

NTC Thermistor : DHT Series



Glass Axial Type for Temperature Sensing/Compensation

Electrical Characteristics

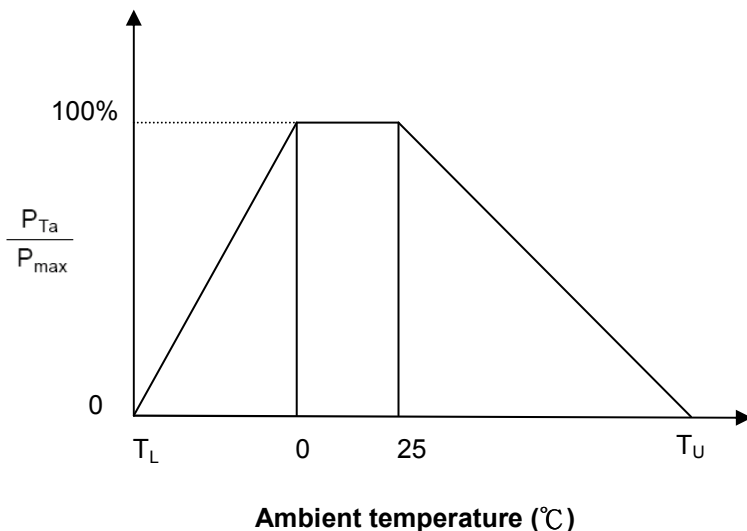
Part No.	Zero Power Resistance at 25°C	Tolerance of R ₂₅	B Value		Tolerance of B Value	Max. Power Dissipation at 25°C	Dissipation Factor	Thermal Time Constant	Operating Temperature Range	Safety Approvals	
	R ₂₅ (KΩ)	(±%)	(K)		(±%)	P _{max} (mW)	δ(mW/°C)	τ (Sec.)	T _L ~T _U (°C)	UL	cUL
DHT0A502□355*	5	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 R₂₅
* = Tolerance of B value

Note 2: UL/cUL File No: E138827

Note 3: Special specifications are available upon request.

Max. Power Dissipation Derating Curve



T_U : Maximum operating temperature (°C)

T_L : Minimum operating temperature (°C)

For example:

Ambient temperature (T_a) = 55°C

Maximum operating temperature (T_U) = 200°C

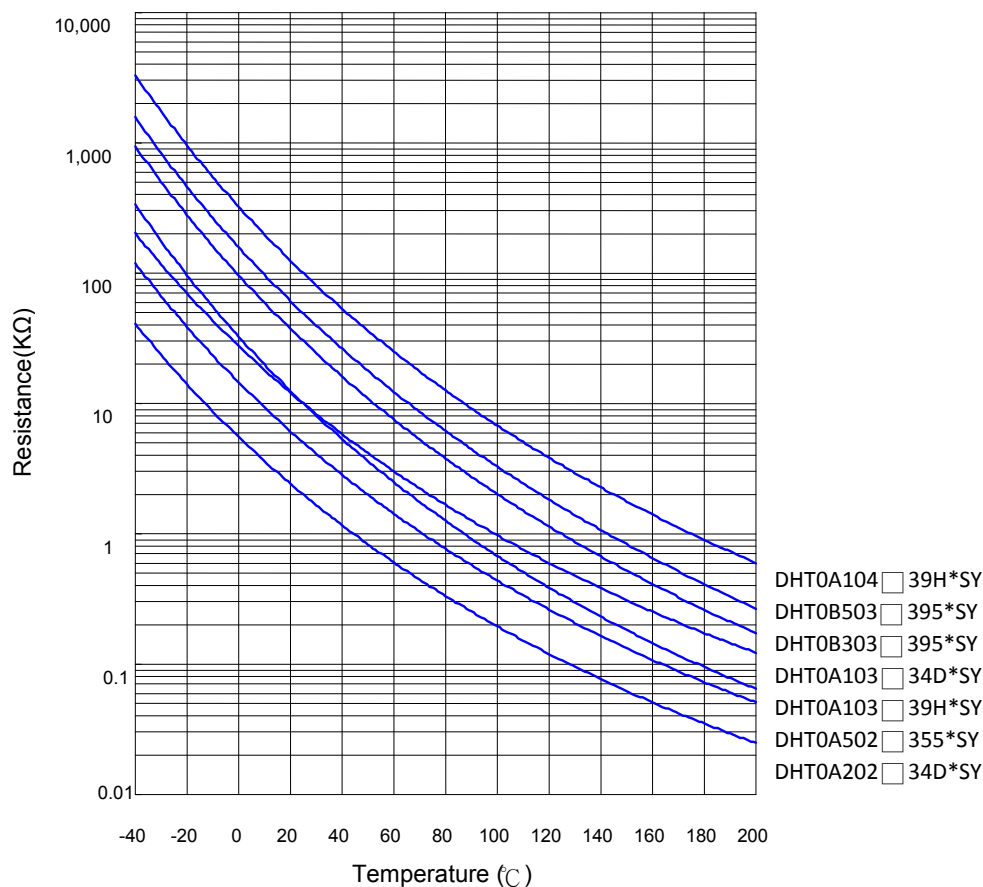
$P_{Ta} = (T_U - T_a) / (T_U - 25) \times P_{max} \cong 83\% P_{max}$

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■ R-T Characteristic Curves



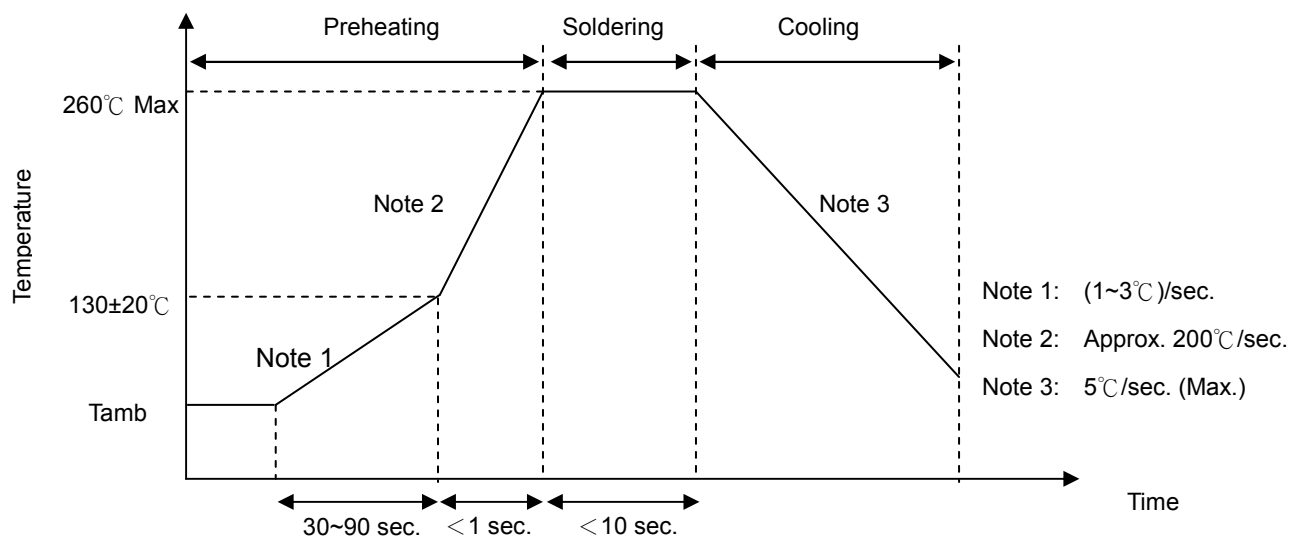
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■ Soldering Recommendation

● Wave Soldering Profile



● Recommended Reworking Conditions With Soldering Iron

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

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■ 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;">$0.3 < d \leq 0.5$</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;">$0.3 < d \leq 0.5$</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											
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$0.3 < d \leq 0.5$	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 style="text-align: center;">1</td> <td style="text-align: center;">-40 ± 5</td> <td style="text-align: center;">30 ± 3</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">Room temperature</td> <td style="text-align: center;">5 ± 3</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">200 ± 5</td> <td style="text-align: center;">30 ± 3</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">Room temperature</td> <td style="text-align: center;">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 %															

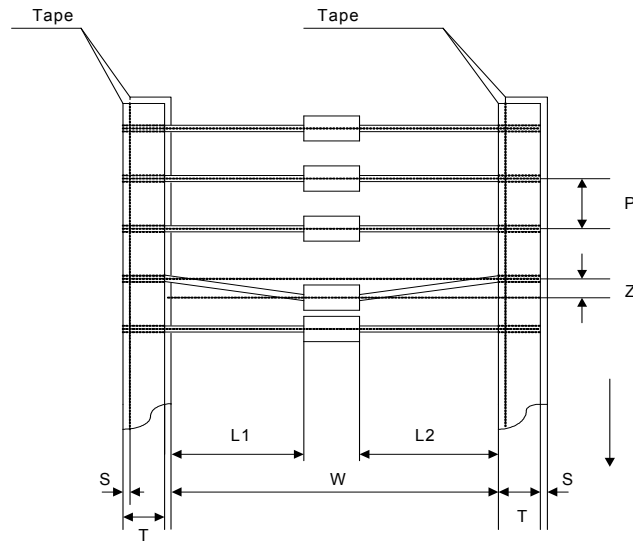
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■ Packaging

● Taping Specification

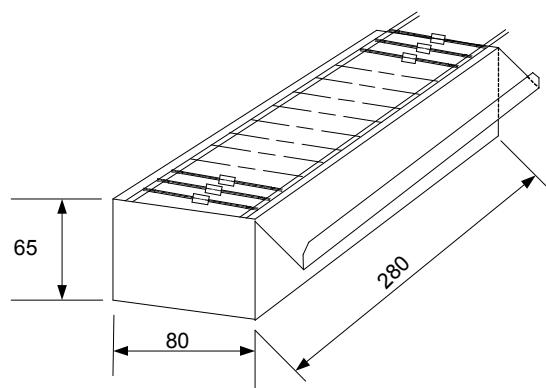
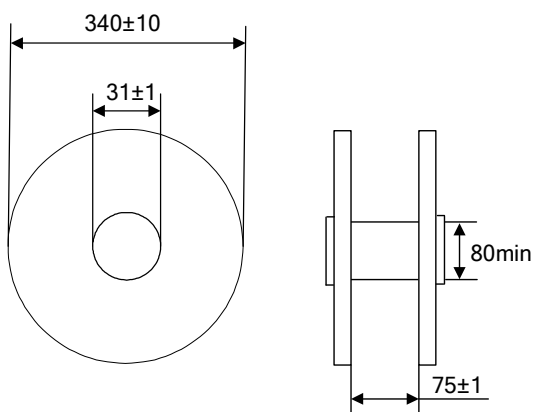


Item	W	P	L1-L2	T	Z	S
Max.	27	5.5	1	7	1.2	0.8
Min.	25	4.5	0	5	0	0
Max.	53	5.5	1	7	1.2	0.8
Min.	51	4.5	0	5	0	0

■ 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