	0.8
Min.	25	4.5	0	5	0	0
Max.	53	5.5	1	7	1.2	0.8
Min.	51	4.5	0	5	0	0

### ■ Quantity

● Bulk Packing: 500 pcs/bag

● Reel Packing: 5,000 pcs/reel

● Ammo Packing: 5,000 pcs/box



### ■ Warehouse Storage Conditions of Products

● Storage Conditions :

1. Storage Temperature: -10°C ~+40°C
2. Relative Humidity: ≤ 75%RH
3. Keep away from corrosive atmosphere and sunlight.

● Period of Storage : 1 year