

ALTERNATION HISTORY RECORDS 变更记录

Date 日期	Version 版本	Mark 标记	Page 页码	Description 描述	Drafter 制定者	Approver 审批者
2023-11-04	A	/		First release 首次发行	Doris Chang	/

1. Part No.:

NTC D16 2R5 M 2600 K 681 3 CB
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Type	
NTC	NTC thermistors (MF72 Series)

② Size	
D16	D=16.5Maxmm

③ Nominal Zero-Power Resistance	
2R5	2.5Ω
160	16Ω
221	220Ω
222	2.2KΩ

④ Tolerance of Resistance	
F	±1%
J	±5%
K	±10%
M	±20%

⑤ B Constant	
3100	3100K
3950	3950K
2800	2800K
2600	2600K

⑥ Tolerance of B Constant	
F	±1%
J	±5%
K	±10%
M	±20%

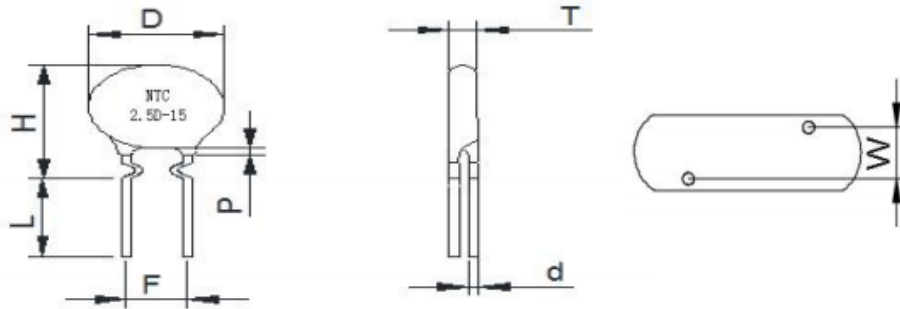
⑦ Maximum allowable capacity value(at 240VAC)	
820	82μ F
681	680μ F
102	1000μ F

⑧ Characteristics	
3	Surge suppression

⑨ Packing	
C	K-Type long feet Bulk
CT	K-Type long feet Taping
CB	K-Type Cut=3.5±0.5

2. Outline Dimension:

unit: mm



D	H	L	F	P	T	d	W
Max16.5	Max24.0	3.5±0.5	7.5±0.8	Max4.0	Max6.0	0.8±0.05	2.5±0.5

Remark:

- 1) Packaging form: encapsulation lead type
- 2) Packaging material: silicone resin
- 3) Package color:black Flag color: laser print (alternative white ink print)
- 4) Lead material: tinned copper wire
- 5) Lead shape: inner bend shape
- 6) Lead-Free (ROHS compliant)

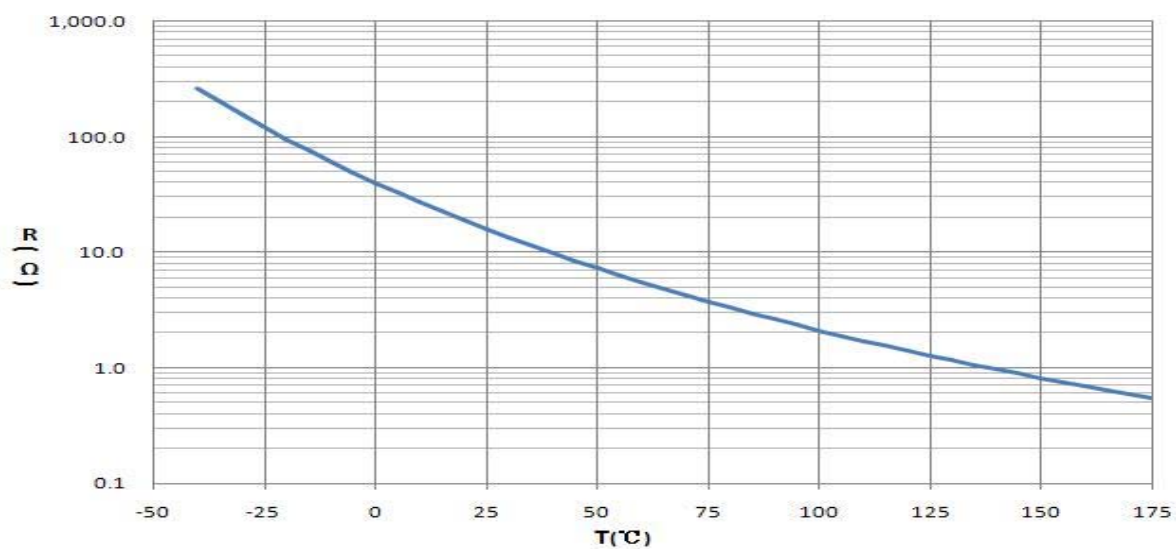
3. Electrical parameter

Item	Parameter requirements
Rated zero-power resistance, R25	2.5Ω±20%
B value (B25 / 50)	2600 K±10%
Maximum steady-state current (Max)	8.0 A
Thermal dissipation coefficient (δ th)	≥21mW/°C
Thermal Time Constant (τ c)	≤110 s
Maximum allowable capacity value (CT)	680μ F (240VAC)
Withstand voltage (V)	500V / AC 1min with no breakdown and flying arc
Operating temperature range (T)	-40~+200°C
Insulation resistance (MΩ)	≥500 MΩ (500V/DC 1min)

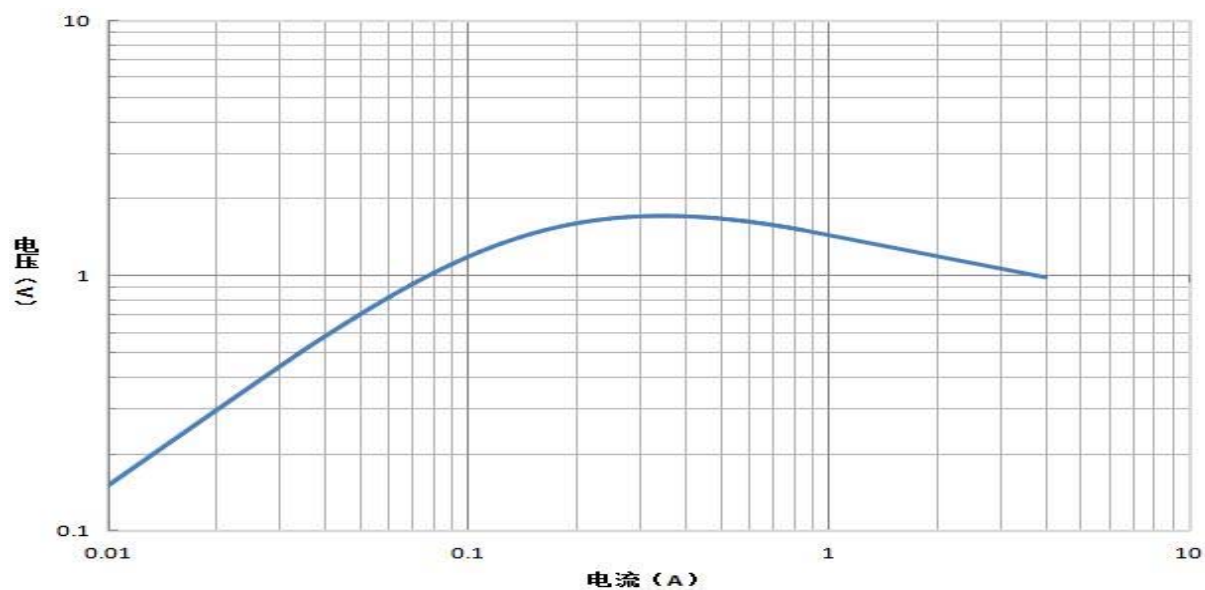
4. Reliability

Item	Terms name	Explain	performance requirement
4.1	Lead-end strength	Tension: Line diameter (mm) pull (N) $0.5 < d \leq 0.8$ 10 $0.8 < d \leq 1.25$ 20 Time: 10 ± 1 second After the test, retest R25 rated zero power resistance after recovery of 1 ~ 2 HR at room temperature and humidity.	No visible damage in the appearance $ \Delta R/R \leq 25\%$
4.2	Solderability	The temperature was $255 \pm 5^\circ\text{C}$, with time 2 – 3S. See Attachment 1 (lead-free peak welding)	Upper tin area is 95%
4.3	Welding heat resistance	The temperature of the tin pot is $260^\circ\text{C} \pm 5^\circ\text{C}$, the immersion depth is 6mm from the resistance, and the time is $10 \pm 1\text{S}$. After the test, restore 1 ~ 2 HR at room temperature, retest the rated zero power resistance of R25 at room temperature and humidity.	No visible damage in the appearance $ \Delta R/R \leq 25\%$
4.4	Steady state damp heat	Under a temperature of $40 \pm 2^\circ\text{C}$ and humidity of $93 \pm 2\%$, store $1000\text{H} \pm 24\text{H}$ and recover for 24 hours, retest R25 rated zero power resistance.	No visible damage in the appearance $ \Delta R/R \leq 25\%$
4.5	The temperature changes rapidly	-30°C 30Min 25°C 5Min 150°C 30Min 25°C 5Min, 5 cycles, after the test, after recovering 1 ~ 2 HR at room temperature, retest R25 rated zero power resistance at normal temperature and humidity.	No visible damage in the appearance $ \Delta R/R \leq 25\%$
4.6	High temperature storage	Temperature: $125 \pm 5^\circ\text{C}$, $1000\text{H} \pm 24\text{H}$. After the test, recover 1 to 2 HR, under normal temperature and humidity.	No visible damage in the appearance $ \Delta R/R \leq 25\%$
4.7	Low tempertaure storage	Temperature: $-40 \pm 5^\circ\text{C}$, time $1000\text{H} \pm 24\text{H}$. after the test, recover 1 to 2 HR, normal temperature and humidity.	No visible damage in the appearance $ \Delta R/R \leq 25\%$
4.8	Maximum steady-state current durability	The maximum constant state current was continuously applied for $1000 \pm 24\text{h}$ at room temperature. After the test, retest R25 rated zero power resistance after restoring 1 ~ 2 HR at room temperature and humidity.	No visible damage in the appearance $ \Delta R/R \leq 25\%$
4.9	Maximum allowable capacitance	The maximum capacitance was applied to 50Ms and 5 x Time, cycle 1000 times, after the test, after recovering 1 ~ 2 HR, retest R25 rated zero power resistance.	No visible damage in the appearance $ \Delta R/R \leq 25\%$

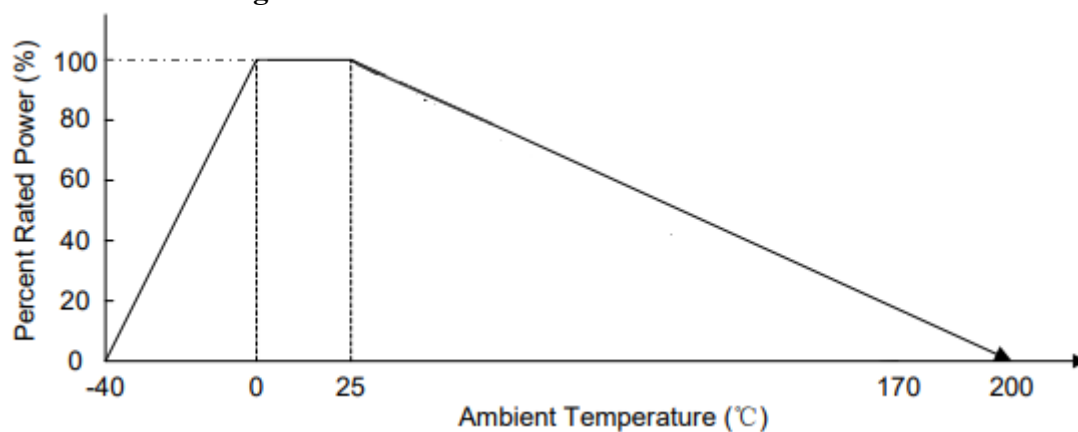
5. Temperature resistance characteristics diagram



Volt-ampere characteristic curve



6. Maximum Power Rating (Pmax)



7. Packaging

7.1. Box packing, 250 PCS / bag, 6 bags / box packing, 4500 pieces / box.

7.2 Labels on packing boxes.

The label shall indicate:

- a. product model
- B. The rated zero-power resistance value
- c. product quantity
- d. manufactory
- e. Production year month
- F. Product material code

7.3 The marking on the packing carton shall comply with the relevant provisions of GB191.

7.4 The gap in the packing carton should be tightly, and the packing carton should be firmly fastened with woven tape or adhesive tape.

8. Precautions

8.1 MF 72 negative temperature thermistors are manufactured for specific purposes to suppress surge current and therefore can only be used in specified occasions.

8.2 MF 72 negative temperature thermistor shall be used under the specified standard conditions, otherwise, product performance degradation or even damage to failure.

8.3 When using, the selection of working current shall not exceed the provisions of the parameter table.

8.4 Do not be used in corrosive, volatile, flammable atmosphere environment and near water, salt, oil pollution, and vacuum, low pressure and high pressure conditions.

8.5 It shall be stored within the temperature of $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ with the relative humidity lower than 75%, and the damage of sudden temperature change, direct sunlight, corrosion atmosphere, dust environment and mechanical force shall be avoided.

8.6 When soldering iron, the welding distance from the coating layer should be at least 2mm, the welding temperature should be lower than 360°C , and the welding time should be $<3\text{ses}$.

9. Storage conditions:

Storage temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$

Store the humidity at 75% RH

Avoid placing it in a corrosive gas environment, compared with a direct light environment.

It shall be sealed and stored after use.

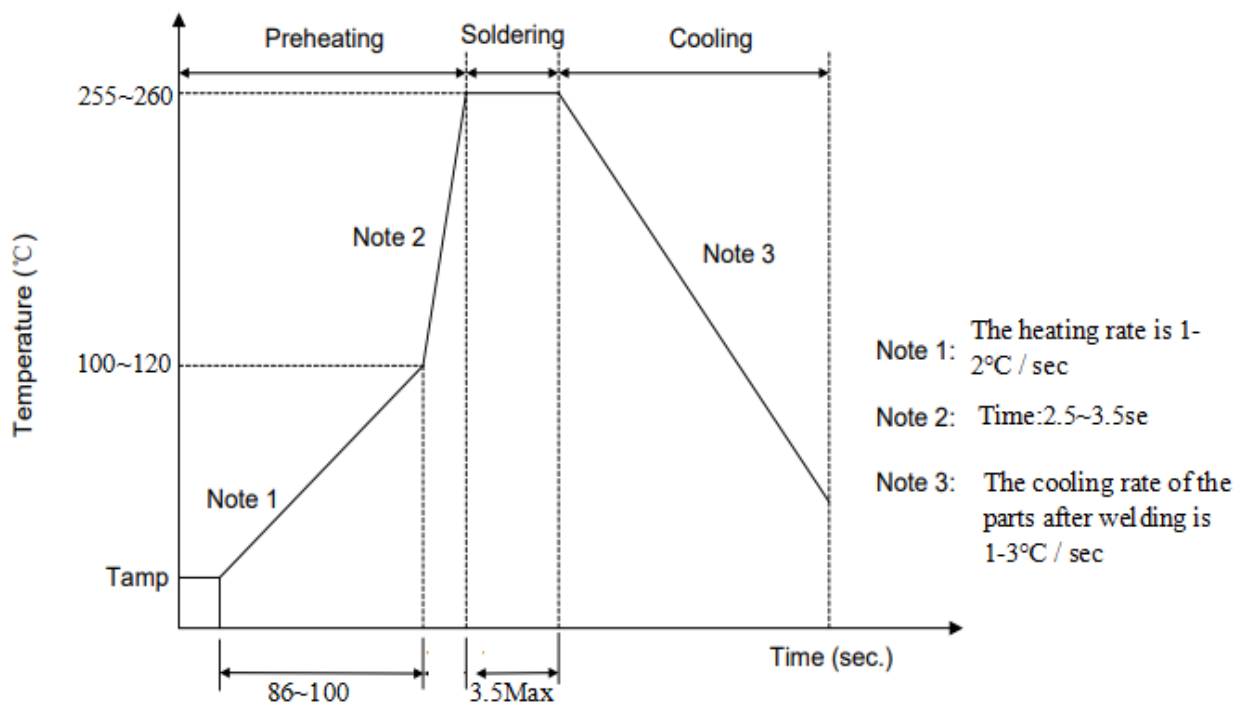
After the package is opened, it should be re-sealed for storage for the storage period of 1 year.

After the storage period, it can be re-tested according to the items stipulated in the standard.

If it meets the requirements, it can still be used.

Annex 1

Wave Soldering Recommendation



Remark:

1. Preheating temperature is 100-120°C, the time is 86-100 seconds, and the heating rate is 1-2°C / sec;
2. Enter the 255-260°C tin after preheating; the immersion time is 2.5-3.5sec;
3. The cooling rate of the parts after welding is 1-3°C/ sec;
4. The total welding time is 3.5min;
5. In order to ensure that the parts can withstand the heat impact during the peak welding, the temperature resistance specification of the parts must be higher than the maximum temperature curve of the peak welding, that is, above 260°C.