

## ■插件 NTC 热敏电阻器 PLUG-IN NTC THERMISTOR

### ◆ 特征 Feature

\*体积小、抑制浪涌电流能力强

Small size, strong ability to limit inrush current.

\*反应速度快

Fast reaction speed.

\*B 值大，残余电阻小；性能稳定，可靠性高

High B value and low residual resistance;

Stable performance and high reliability.



### ◆ 应用领域 Application

\*转换电源、开关电源、不间断电源

Power converter, switching power supply, UPS power supply.

\*电加热器、节能灯、白炽灯

Electric heater, energy-saving lamps, incandescent lamps.

\*充电器、适配器、逆变器

Charger, power adapter, power inverter.

\*变压器、马达软启动

Transformer and motor soft start.

### ◆ 型号表示法 Part number

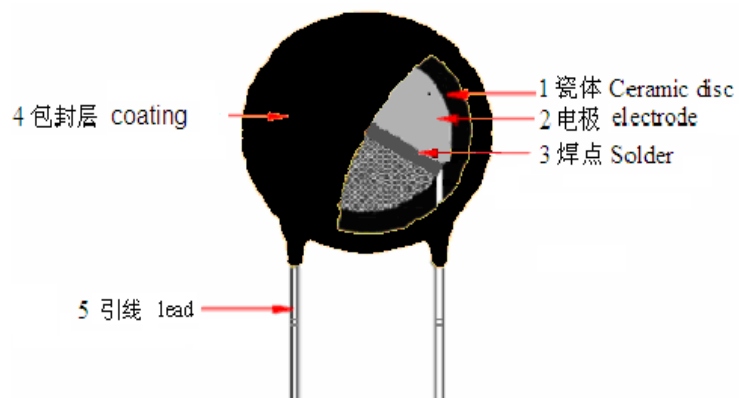
NTC	100	D11	M	F	2	E	3	S000	B	NN
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪

\*代码说明 Part number code description

序号 NO.	编 号 说 明 Description									
①	负温度系数 NTC Negative Temperature Coefficient									
②	电阻值 R <sub>25</sub> Resistance R <sub>25</sub>	2R5		5R0		100		101		...
		2.5Ω		5Ω		10Ω		100Ω		...
③	直径 Diameter	D05	D07	D09	D11	D13	D15	D20	D25	D30
		φ5mm	φ7mm	φ9mm	φ11mm	φ13mm	φ15mm	φ20mm	φ25mm	Φ30mm
④	电阻值公差 Tolerance of R <sub>25</sub>	K			L			M		
		±10%			±15%			±20%		
⑤	引脚形状 Lead style	A	S	F	B	C	H	L	P	W
		直脚 A 型 Straight Type A	直脚 S 型 Straight Type S	内弯 Inside kink	外弯 Outside kink	Y 型 Y type	侧弯 Side kink	窄口弯 Narrow mouth	P 型 P type	W 型 W type
⑥	脚距 Lead spacing	1		2		3		4		6
		5.0mm		7.5mm		10.0mm		4.0mm		3.5mm
⑦	引脚材质 Lead material	E					U			
		镀锡铜包钢线/CP 线 Tin plated copper clad steel wire					镀锡铜线 Tin plated copper wire			
⑧	引脚直径 Lead diameter	1	2	3	4	5	7	8		
		Φ0.5mm	Φ0.6mm	Φ0.8mm	Φ1.0mm	Φ0.7mm	Φ0.75mm	Φ1.3mm		
⑨	包装方式 Packing method	S000			C030			H160		
		散装/长脚 Bulk/Long lead			散装/短脚 Bulk/Short lead			编带 Tape		
					C030=3.0mm			H160:H <sub>0</sub> =16mm		
					C045=4.5mm			H180:H <sub>0</sub> =18mm		
					C100=10mm			H200:H <sub>0</sub> =20mm		
					...			...		
⑩	涂层颜色 Color	B					G			
		黑色 Black					绿色 Green			
⑪	内部识别码 Internal code									
备注 Note	NTC100D11MF2E3S000BNN 对应的型号 NTC 10D-11, 型号阻值 10=10Ω; 编码阻值 100=10*10 <sup>0</sup> =10Ω									

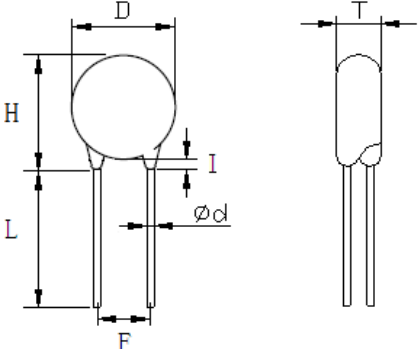
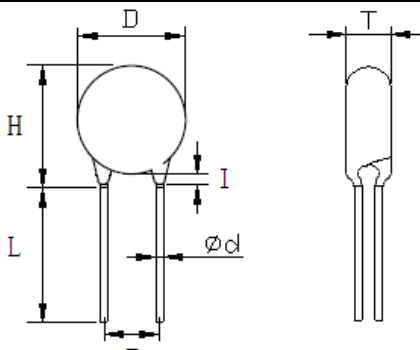
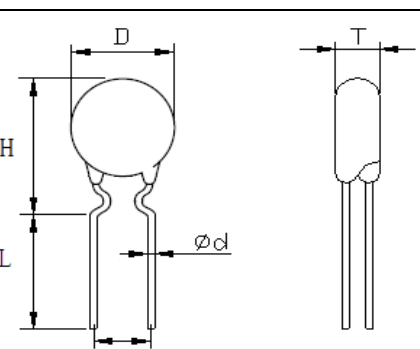
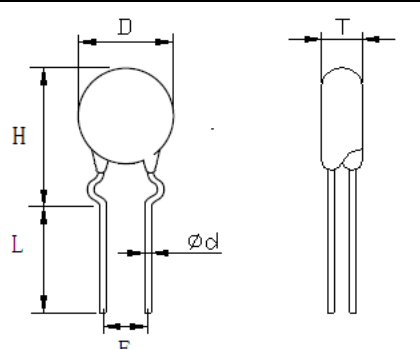
◆ 产品结构及尺寸 Product structure and dimensions

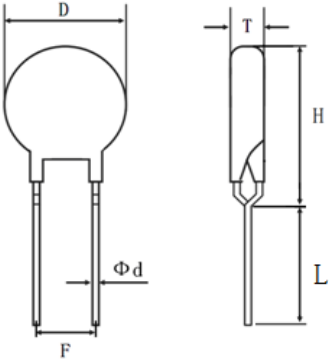
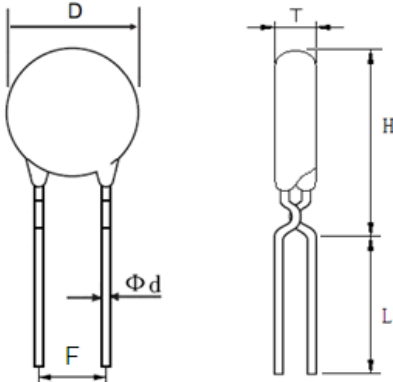
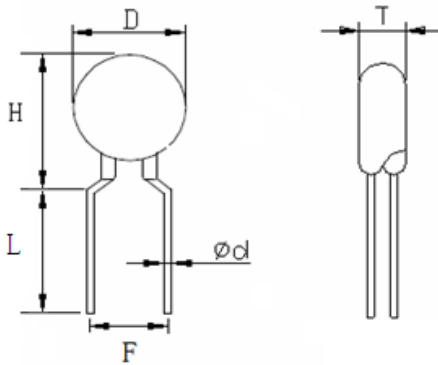
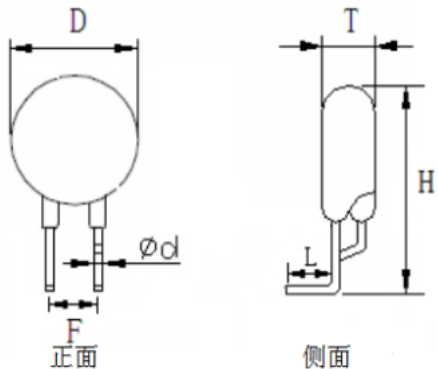
\*结构与材料 Construction and material

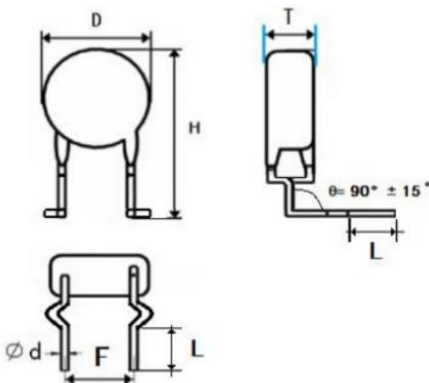


NO.	结构 Structure	物质成分 Material composition
1	瓷体 Ceramic disc	锰、镍、铜 Mn、Ni、Cu
2	电极 Electrode	银 Ag
3	焊点 Solder	锡、银、铜 Sn、Ag、Cu
4	包封层 Coating	改性树脂 Modified resin
5	引线 Lead	镀锡铜包钢线/镀锡铜线 Tin plated copper clad steel wire/Tin plated copper wire

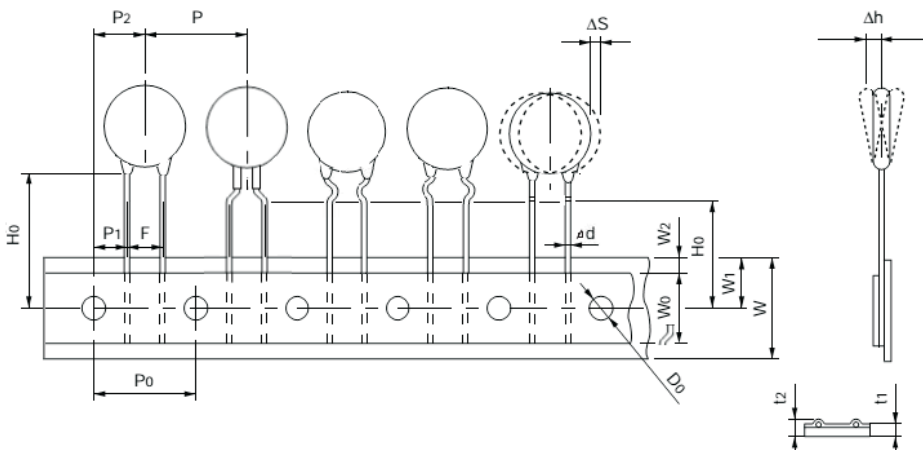
\*散装产品规格尺寸 Dimension specification of bulk packing products

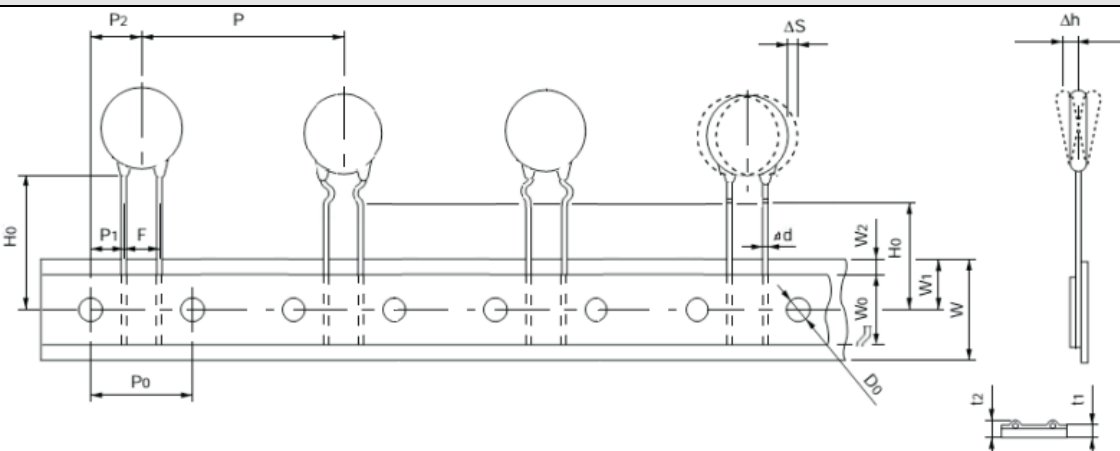
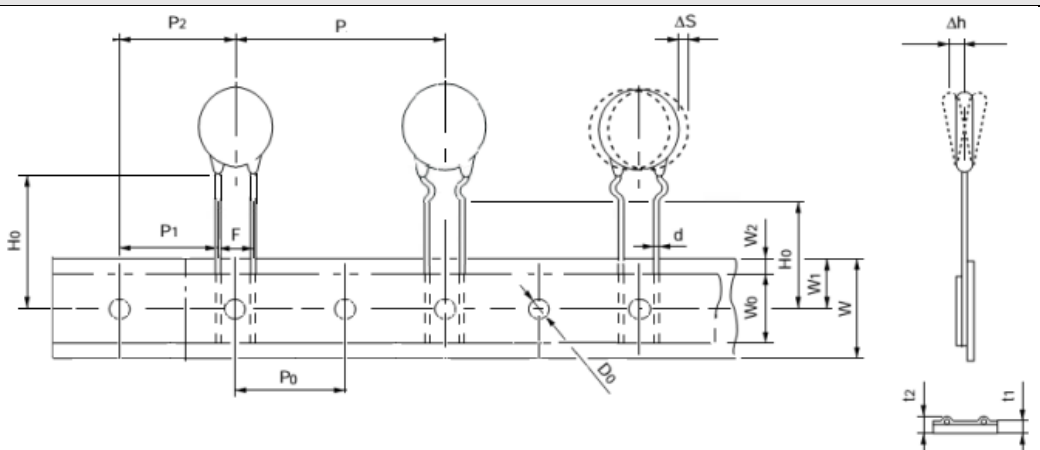
 <p>代号: A (直脚 A 型 Straight lead, Type A)</p>	型号 Model	D <sub>MAX</sub>	F	φd	I <sub>MAX</sub>	H <sub>MAX</sub>	L <sub>MAX</sub>	T <sub>MAX</sub>
	D-5	6.5	5.0±0.5	Φ0.6±0.05	2.0	9.0	20.0	5.0
	D-7	8.5	5.0±0.5	Φ0.6±0.05	2.0	12.0	20.0	5.0
	D-9	10.5	7.5±0.5	Φ0.8±0.05	2.5	14.0	20.0	5.0
	D-11	12.5	7.5±0.5	Φ0.8±0.05	3.0	16.0	20.0	5.0
	D-13	14.5	7.5±0.5	Φ0.8±0.05	3.0	18.0	20.0	6.0
	D-15	16.5	7.5±0.5	Φ0.8±0.05	3.0	20.0	20.0	6.0
	D-20	22.0	10±1.0	Φ1.0±0.05	3.0	26.0	20.0	7.0
	D-25	27.0	10±1.0	Φ1.0/1.3±0.05	3.0	32.0	20.0	7.5
D-30	33.0	10±1.0	Φ1.0/1.3±0.05	3.0	37.0	20.0	8.0	
 <p>代号: S (直脚 S 型 Straight lead, Type S)</p>	型号 Model	D <sub>MAX</sub>	F	φd	I <sub>MAX</sub>	H <sub>MAX</sub>	L <sub>MAX</sub>	T <sub>MAX</sub>
	D-5	6.5	5.0±0.5	Φ0.6±0.05	2.0	9.0	20.0	5.0
	D-7	8.5	5.0±0.5	Φ0.6±0.05	2.0	12.0	20.0	5.0
	D-9	10.5	7.5±0.5	Φ0.8±0.05	2.5	14.0	20.0	5.0
	D-11	12.5	7.5±0.5	Φ0.8±0.05	3.0	16.0	20.0	5.0
	D-13	14.5	7.5±0.5	Φ0.8±0.05	3.0	18.0	20.0	6.0
	D-15	16.5	7.5±0.5	Φ0.8±0.05	3.0	20.0	20.0	6.0
	D-20	22.0	10±1.0	Φ1.0±0.05	3.0	26.0	20.0	7.0
	D-25	27.0	10±1.0	Φ1.0/1.3±0.05	3.0	32.0	20.0	7.5
D-30	33.0	10±1.0	Φ1.0/1.3±0.05	3.0	37.0	20.0	8.0	
 <p>代号: F (内弯 Inside kink)</p>	型号 Model	D <sub>MAX</sub>	F	φd	H <sub>MAX</sub>	L <sub>MAX</sub>	T <sub>MAX</sub>	
	D-5	6.5	5.0±0.5	Φ0.6±0.05	12.5	20.0	5.0	
	D-7	8.5	5.0±0.5	Φ0.6±0.05	14.5	20.0	5.0	
	D-9	10.5	7.5±0.5	Φ0.8±0.05	16.5	20.0	5.0	
	D-11	12.5	7.5±0.5	Φ0.8±0.05	18.5	20.0	5.0	
	D-13	14.5	7.5±0.5	Φ0.8±0.05	20.5	20.0	6.0	
	D-15	16.5	7.5±0.5	Φ0.8±0.05	23.5	20.0	6.0	
	D-20	22.0	10±1.0	Φ1.0±0.05	29.0	20.0	7.0	
	D-25	27.0	10±1.0	Φ1.0/1.3±0.05	35.0	20.0	7.5	
D-30	33.0	10±1.0	Φ1.0/1.3±0.05	40.0	20.0	8.0		
 <p>代号: B (外弯 Outside kink)</p>	型号 Model	D <sub>MAX</sub>	F	φd	H <sub>MAX</sub>	L <sub>MAX</sub>	T <sub>MAX</sub>	
	D-5	6.5	5.0±0.5	Φ0.6±0.05	12.5	20.0	5.0	
	D-7	8.5	5.0±0.5	Φ0.6±0.05	14.5	20.0	5.0	
	D-9	10.5	7.5±0.5	Φ0.8±0.05	16.5	20.0	5.0	
	D-11	12.5	7.5±0.5	Φ0.8±0.05	18.5	20.0	5.0	
	D-13	14.5	7.5±0.5	Φ0.8±0.05	20.5	20.0	6.0	
	D-15	16.5	7.5±0.5	Φ0.8±0.05	23.5	20.0	6.0	
	D-20	22.0	10±1.0	Φ1.0±0.05	29.0	20.0	7.0	
	D-25	27.0	10±1.0	Φ1.0/1.3±0.05	35.0	20.0	7.5	
D-30	33.0	10±1.0	Φ1.0/1.3±0.05	40.0	20.0	8.0		

 <p>代号: C (Y 型 Y type)</p>	型号 Model	D <sub>MAX</sub>	F	φd	H <sub>MAX</sub>	L <sub>MAX</sub>	T <sub>MAX</sub>
	D-5	6.5	3.5±0.5 5.0±0.5	Φ0.6±0.05	11.0	20.0	5.0
	D-7	8.5	5.0±0.5	Φ0.6±0.05	13.0	20.0	5.0
	D-9	10.5	7.5±0.5	Φ0.8±0.05	15.0	20.0	5.0
	D-11	12.5	7.5±0.5	Φ0.8±0.05	17.0	20.0	5.0
	D-13	14.5	7.5±0.5	Φ0.8±0.05	20.0	20.0	6.0
	D-15	16.5	7.5±0.5	Φ0.8±0.05	22.0	20.0	6.0
	D-20	22.0	10±1.0	Φ1.0±0.05	28.0	20.0	7.0
	D-25	27.0	10±1.0	Φ1.0/1.3±0.05	35.0	20.0	7.5
	D-30	33.0	10±1.0	Φ1.0/1.3±0.05	40.0	20.0	8.0
 <p>代号: H (侧弯 Side kink)</p>	型号 Model	D <sub>MAX</sub>	F	φd	H <sub>MAX</sub>	L <sub>MAX</sub>	T <sub>MAX</sub>
	D-9	10.5	7.5±0.5	Φ0.8±0.05	15.0	20.0	5.0
	D-11	12.5	7.5±0.5	Φ0.8±0.05	17.0	20.0	5.0
	D-13	14.5	7.5±0.5	Φ0.8±0.05	20.0	20.0	6.0
	D-15	16.5	7.5±0.5	Φ0.8±0.05	22.0	20.0	6.0
	D-20	22.0	10±1.0	Φ1.0±0.05	28.0	20.0	7.0
 <p>代号: L (窄口弯 Narrow mouth)</p>	型号 Model	D <sub>MAX</sub>	F	φd	H <sub>MAX</sub>	L <sub>MAX</sub>	T <sub>MAX</sub>
	D-5	6.5	5.0±0.5	Φ0.6±0.05	9.0	20.0	5.0
 <p>代号: P (P 型 P type)</p>	型号 Model	D <sub>MAX</sub>	F	φd	H <sub>MAX</sub>	L	T <sub>MAX</sub>
	D-5	6.5	5.0±0.5	Φ0.6±0.05	11.0	3.5±0.5	5.0
	D-7	8.5	5.0±0.5	Φ0.6±0.05	13.0	3.5±0.5	5.0
	D-9	10.5	7.5±0.5	Φ0.8±0.05	15.0	3.5±0.5	5.0
	D-11	12.5	7.5±0.5	Φ0.8±0.05	17.0	3.5±0.5	5.0
	D-13	14.5	7.5±0.5	Φ0.8±0.05	20.0	3.5±0.5	6.0
	D-15	16.5	7.5±0.5	Φ0.8±0.05	22.0	3.5±0.5	6.0
	D-20	22.0	10±1.0	Φ1.0±0.05	28.0	3.5±0.5	7.0

 <p>代号: W (W 型 W type)</p>	型号 Model	D <sub>MAX</sub>	F	φd	H <sub>MAX</sub>	L	T <sub>MAX</sub>
	D-5	6.5	5.0±0.5	Φ0.6±0.05	12.5	3.5±0.5	5.0
	D-7	8.5	5.0±0.5	Φ0.6±0.05	14.5	3.5±0.5	5.0
	D-9	10.5	7.5±0.5	Φ0.8±0.05	16.5	3.5±0.5	5.0
	D-11	12.5	7.5±0.5	Φ0.8±0.05	18.5	3.5±0.5	5.0
	D-13	14.5	7.5±0.5	Φ0.8±0.08	20.5	3.5±0.5	6.0
	D-15	16.5	7.5±0.5	Φ0.8±0.05	23.5	3.5±0.5	6.0
	D-20	22.0	10±1	Φ1.0±0.08	29.0	3.5±0.5	7.0

\*编带产品规格尺寸 Specification dimension of taping products

图号 Fig NO.	图示 Drawing								
A									
型号 model	符号 Symbol	P0	P1	P2	P	H0	F	d	D0
D-5 D-7 D-9 D-11 (F=5.0)	尺寸 Dimensions	12.7	3.85	6.35	12.7	16.0	5.0	0.6/0.8	4.0
	公差 Tolerance	±0.3	±0.7	±1.3	±1.0	±1.0	±0.5	±0.05	±0.2
	符号 Symbol	W0	W1	W2	W	ΔS	Δh	t1	t2
	尺寸 Dimensions	10.0	9.0	3	18.0	2.0	2.0	0.6	1.6
	公差 Tolerance	Min	±0.5	Max	+1.0/-0.5	Max	Max	±0.2	Max
型号 model	符号 Symbol	P0	P1	P2	P	H0	F	d	D0
D-9 D-11 D-13 (F=7.5)	尺寸 Dimensions	15.0	3.75	7.5	15.0	16.0	7.5	0.8	4.0
	公差 Tolerance	±0.5	±0.7	±1.5	±1.0	±1.0	±0.5	±0.05	±0.2
	符号 Symbol	W0	W1	W2	W	ΔS	Δh	t1	t2
	尺寸 Dimensions	10.0	9.0	3	18.0	2.0	2.0	0.6	1.6
	公差 Tolerance	Min	±0.5	Max	+1.0/-0.5	Max	Max	±0.2	Max

图号 Fig NO.	图示 Drawing								
B									
型号 Model	符号 Symbol	P0	P1	P2	P	H0	F	d	D0
D-15 (F=7.5)	尺寸 Dimensions	15.0	3.75	7.5	30.0	16.0	7.5	0.8	4.0
	公差 Tolerance	±0.5	±0.7	±1.5	±1.0	±1.0	±0.5	±0.05	±0.2
	符号 Symbol	W0	W1	W2	W	ΔS	Δh	t1	t2
	尺寸 Dimensions	12.5	9.0	3	18.0	2.0	2.0	0.6	1.6
	公差 Tolerance	Min	±0.5	Max	+1.0/-0.5	Max	Max	±0.2	Max
图号 Fig NO.	图示 Drawing								
C									
型号 Model	符号 Symbol	P0	P1	P2	P	H0	F	d	D0
D-15 D-20 (F=7.5 / F=10.0)	尺寸 Dimensions	12.7	8.95	12.7	25.4	16.0	7.5/10.0	0.8/1.0	4.0
	公差 Tolerance	±0.5	±0.7	±1.3	±1.0	±1.0	±1.0	±0.05	±0.2
	符号 Symbol	W0	W1	W2	W	ΔS	ΔH	t1	t2
	尺寸 Dimensions	12.5	9.0	3	18.0	2.0	2.0	0.6	2.0
	公差 Tolerance	Min	±0.5	Max	+1.0/-0.5	Max	Max	±0.2	Max

**◆ 电性能参数 Electrical performance**

型号 Model	电阻值 @ 25℃ R <sub>25</sub> (Ω)	最大稳态 电流@25℃ Max.steady current, I <sub>max</sub> (A)	最大稳态 电流下的 残余电阻 Approx.R@I <sub>max</sub> (Ω)	最大允许电容量 @240V <sub>AC</sub> Max.allowable capacitance (μF)	B <sub>25/85</sub> 值 B <sub>25/85</sub> value (K)	耗散系数 Power dissipation coefficient (mW/℃)	热时间 常数 Time constant (s)	最大 功率 Max. power (W)	工作温度范围 Operating temperature range, T <sub>L</sub> ~T <sub>u</sub> (℃)
NTC 3D-5	3	2	0.415	100	2500	7	17	1.8	-40~150
NTC 4D-5	4	2	0.415	100	2500				
NTC 5D-5	5	2	0.429	100	2600				
NTC 6D-5	6	2	0.458	100	2600				
NTC 8D-5	8	1	1.089	100	2600				
NTC 9D-5	9	1	1.112	100	2600				
NTC 10D-5	10	1	1.126	100	2600				
NTC 12D-5	12	1	1.184	100	2600				
NTC 15D-5	15	1	1.202	100	2600				
NTC 16D-5	16	0.7	1.253	100	2600				
NTC 20D-5	20	0.6	1.275	100	2700				
NTC 22D-5	22	0.6	1.313	68	2700				
NTC 30D-5	30	0.5	1.429	68	2800				
NTC 33D-5	33	0.5	1.466	68	2800				
NTC 50D-5	50	0.5	1.727	68	2800				
NTC 60D-5	60	0.5	1.878	68	2800				
NTC 2.5D-7	2.5	3	0.205	100	2500	11	27	2.0	-40~150
NTC 3D-7	3	2.3	0.245	100	2600				
NTC 3.3D-7	3.3	2.3	0.245	100	2600				
NTC 4.7D-7	4.7	2.3	0.259	100	2700				
NTC 5D-7	5	2.3	0.273	100	2700				
NTC 8D-7	8	2	0.436	100	2700				
NTC 10D-7	10	1.5	0.572	100	2700				
NTC 12D-7	12	1.5	0.745	100	2700				
NTC 15D-7	15	1.5	0.846	100	2700				
NTC 16D-7	16	1.5	0.897	100	2700				
NTC 20D-7	20	0.8	0.995	100	2800				
NTC 22D-7	22	0.8	1.096	100	2800				
NTC 30D-7	30	0.7	1.345	100	2900				
NTC 33D-7	33	0.7	1.475	100	2900				
NTC 1.5D-9	1.5	4	0.145	150	2500	12	38	2.3	-40~170
NTC 2D-9	2	4	0.145	150	2500				
NTC 2.5D-9	2.5	4	0.145	150	2600				
NTC 3D-9	3	4	0.150	150	2600				



型号 Model	电阻值 @ 25℃ R <sub>25</sub> (Ω)	最大稳态 电流@25℃ Max.steady current,I <sub>max</sub> (A)	最大稳态 电流下的 残余电阻 Approx.R@I <sub>max</sub> (Ω)	最大允许电容量 @240V <sub>AC</sub> Max.allowable capacitance (μF)	B <sub>25/85</sub> 值 B <sub>25/85</sub> value (K)	耗散系数 Power dissipation coefficient (mW/℃)	热时间 常数 Time constant (s)	最大 功率 Max. power (W)	工作温度范围 Operating temperature range,T <sub>L</sub> ~T <sub>u</sub> (℃)
NTC 4D-9	4	3	0.190	220	2600				
NTC 4.7D-9	4.7	3	0.246	220	2700				
NTC 5D-9	5	3	0.261	220	2700				
NTC 6D-9	6	3	0.283	220	2700				
NTC 7D-9	7	3	0.287	220	2700				
NTC 8D-9	8	2.2	0.520	220	2700				
NTC 10D-9	10	2	0.542	220	2700				
NTC 12D-9	12	2	0.545	220	2800				
NTC 15D-9	15	2	0.548	150	2800				
NTC 16D-9	16	2	0.570	150	2800				
NTC 20D-9	20	1	0.864	150	2800				
NTC 22D-9	22	1	0.950	150	2800				
NTC 25D-9	25	1	0.986	100	2900	12	38	2.3	-40~170
NTC 30D-9	30	1	1.022	100	2900				
NTC 33D-9	33	1	1.124	100	2900				
NTC 50D-9	50	1	1.252	100	2900				
NTC 60D-9	60	0.8	1.502	100	3000				
NTC 80D-9	80	0.8	2.010	100	3000				
NTC 100D-9	100	0.8	2.516	100	3000				
NTC 120D-9	120	0.8	3.015	100	3000				
NTC 200D-9	200	0.5	5.007	100	3100				
NTC 300D-9	300	0.5	6.105	100	3200				
NTC 1D-11	1	5	0.091	470	2500	13	43	2.4	-40~170
NTC 1.3D-11	1.3	5	0.110	470	2500				
NTC 1.5D-11	1.5	5	0.120	470	2500				
NTC 2D-11	2	5	0.120	470	2500				
NTC 2.5D-11	2.5	5	0.120	470	2600				
NTC 3D-11	3	5	0.127	560	2600				
NTC 4D-11	4	4	0.161	560	2700				
NTC 5D-11	5	4	0.180	470	2700				
NTC 6.8D-11	6.8	3	0.270	330	2700				
NTC 8D-11	8	3	0.278	330	2800				
NTC 10D-11	10	3	0.297	330	2800				
NTC 12D-11	12	3	0.301	470	2800				
NTC 13D-11	13	3	0.356	330	2800				

型号 Model	电阻值 @ 25℃ R <sub>25</sub> (Ω)	最大稳态 电流 @ 25℃ Max. steady current, I <sub>max</sub> (A)	最大稳态 电流下的 残余电阻 Approx. R @ I <sub>max</sub> (Ω)	最大允许电容量 @ 240V <sub>AC</sub> Max. allowable capacitance (μF)	B <sub>25/85</sub> 值 B <sub>25/85</sub> value (K)	耗散系数 Power dissipation coefficient (mW/℃)	热时间 常数 Time constant (s)	最大 功率 Max. power (W)	工作温度范围 Operating temperature range, T <sub>L</sub> ~T <sub>U</sub> (℃)
NTC 15D-11	15	2.5	0.442	330	2800				
NTC 16D-11	16	2.5	0.471	330	2800				
NTC 20D-11	20	2	0.646	330	2900				
NTC 22D-11	22	2	0.659	330	2900				
NTC 25D-11	25	2	0.674	330	2900				
NTC 30D-11	30	2	0.700	330	2900				
NTC 33D-11	33	2	0.708	330	3000				
NTC 47D-11	47	2	0.720	330	3000				
NTC 50D-11	50	2	0.813	330	3000				
NTC 60D-11	60	1.5	1.215	220	3000				
NTC 80D-11	80	1.2	1.656	220	3100				
NTC 100D-11	100	1.2	2.218	220	3100				
NTC 120D-11	120	1.2	2.330	220	3100				
NTC 1D-13	1	7	0.088	560	2600	18	66	3.1	-40~200
NTC 1.3D-13	1.3	7	0.094	560	2600				
NTC 1.5D-13	1.5	6	0.084	560	2600				
NTC 2.5D-13	2.5	6	0.094	560	2700				
NTC 3D-13	3	6	0.104	560	2700				
NTC 4D-13	4	5	0.132	560	2700				
NTC 4.7D-13	4.7	5	0.158	560	2800				
NTC 5D-13	5	5	0.166	560	2800				
NTC 6D-13	6	4	0.177	470	2800				
NTC 7D-13	7	4	0.184	470	2800				
NTC 8D-13	8	4	0.206	470	2800				
NTC 10D-13	10	4	0.217	470	2900				
NTC 12D-13	12	4	0.230	560	2900	18	66	3.1	-40~200
NTC 15D-13	15	3	0.343	560	2900				
NTC 16D-13	16	3	0.348	560	2900				
NTC 18D-13	18	3	0.365	560	2900				
NTC 20D-13	20	3	0.410	470	3000				
NTC 22D-13	22	3	0.453	470	3000				
NTC 30D-13	30	2.5	0.517	470	3000				
NTC 33D-13	33	2.5	0.554	470	3100				
NTC 47D-13	47	2.5	0.663	470	3100				
NTC 60D-13	60	2	1.002	470	3200				

型号 Model	电阻值 @ 25℃ R <sub>25</sub> (Ω)	最大稳态 电流 @ 25℃ Max.steady current, I <sub>max</sub> (A)	最大稳态 电流下的 残余电阻 Approx.R @ I <sub>max</sub> (Ω)	最大允许电容量 @ 240V <sub>AC</sub> Max.allowable capacitance (μF)	B <sub>25/85</sub> 值 B <sub>25/85</sub> value (K)	耗散系数 Power dissipation coefficient (mW/℃)	热时间 常数 Time constant (s)	最大 功率 Max. power (W)	工作温度范围 Operating temperature range, T <sub>L</sub> ~T <sub>U</sub> (℃)
NTC 120D-13	120	1.5	2.124	470	3300				
NTC 0.7D-15	0.7	8	0.055	680	2600	21	75	3.6	-40~200
NTC 1D-15	1	9	0.060	680	2600				
NTC 1.3D-15	1.3	8	0.064	680	2600				
NTC 1.5D-15	1.5	8	0.068	820	2600				
NTC 2D-15	2	8	0.078	680	2600				
NTC 2.2D-15	2.2	8	0.083	680	2600				
NTC 2.5D-15	2.5	8	0.086	680	2700				
NTC 3D-15	3	7	0.091	820	2700				
NTC 4D-15	4	6	0.117	820	2800				
NTC 5D-15	5	6	0.121	820	2800				
NTC 6D-15	6	5	0.159	680	2800				
NTC 7D-15	7	5	0.161	820	2900				
NTC 8D-15	8	5	0.165	680	2900				
NTC 10D-15	10	5	0.178	820	2900				
NTC 12D-15	12	5	0.185	680	2900				
NTC 15D-15	15	4	0.261	820	3000				
NTC 16D-15	16	4	0.265	820	3000				
NTC 18D-15	18	4	0.273	680	3000				
NTC 20D-15	20	4	0.283	820	3000				
NTC 22D-15	22	4	0.308	560	3000				
NTC 25D-15	25	3.5	0.398	680	3100				
NTC 30D-15	30	3.5	0.425	680	3100				
NTC 33D-15	33	3.5	0.454	560	3100				
NTC 40D-15	40	3	0.511	680	3100				
NTC 47D-15	47	3	0.517	680	3200				
NTC 47D-15	47	2.5	0.617	560	3300				
NTC 80D-15	80	2.5	0.693	560	3300				
NTC 120D-15	120	2	1.010	560	3500				
NTC 1D-20	1	13	0.035	1000	2600	28	113	4.9	-40~200
NTC 1.3D-20	1.3	11	0.037	1000	2600				
NTC 1.5D-20	1.5	10.5	0.041	1000	2600				
NTC 2D-20	2	10	0.062	1000	2700				
NTC 2.5D-20	2.5	9	0.073	1000	2800				
NTC 3D-20	3	8.5	0.078	1000	2800				

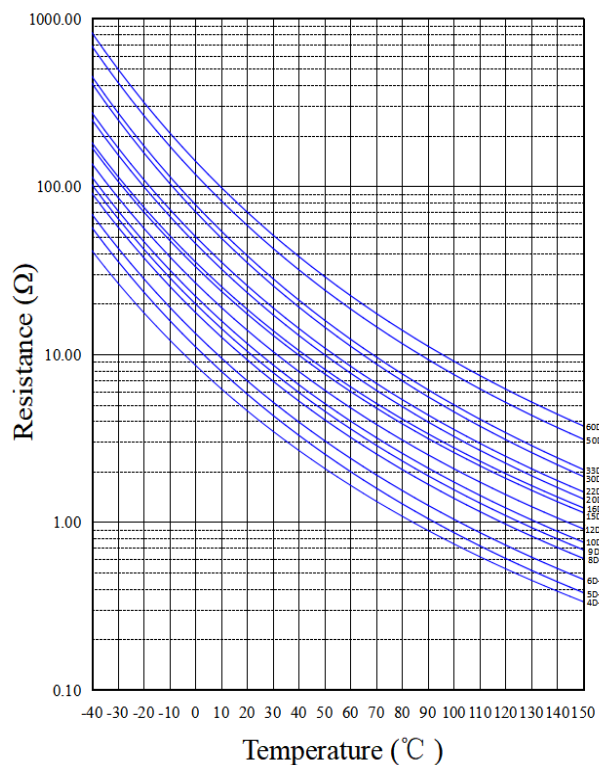
型号 Model	电阻值 @ 25℃ R <sub>25</sub> (Ω)	最大稳态 电流@25℃ Max.steady current,I <sub>max</sub> (A)	最大稳态 电流下的 残余电阻 Approx.R@I <sub>max</sub> (Ω)	最大允许电容量 @240V <sub>AC</sub> Max.allowable capacitance (μF)	B <sub>25/85</sub> 值 B <sub>25/85</sub> value (K)	耗散系数 Power dissipation coefficient (mW/℃)	热时间 常数 Time constant (s)	最大 功率 Max. power (W)	工作温度范围 Operating temperature range,T <sub>L</sub> ~T <sub>u</sub> (℃)
NTC 4D-20	4	8	0.080	1000	2900				
NTC 4.7D-20	4.7	7.5	0.114	1000	2900				
NTC 5D-20	5	7.5	0.118	1000	2900				
NTC 6D-20	6	7	0.120	1000	2900				
NTC 6.8D-20	6.8	6.5	0.130	1000	2900				
NTC 7D-20	7	6.5	0.132	1000	2900				
NTC 8D-20	8	6	0.161	1000	3000				
NTC 10D-20	10	6	0.162	1000	3000				
NTC 12D-20	12	5.5	0.180	1000	3000				
NTC 13D-20	13	5.5	0.195	1000	3000				
NTC 15D-20	15	5	0.205	1000	3100				
NTC 16D-20	16	5	0.212	1000	3100				
NTC 18D-20	18	4.5	0.260	1000	3100				
NTC 20D-20	20	4.5	0.275	1000	3100				
NTC 25D-20	25	4	0.365	1000	3100				
NTC 30D-20	30	4	0.398	1000	3200				
NTC 47D-20	47	4	0.497	1000	3300				
NTC 1D-25	1	20	0.020	1200	2700	30	130	7.0	-40~200
NTC 1.5D-25	1.5	18.5	0.023	1200	2700				
NTC 2D-25	2	16	0.025	1200	2700				
NTC 2.5D-25	2.5	15	0.032	1200	2800				
NTC3D-25	3	14.5	0.042	1200	2800				
NTC 4D-25	4	14	0.044	1200	2900				
NTC 4.7D-25	4.7	13	0.052	1200	2900				
NTC 5D-25	5	12	0.061	1200	2900				
NTC 6.8D-25	6.8	10.5	0.082	1200	3000				
NTC 7D-25	7	10	0.092	1200	3000				
NTC 8D-25	8	9	0.115	1200	3100				
NTC 10D-25	10	8	0.141	1200	3100				
NTC 12D-25	12	7.5	0.164	1200	3100				
NTC 15D-25	15	6.5	0.210	1200	3200				
NTC 18D-25	18	5.5	0.231	1200	3200				
NTC 20D-25	20	5	0.270	1200	3200				
NTC 1D-30	1	30	0.016	1500	2800				
NTC 1.5D-30	1.5	25	0.020	1500	2800				

型号 Model	电阻值 @ 25℃ R <sub>25</sub> (Ω)	最大稳态 电流 @ 25℃ Max.steady current, I <sub>max</sub> (A)	最大稳态 电流下的 残余电阻 Approx.R @ I <sub>max</sub> (Ω)	最大允许电容量 @ 240V <sub>AC</sub> Max.allowable capacitance (μF)	B <sub>25/85</sub> 值 B <sub>25/85</sub> value (K)	耗散系数 Power dissipation coefficient (mW/℃)	热时间 常数 Time constant (s)	最大 功率 Max. power (W)	工作温度范围 Operating temperature range, T <sub>L</sub> ~T <sub>U</sub> (℃)
NTC 2D-30	2	20	0.022	1500	2900	40	190	8.0	-40~200
NTC2.5D-30	2.5	18	0.030	1500	2900				
NTC3D-30	3	17	0.035	1500	2900				
NTC 4D-30	4	16	0.048	1500	3000				
NTC 4.7D-30	4.7	15	0.055	1500	3000				
NTC 5D-30	5	14	0.057	1500	3000				
NTC 6.8D-30	6.8	12	0.077	1500	3100				
NTC 7D-30	7	11.5	0.084	1500	3100				
NTC 8D-30	8	10.5	0.100	1500	3100				
NTC 10D-30	10	10	0.115	1500	3100				
NTC 12D-30	12	9	0.142	1500	3200				
NTC 15D-30	15	8	0.175	1500	3200				
NTC 18D-30	18	7	0.210	1500	3300				
NTC 20D-30	20	6	0.233	1500	3300				

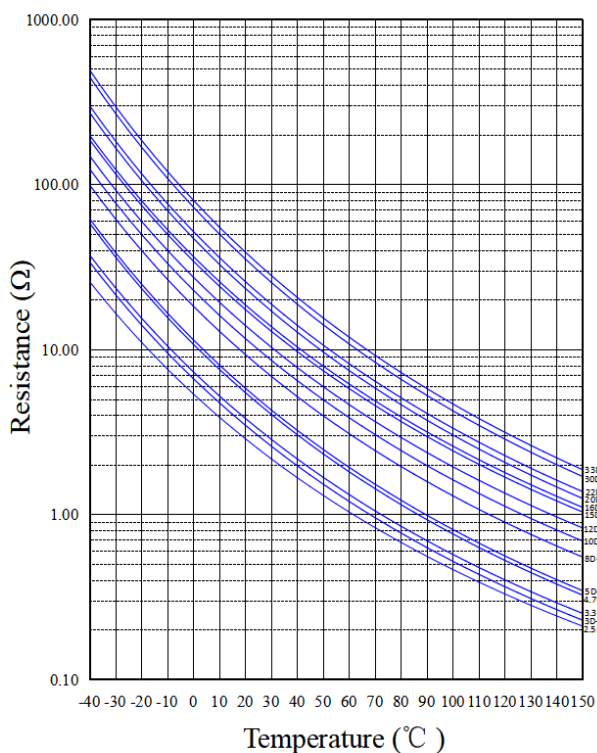
**◆ 可靠性测试方法 Reliability test method**

测试项目 Test item	测试方法 Test method	性能要求 Specification requirement								
引线端子抗拉强度 Tensile strength of lead wire	<p>固定热敏电阻本体，沿引线端子轴向逐渐施加负载，直至达到下表所示的负载值，保持 10±1 秒。Fix the thermistor body, gradually apply a load along the axial direction of the lead terminals until reaching the force value specified in the table below, and hold it for 10±1 seconds.</p> <table><tr><td>线径 Terminal diameter (mm)</td><td>拉力 Force (N)</td></tr><tr><td>0.5 &lt; d ≤ 0.8</td><td>10</td></tr><tr><td>0.8 &lt; d ≤ 1.25</td><td>20</td></tr><tr><td>1.25 &lt; d</td><td>40</td></tr></table>	线径 Terminal diameter (mm)	拉力 Force (N)	0.5 < d ≤ 0.8	10	0.8 < d ≤ 1.25	20	1.25 < d	40	<p>无可见损伤 电阻变化率 ≤ ±10% No visible damage R<sub>25</sub> change within ±10%</p>
线径 Terminal diameter (mm)	拉力 Force (N)									
0.5 < d ≤ 0.8	10									
0.8 < d ≤ 1.25	20									
1.25 < d	40									
引线端子弯曲强度 Bending strength of lead wire	<p>将热敏电阻垂直于引线固定，沿引线轴向悬挂下表所示负载,将引线弯曲 90°并复原，然后再慢慢朝相反方向弯曲，并慢慢恢复到原始状态。Secure thermistor perpendicular to its leads, suspend the load specified in the table below along the axial direction of the lead wires, bend the leads to a 90°angle and restore them to their original position, then slowly bend them in the opposite direction and slowly return them to their original state.</p> <table><tr><td>线径 Terminal diameter (mm)</td><td>拉 Force (N)</td></tr><tr><td>0.5 &lt; d ≤ 0.8</td><td>5</td></tr><tr><td>0.8 &lt; d ≤ 1.25</td><td>10</td></tr><tr><td>1.25 &lt; d</td><td>20</td></tr></table>	线径 Terminal diameter (mm)	拉 Force (N)	0.5 < d ≤ 0.8	5	0.8 < d ≤ 1.25	10	1.25 < d	20	<p>引线不折断 电阻变化率 ≤ ±10% No breakage of lead wire R<sub>25</sub> change within ±10%</p>
线径 Terminal diameter (mm)	拉 Force (N)									
0.5 < d ≤ 0.8	5									
0.8 < d ≤ 1.25	10									
1.25 < d	20									
振动 Vibration	<p>频率 Frequency: 10~55 Hz; 振幅 Amplitude modulation: 0.75 mm; 方向和时间 Direction and time: X、Y 及 Z 轴各 2 小时; X、Y and Z direction for 2 hours each.</p>	<p>无可见损伤 No visible damage</p>								
可焊性 Solderability	<p>锡槽温度 Solder bath temperature: 245 ± 5℃ 时间 Time: 3 ± 0.5 s</p>	<p>上锡面积 ≥ 95% Tin coverage ≥ 95%</p>								
耐焊接热 Soldering heat endurance	<p>把引线浸入 260 ± 5℃的焊锡 4.0 ± 0.8mm 深，持续 10 ± 1 秒时间，样品室温静置 24 小时后测试阻值。Immerse the leads into solder at 260 ± 5℃ to a depth of 4.0 ± 0.8 mm, duration 10 ± 1 seconds, test resistance after sample exposure at room temperature more than 24 hours.</p>	<p>电阻变化率 ≤ ±10% R<sub>25</sub> change within ±10%</p>								
高温放置 Storage in dry heat	<p>在 T<sub>U</sub>±2℃中放置 1000-0/+48 小时，室温静置 2 小时后测试阻值 Specimen subjected to temperature T<sub>U</sub> ± 2℃ for 1000-0/+48 hours, test resistance after exposure at room temperature more than 2 hours.</p>	<p>电阻变化率 ≤ ±20% R<sub>25</sub> change within ±20%</p>								
低温放置 Storage in cold	<p>在 -40 ± 3℃中放置 1000-0/+48 小时，室温静置 2 小时后测试阻值 Specimen subjected to temperature -40 ± 3℃ for 1000-0/+48 hours, test resistance after exposure at room temperature more than 2 hours.</p>	<p>电阻变化率 ≤ ±20% R<sub>25</sub> change within ±20%</p>								
稳态湿热 Storage in dump heat	<p>温度 Temperature: 40 ± 2℃，相对湿度 Relative humidity: 90~95%RH, 时间 Time: 1000hours</p>	<p>电阻变化率 ≤ ±20% R<sub>25</sub> change within ±20%</p>								
温度快速变化 Rapid change temperature	<p>-40℃/30min → 25℃/5min → T<sub>U</sub>/30min → 25℃/5min 循环五个周期 5 cycles</p>	<p>电阻变化率 ≤ ±20% R<sub>25</sub> change within ±20%</p>								
最大电流 Current endurance	<p>① 25±5℃，I<sub>max</sub>, 1min On / 5 min Off, 1000 cycles ② 25±5℃，I<sub>max</sub>, 1000 hours</p>	<p>电阻变化率 ≤ ±20% R<sub>25</sub> change within ±20%</p>								

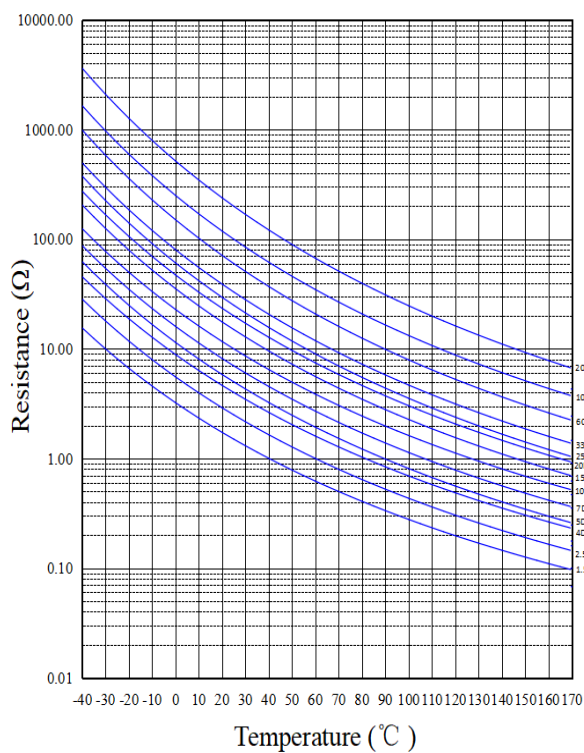
◆ 产品特性曲线图 Characteristic curves



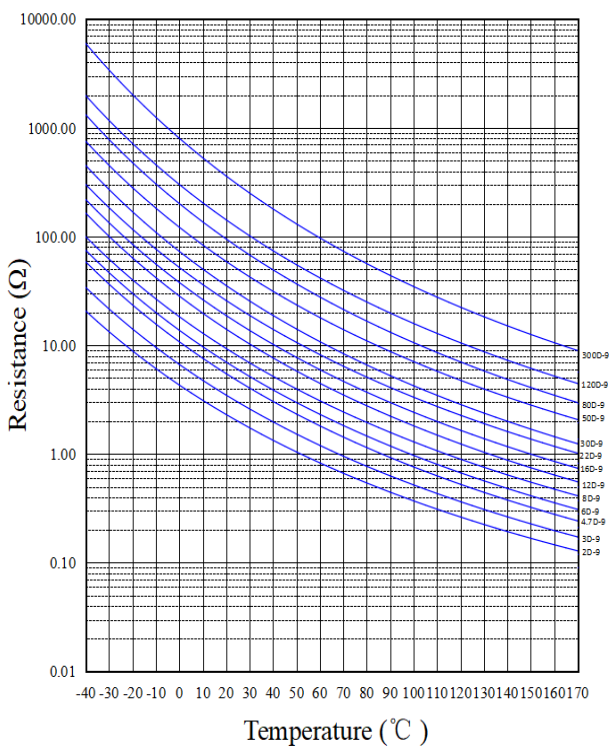
D-5 系列 R-T 曲线 D-5 series R-T Characteristic curves



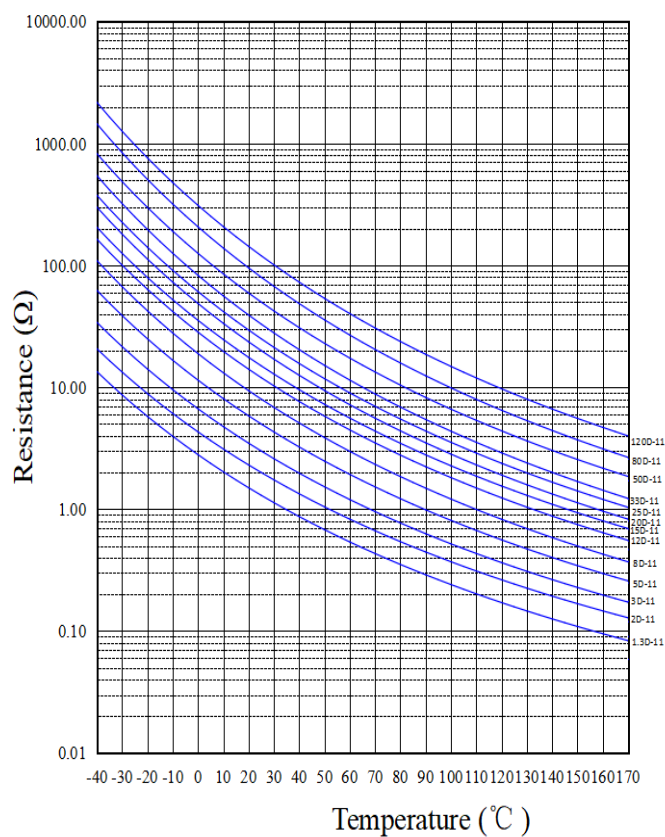
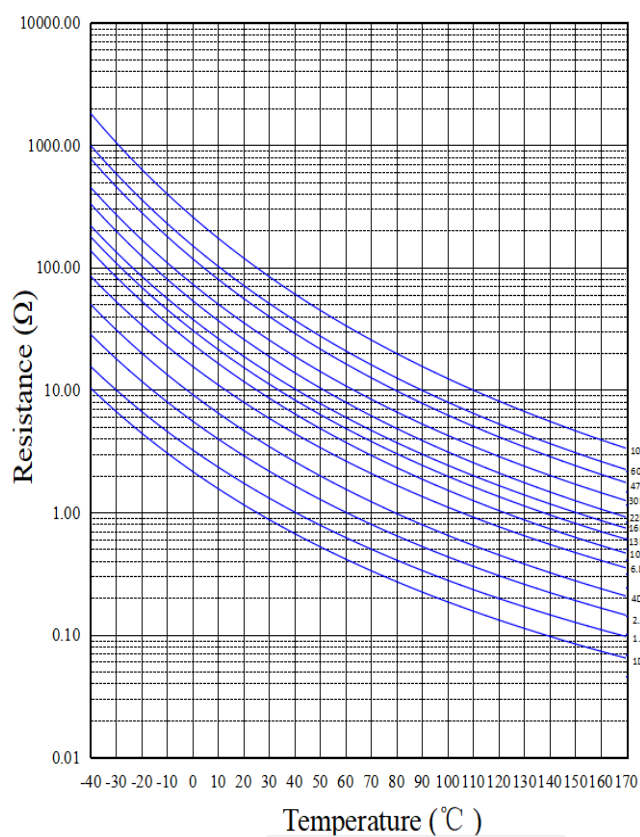
D-7 系列 R-T 曲线 D-7 series R-T Characteristic curves



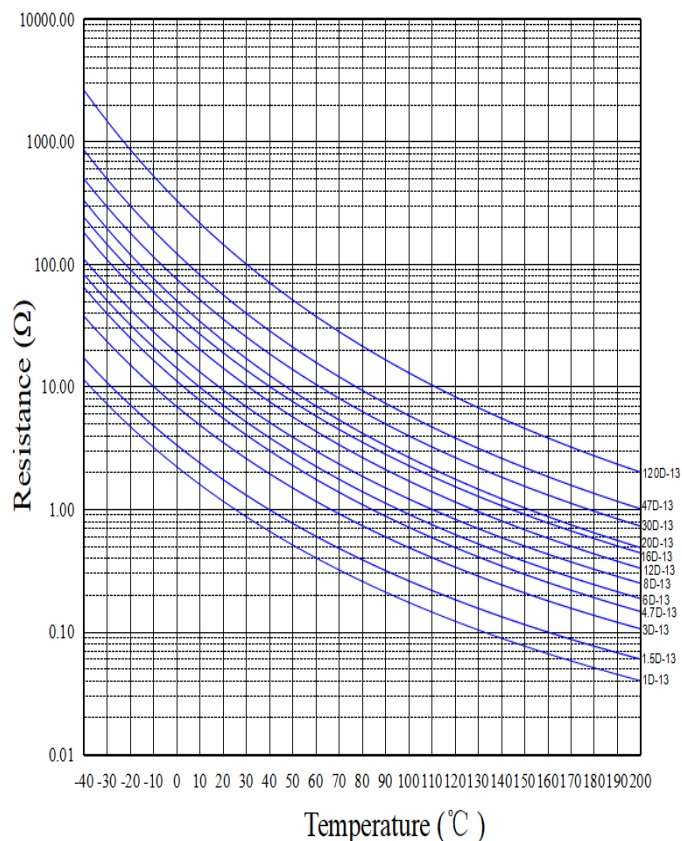
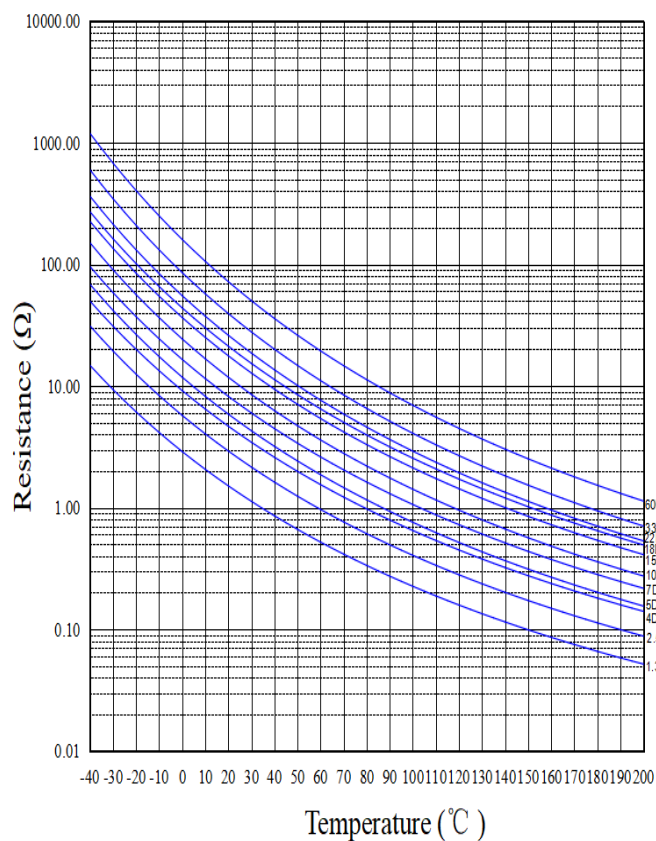
D-9 系列 R-T 曲线 D-9 series R-T Characteristic curves





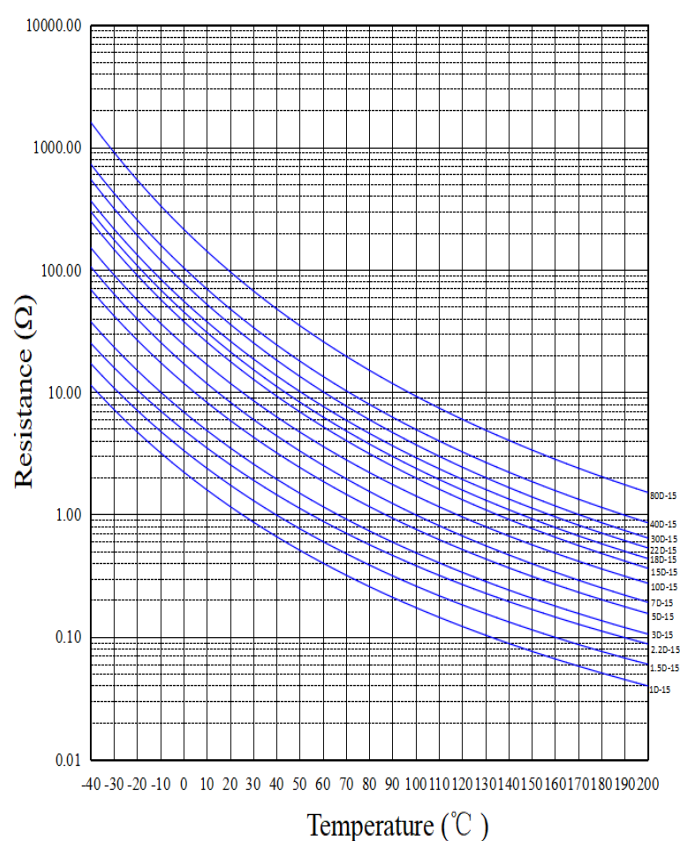
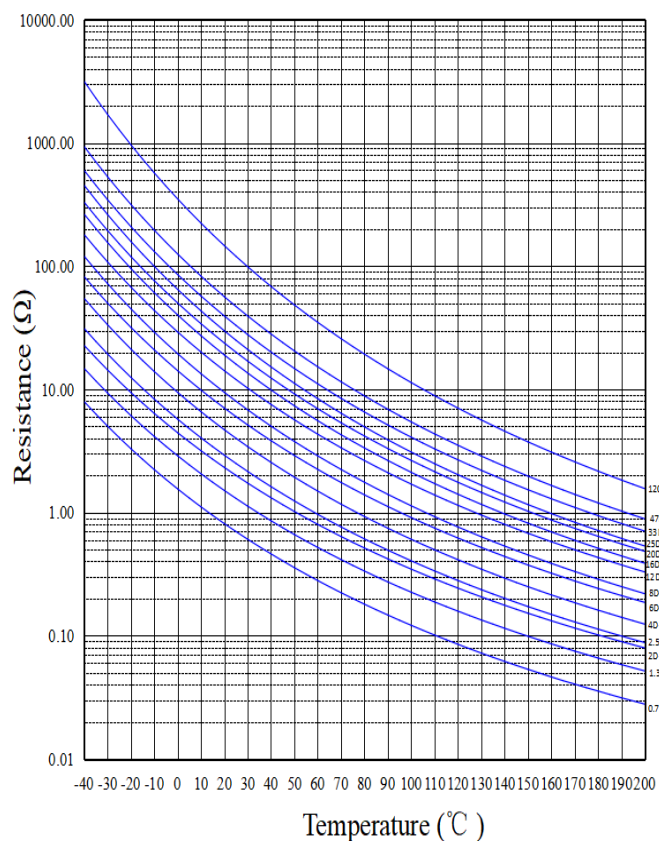


D-11 系列 R-T 曲线 D-11 series R-T Characteristic curves

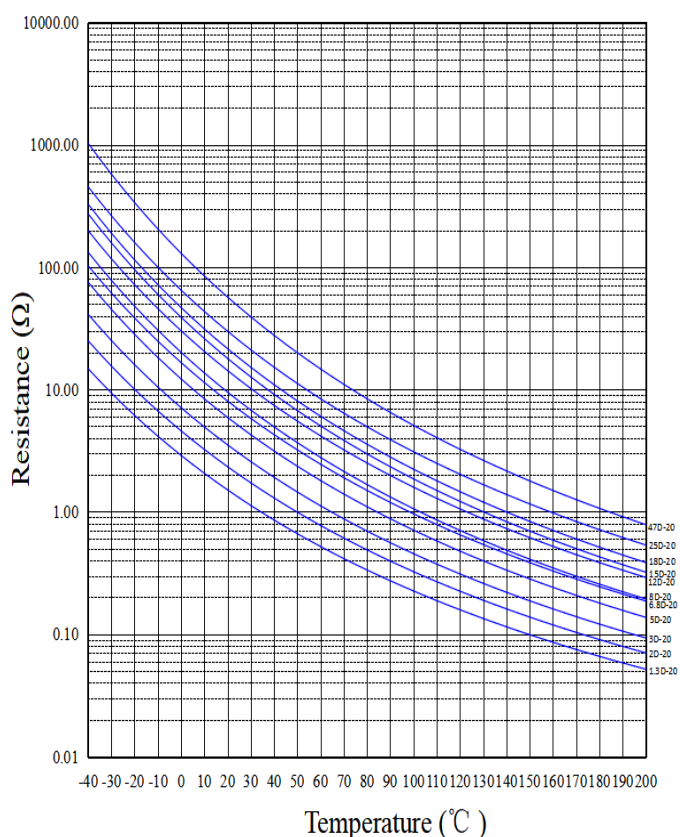
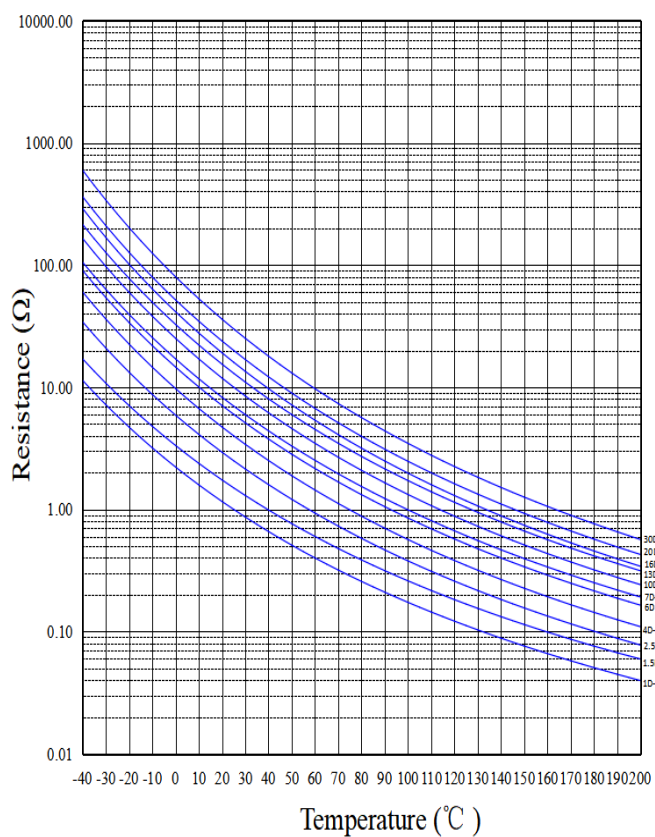


D-13 系列 R-T 曲线 D-13 series R-T Characteristic curves



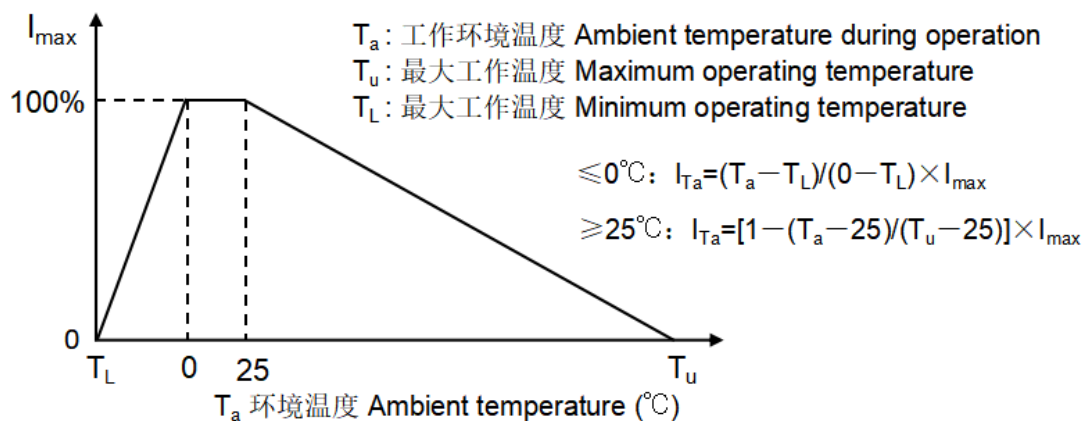


D-15 系列 R-T 曲线 D-15 series R-T Characteristic curves



D-20 系列 R-T 曲线 D-20 series R-T Characteristic curves

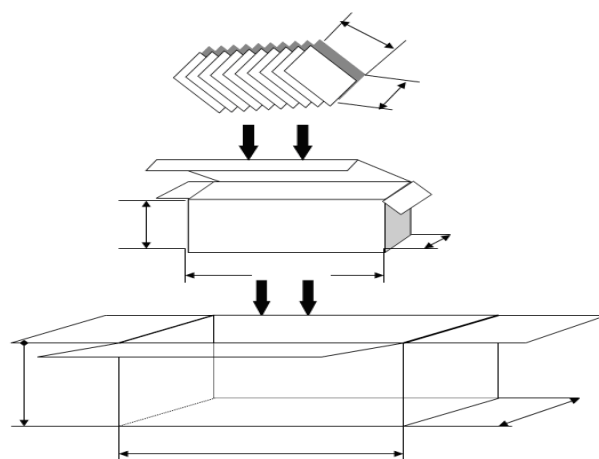
◆ 最大电流降额曲线图 Max.current derating curve



◆ 包装 Packaging

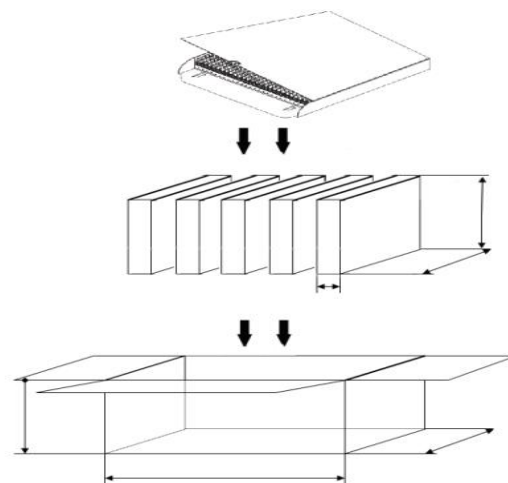
\*散装 Bulk

型号 Model	数量 Quantity (Pcs)	
	散装 Bulk / 塑料袋 Plastic bag	
	长脚 Long lead	短脚 Short lead
D-5	1000	1000
D-7	1000	1000
D-9	500	1000
D-11	500	1000
D-13	400	500
D-15	300	500
D-20	200	200
D-25	150	150
D-30	60	60



\*编带 Tape

型号 model	数量 Quantity (Pcs)
	编带 Tape / 盒装 Box
D-5	1500
D-7	1500
D-9(P0=15,d=0.8)	1000
D-9(P0=12.7,d=0.6,except Y lead)	1500
D-11 (P0=15,d=0.8)	1000
D-11(P0=12.7,d=0.6,except Y lead)	1500
D-13	1000
D-15	800
D-20	500



### ◆ 储存方法 Storage Methods

\*元器件必须储存在清洁、通风、无腐蚀性气体的仓库内；除另有规定外，仓库的温度和相对湿度必须满足如下要求：a.温度：5~30℃；b.相对湿度：20%~75%；存储期限：1年。

Components must be stored in a clean, ventilated, non-corrosive gases warehouse; Unless otherwise specified, the warehouse temperature and relative humidity must meet the following requirements:

a. Temperature: 5 ~ 30 ℃; b. Relative humidity: 20% ~ 75%; c. Period of Storage: 1 year.

### ◆ 使用注意事项 Precautions For Use

\*工作环境温度应该在技术条件规定的范围以内。

Working environment temperature should be within the prescribed scope of technical conditions.

\*不应该靠近发热或可燃元器件安装，最好有大于 3 毫米的间隔，以免损坏元器件。

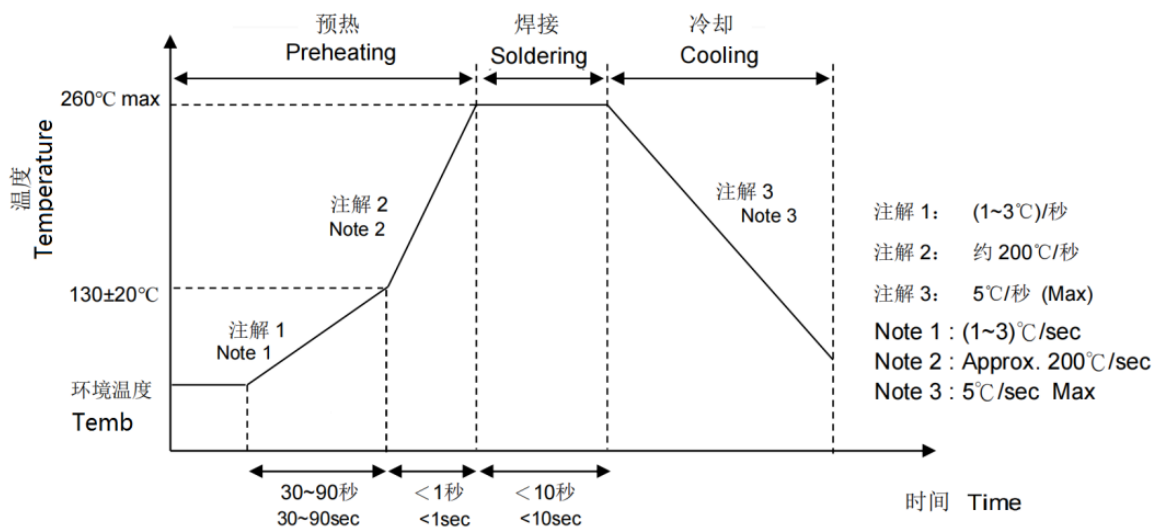
Near a fever or flammable components should not be installed, it is better to have more than 3 mm intervals, so as not to damage the components.

\*接触引脚时请先佩戴手套。

Please wear gloves before touching the leads.

### ◆ 推荐焊接条件 Soldering recommendation

\*波峰焊曲线 Wave soldering profile



\*手工焊接 Iron soldering

项目 Item	条件 Conditions
烙铁头温度 Iron-tip temperature	360℃ Max.
焊接时间 Soldering time	3s Max.
焊接位置与涂装层距离 Distance from body of thermistor	2mm Min.

### ◆ 环保情况说明 Environmental protection statement

\*所有 NTC 热敏电阻物料均符合 RoHS+无卤要求及 Reach 法规要求，请放心使用。

All NTC thermistor materials conform to the requirements of RoHS directive, Halogen Free and the Reach regulation, please rest assured to use.

◆ 修订履历

版本 Version	日期 Date	修订内容 Revision Content	修订人 Reviser