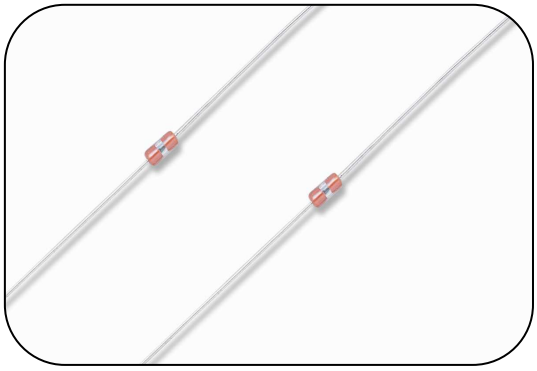
NTC Thermistor：DHT Type

Glass Axial Type for Temperature Sensing/Compensation

■ Features

1. RoHS compliant
2. Body size ϕ2mm X 4mm
3. Axial lead glass-sealed
4. -40 ~ +200℃ operating temperature range
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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Product Type

DHT	Thinking NTC thermistor DHT type

Size

0	ϕ2 xL4max

Definition of B Value

A	$B_{25/85}$
B	$B_{25/50}$

Zero Power Resistance at 25℃ (R_{25})

102	1KΩ
103	10KΩ
473	47KΩ

Tolerance of R_{25}

F	±1%
G	±2%
H	±3%
J	±5%
K	±10%

B Value First Two Digits

	30
31	31
32	32
:	:
:	:
40	40
41	41
:	:

B Value Last Two Digits

0	00
A	05
1	10
B	15
2	20
:	:
H	75
8	80
J	85
9	90
K	95

Tolerance of B Value

2	±2%
3	±3%

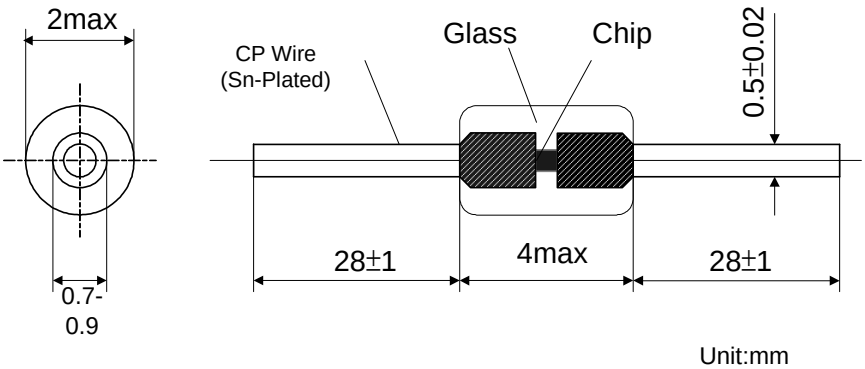
Optional Suffix

Y	RoHS compliant

Appearance

S	Sn-plated CP wire

■ Structure and Dimensions



Unit:mm

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■ Electrical Characteristics

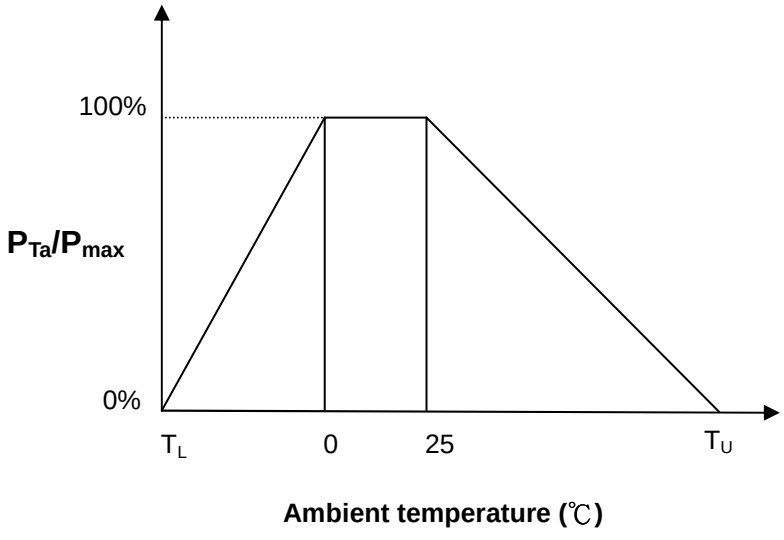
Part No.	Zero Power Resistance at 25℃	Tolerance of R_{25}	$B_{25/85}$ Value		Tolerance of B Value	Max. Power Dissipation at 25℃	Dissipation Factor	Thermal Time Constant	Operating Temperature Range	Safety Approvals	
	R_{25} (KΩ)	(±%)	(K)		(±%)	P_{max}(mW)	δ(mW/℃)	τ(Sec.)	T_L~T_U(℃)	UL	cUL
DHT0A502□355*	5	1、2、3、5、10	25/85	3550	2、3	120	≧2	≦10	-40～+200	√	√
DHT0B103□355*	10		25/50	3550						√	√
DHT0A103□34D*	10		25/85	3435						√	√
DHT0A103□347*	10		25/85	3470						√	√
DHT0A103□39H*	10		25/85	3975						√	√
DHT0B203□395*	20		25/50	3950						√	√
DHT0B303□395*	30		25/50	3950						√	√
DHT0B473□395*	47		25/50	3950						√	√
DHT0B503□395*	50		25/50	3950						√	√
DHT0B104□400*	100		25/50	4000						√	√
DHT0A104□39H*	100		25/85	3975						√	√
DHT0A104□430*	100		25/85	4300						√	√
DHT0B204□395*	200		25/50	3950						√	√
DHT0A204□400*	200		25/85	4000						√	√
DHT0B204□435*	200		25/50	4350						√	√

Note 1: □ = Tolerance of R_{25}

Note 2: * = Tolerance of B value

Note3: UL/cUL File No E138827

■ Max. Power Dissipation Derating Curve



T_U：Maximum operating temperature (℃)

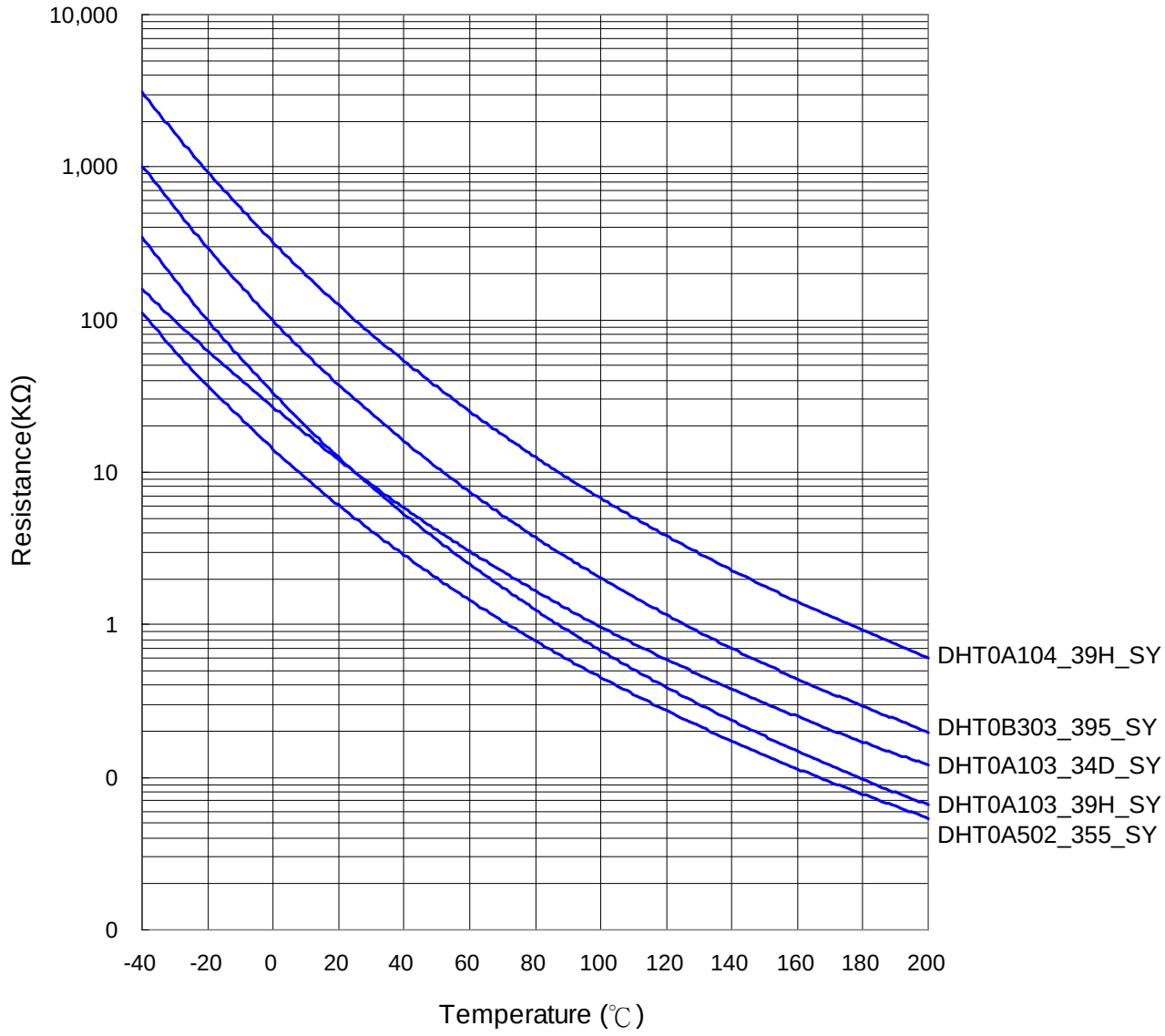
T_L：Minimum operating temperature (℃)

For example：Ambient temperature(Ta)=55℃

Maximum operating temperature(T_U)＝200℃

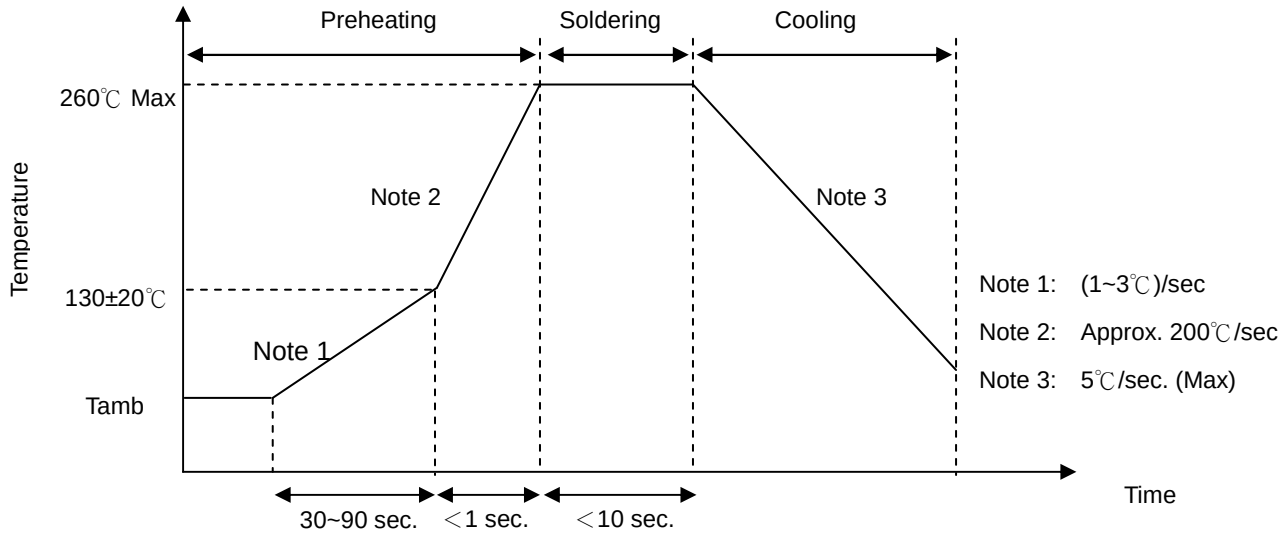
P_{Ta}=(T_U-Ta)/(T_U-25)×Pmax ≅ 83% Pmax

■ R-T Characteristic Curves



■ Soldering Recommendation

● Wave Soldering Profile



● Recommended Reworking Conditions With Soldering Iron

Item	Conditions
Temperature of Soldering Iron-tip	360℃ (max.)
Soldering Time	3 sec (max.)
Distance from Thermistor	2 mm (min.)

■ Reliability

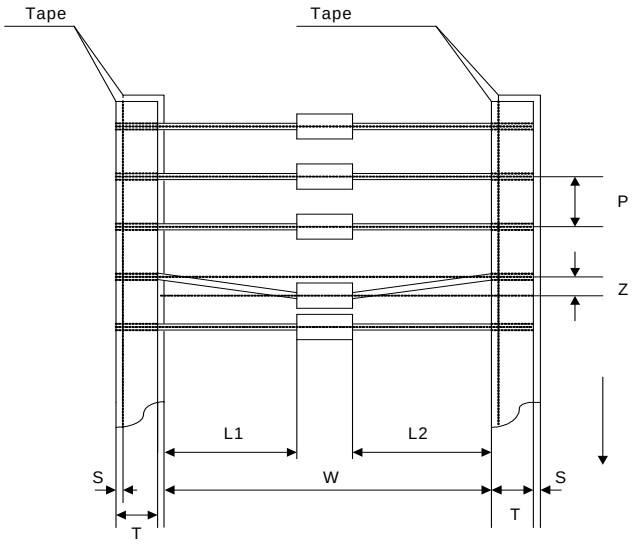
<table>
<tr><th>Item</th><th>Standard</th><th>Test conditions / Methods</th><th>Specifications</th></tr>
<tr><td>Tensile Strength of Terminations</td><td>IEC60068-2-21</td><td>Gradually applying the force specified and keeping the unit fixed for 10±1 sec.

Terminal diameter (mm): 0.3<d≦0.5
Force (Kg): 0.5</td><td>No visible damage</td></tr>
<tr><td>Bending Strength of Terminations</td><td>IEC60068-2-21</td><td>Hold specimen and apply the force specified below to each lead. Bend the specimen to 90°, then return to the original po sition. Repeat the procedure in the opposite direction.

Terminal diameter (mm): 0.3<d≦0.5
Force (Kg): 0.25</td><td>No visible damage</td></tr>
<tr><td>Solderability</td><td>IEC60068-2-20</td><td>245 ± 3 ℃ , 3 ± 0.3 sec</td><td>At least 95% of terminal electrode is covered by new solder</td></tr>
<tr><td>Resistance to Soldering Heat</td><td>IEC60068-2-20</td><td>260 ± 3 ℃ , 10 ± 1 sec</td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 3\ \%$</td></tr>
<tr><td>High Temperature Storage</td><td>IEC60068-2-2</td><td>200 ± 5 ℃ , 1000 ± 24 hrs</td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 5\ \%$</td></tr>
<tr><td>Damp Heat, Steady State</td><td>IEC60068-2-3</td><td>40 ± 2℃ ， 90~95% RH , 1000 ± 24 hrs</td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 3\ \%$</td></tr>
<tr><td>Rapid Change of Temperature</td><td>IEC60068-2-14</td><td>The conditions shown below shall be repeated 5 cycles
<table><tr><th>Step</th><th>Temperature (℃)</th><th>Period (minutes)</th></tr><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></table></td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 3\ \%$</td></tr>
<tr><td>Max. Power Dissipation</td><td>IEC 60539-1</td><td>25 ± 5℃, Pmax., 1000 ± 24 hrs</td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 5\ \%$</td></tr>
</table>

■ Packaging

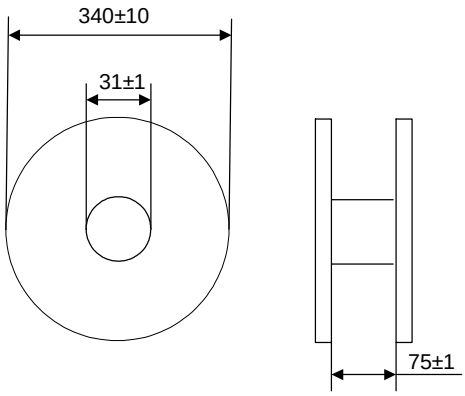
● Taping Specification

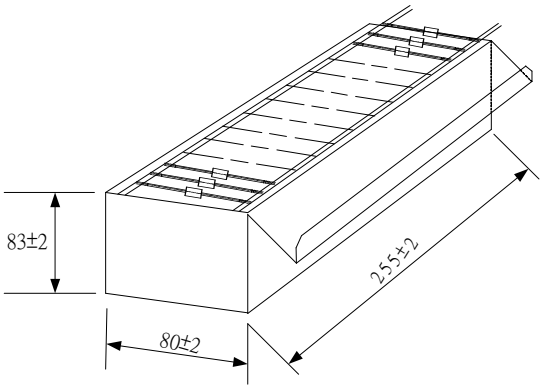


Type		W	P	|L1-L2|	T	Z	S
W= 52mm	MAX	53	5.5	1	7	1.2	0.8
	MIN	51	4.5	0	5	0	0

■ Quantity

- **Bulk Packing: 500 pcs/bag**
- **Reel Packing: 5000 pcs/reel**
- **Ammo Packing: 5000 pcs/box**





■ Storage Conditions of Products

- Storage Conditions：

  1.Storage Temperature ： -10℃~+40℃

  2.Relative Humidity： ≦75%RH

  3. Keep away from corrosive atmosphere and sunlight.

- Period of Storage ：1 year