

NTC Thermistor: XNF Series



Film Encapsulated Type for Temperature-controlled/Measure

XNF Features

1. RoHS compliant
2. Halogen-Free (HF) series are available
3. Radial leded insulation film coated
4. Operating temperature range: $-40^{\circ}\text{C}\sim+100^{\circ}\text{C}$

Recommended Applications

1. Home appliances
2. Computers
3. Battery packs

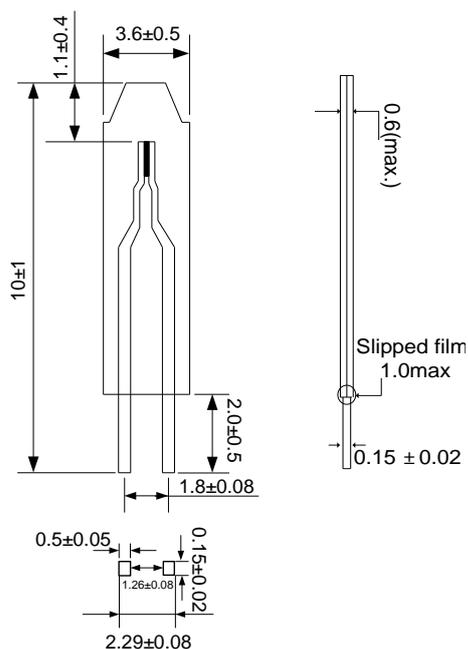
Part Number Code



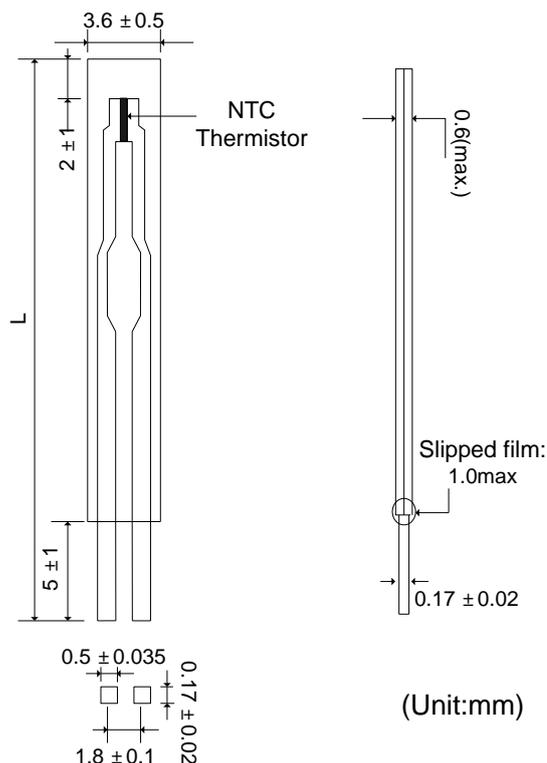
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
X	N	F	2	5	1	0	3	F	A	3	4	D	1	A	0		
XINGXIANG NTC Thermistor XNF Series			Size 25:25mm 50:50mm 75:75mm		Zero Power Resistance at 25°C (R25) $103:10 \times 10^3 \Omega$			Tolerance of R25 F:1% G:2% H:3% J:5% K:10% A:0.5% B:0.75%		Definition of B Value A:B25/85 B:B25/50 X:special			B Value The first two digits are unchanged and the latter represents two digits. 1:10...9:90 A:15 B:25...I:95 example 34D:3435 395:3950		Tolerance of B value 1:1% 2:2% 3:3%...		Optional suffix

Structure and Dimensions

For length is 10mm part



For length is 25 or 50 75mm part



(Unit:mm)

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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	
	R ₂₅ (KΩ)	(±%)	(K)	(±%)	P _{max} (mW)	δ(mW/°C)	τ (Sec.)	T _L ~T _U (°C)	
XNF□□502□A34D*	5	1, 2, 3, 5	25/85	3435	1, 2, 3	3.5	Approx. 0.7	Approx. 5	-40 ~ +100
XNF□□103□A34D*	10			3435					
XNF□□203□A34D*	20			3435					
XNF□□223□A4D*	22			3435					
XNF□□303□A39H*	30			3975					
XNF□□503□A408*	50			4080					
XNF□□104□A40H*	100			3435	2,3				

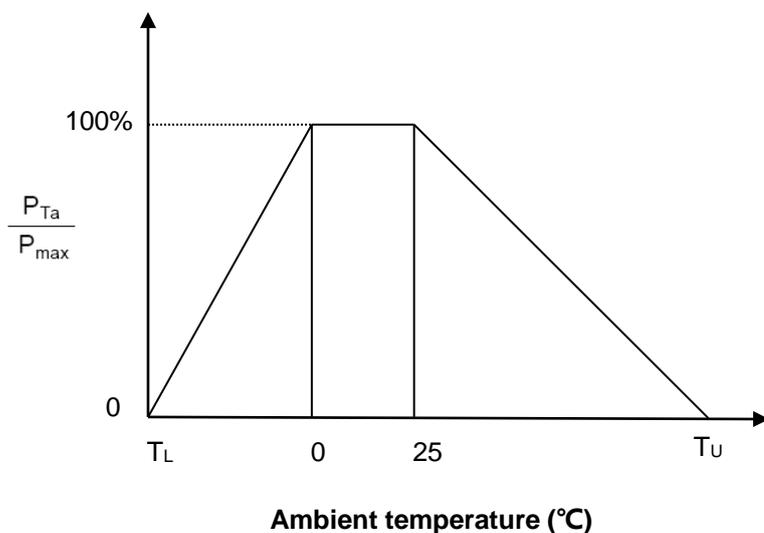
Note 1: □□ = Length

□ = Tolerance of R₂₅

* = Tolerance of B value

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) = 100°C

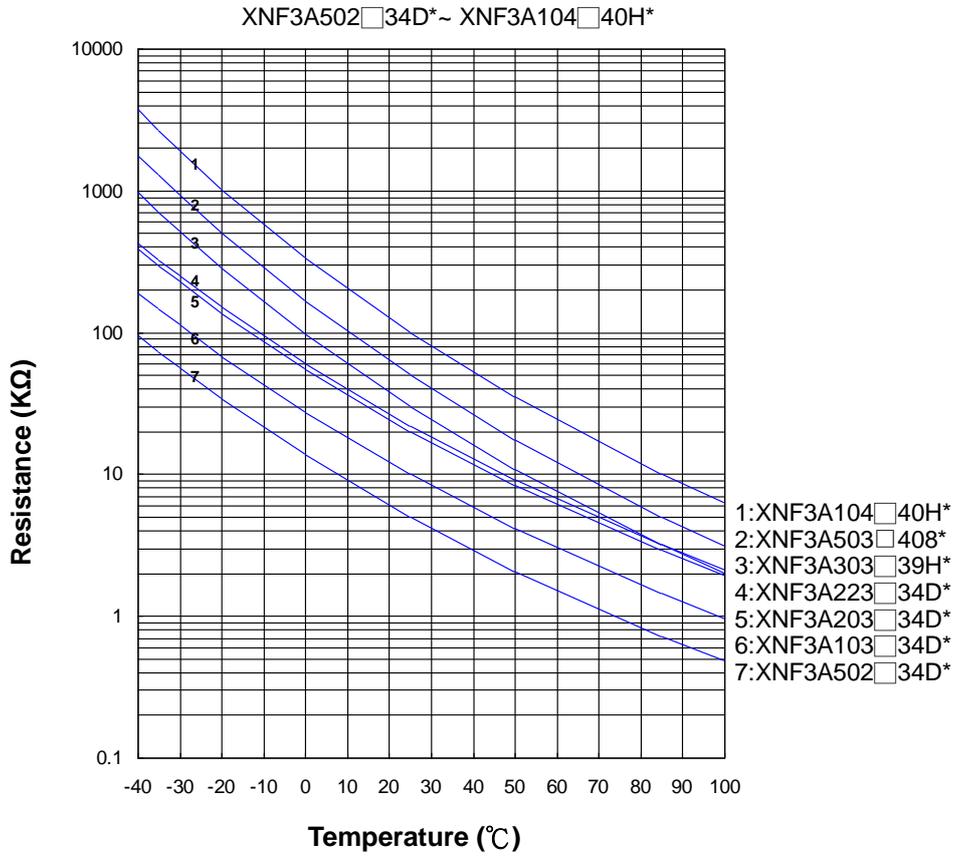
$P_{Ta} = (T_U - T_a) / (T_U - 25) \times P_{max} = 60\% P_{max}$

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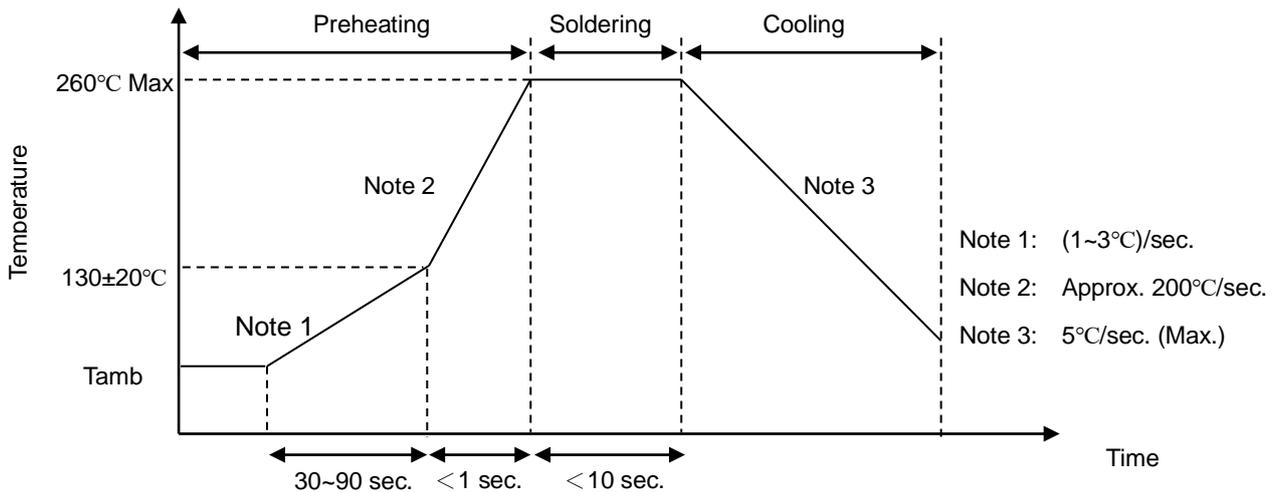


R-T Characteristic Curves



■ 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 Coating	Do not touch film bottom

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■ Reliability

Item	Standard	Test conditions / Methods	Specifications															
Tensile Strength of Terminals	IEC 60068-2-21	<p>Gradually apply the specified force and keep the unit fixed for 10±1 sec.</p> <table border="0"> <tr> <td style="text-align: center;">Terminal cross-sectional area (mm²)</td> <td style="text-align: center;">Force (Kg)</td> </tr> <tr> <td style="text-align: center;">—————</td> <td style="text-align: center;">—————</td> </tr> <tr> <td style="text-align: center;">0.05<S≤0.1</td> <td style="text-align: center;">0.25</td> </tr> </table>	Terminal cross-sectional area (mm ²)	Force (Kg)	—————	—————	0.05<S≤0.1	0.25	No visible damage									
Terminal cross-sectional area (mm ²)	Force (Kg)																	
—————	—————																	
0.05<S≤0.1	0.25																	
Bending Strength of Terminals	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 cross-sectional area (mm²)</td> <td style="text-align: center;">Force (Kg)</td> </tr> <tr> <td style="text-align: center;">—————</td> <td style="text-align: center;">—————</td> </tr> <tr> <td style="text-align: center;">0.05<S≤0.1</td> <td style="text-align: center;">0.125</td> </tr> </table>	Terminal cross-sectional area (mm ²)	Force (Kg)	—————	—————	0.05<S≤0.1	0.125	No visible damage									
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—————	—————																	
0.05<S≤0.1	0.125																	
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 ΔR ₂₅ /R ₂₅ ≤ 3 %															
High Temperature Storage	IEC 60068-2-2	100 ± 5°C, 1000 ± 24 hrs	No visible damage ΔR ₂₅ /R ₂₅ ≤ 5 %															
Damp Heat, Steady State	IEC 60068-2-78	40 ± 2°C, 90~95% RH, 1000 ± 24 hrs	No visible damage ΔR 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>100 ± 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	100 ± 5	30 ± 3	4	Room temperature	5 ± 3	No visible damage ΔR ₂₅ /R ₂₅ ≤ 3 %
Step	Temperature (°C)	Period (minutes)																
1	-40 ± 5	30 ± 3																
2	Room temperature	5 ± 3																
3	100 ± 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 ΔR ₂₅ /R ₂₅ ≤ 5 %															

■ Packaging

- Bulk Packing: 500 pcs/ bag

■ 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

