

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
2023-11-15	B	/	6	Change the version release	Doris Chang	

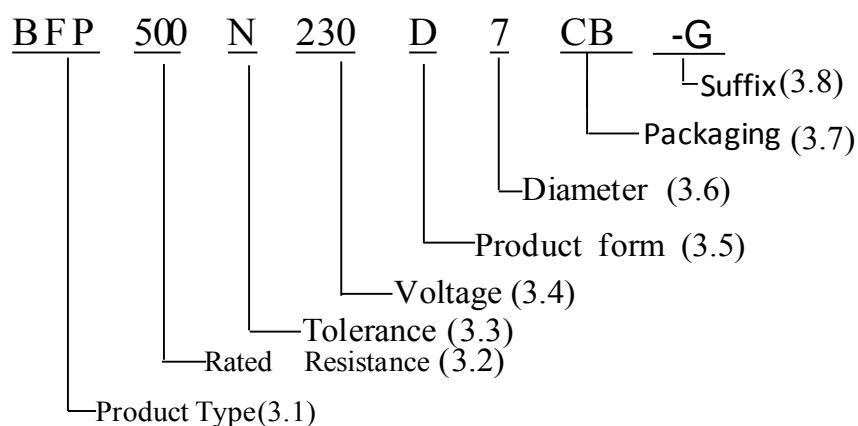
1. Applied scope

This product of the Positive Temperature Coefficient (PTC) is for overload protection. It is applied to common electrical circuits for overload protection component.

2. Reference standard

IEC60738-1-1 directly heated positive step-function temperature coefficient thermistor.

3. Part No.



3.1 Product Type:

Code	BFP
Product Type	CPTC

3.2 Rated Resistance code

Code	500	501	502
Rated Resistance (25±2℃ Ω)	50	500	5000

3.3 Rated voltage code

Code	230
Voltage (V.)	230

3.4 Capacitance tolerance

Code	M	N
Tolerance Range	±20%	±25%

3.5 Product form code:

Code	D	S
Product form	DIP	SMD

3.6 Diameter

Code	D	7
Diameter max	5	7

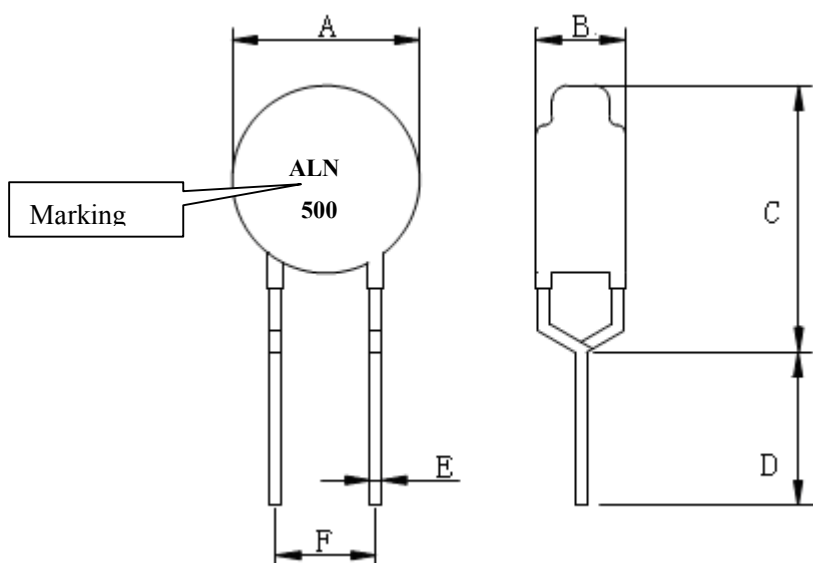
3.7 Packaging:

Code	RR	CB
Packaging	Bulk	Cut: 3-3.8mm

3.8 Suffix: Inner Code

4. Dimensions:

unit (mm)



A max	B max	C max	D	E	F
7.0	4.8	11.8	3.0-3.8	0.6±0.06	5.0 ^{+0.6} _{-0.1}

5. Material

Disk: BaTiO₃

Electrode: Ag/Zn

Down-lead : Tin-plated Copper wires

6. Environmental characteristics

Temperature: While V max: 0 °C ~ +70°C

While V max=0; -25°C ~ +125°C

Relative humidity: ≤85% (25°C)

Atmospheric pressure: 70~106KPa

7. Storage

The production should be in the environment of good ventilation. The indoor temperature is -40°C ~ +55°C, and the relative humidity ≤85% (at 25°C), without acid, alkali and other harmful impurity.

8. Electrical Characteristics:

No.	Parameter	Requirement	Test Condition
1	Curie temperature (T _c)	125±10°C	0~200°C, R/T Automatic test machine, RTc=2* R _{min}
2	Rated Resistance (R _n)	50±25%Ω	25±2°C
3	No-operating Current (I _n)	100mA	25±2°C, AC 230V, on 100mA, electrify 1h
4	Operating Current (I _s)	150 mA	25±2°C, AC 230V, on 150mA, ≤5min
5	Max. current(I _{max})	0.4A	/
6	I _r	≤7mA	V =V max
7	Rated voltage (U _n)	230V	/
8	Max. Voltage (V max)	265V	/

Notice :

Before the test, all the test samples should be tested under the temperature condition of 25±2°C and be kept for 30min under such temperature before test.

9.Environment test

No.	Item	Test condition	Requirement
1	Intensity of the down-lead	Add the axial stress on the down-lead of the sample gradually until 4.9N and last for 10s, then measure the value of its resistance.	$ (R_2 - R_1) / R_1 < 20\%$ R ₁ :the resistance before test R ₂ :the resistance after test
2	Resistance of soldering heat	Solder bath: the temperature 350℃ , immerging time is 3.5±0.5s, measure the value of its resistance	$ (R_2 - R_1) / R_1 < 20\%$ R ₁ :the resistance before test R ₂ :the resistance after test
3	Vibration	Rivet the sample on the test board. Increase the frequency from 10HZ to 55HZ within one minute. Make sure the displacement of swing is 0.75mm. Vibrate along two directions of X/Y respectively for 45minute.Measure the value of its resistance.	$ (R_2 - R_1) / R_1 < 20\%$ R ₁ :the resistance before test R ₂ :the resistance after test
4	Shock	Rivet the sample on the Collision Stand. Keep the acceleration at 100 m/s ² for 11ms. Vibrate the samples along two directions of X/Y respectively by the frequency of 60~80 time per minute and collide them for 1000 times. Measure the value of its resistance.	$ (R_2 - R_1) / R_1 < 20\%$ R ₁ :the resistance before test R ₂ :the resistance after test
5	Damp heat, steady state	Put the sample in the temperature of 40℃ and humidity of 90%-95% and keep for 48hrs, Measure the value of its resistance.	$ (R_2 - R_1) / R_1 < 20\%$ R ₁ :the resistance before test R ₂ :the resistance after test
6	High Temperature	Put the sample under the temperature of 70℃ and last for 2 h, Measure the value of its resistance.	$ (R_2 - R_1) / R_1 < 20\%$ R ₁ :the resistance before test R ₂ :the resistance after test
7	Low Temperature	Put the sample under the temperature of -10℃ and last for 2 h. Measure the value of its resistance.	$ (R_2 - R_1) / R_1 < 20\%$ R ₁ :the resistance before test R ₂ :the resistance after test

8	Climate sequence test	<p>I . Original test :put the sample in the oven for 24hrs and temperature for 40℃ , humidity $\leq 20\%RH$, them measure the zero-power resistance.</p> <p>II . Dry heat test: put the sample in the oven for 16 hrs, and temperature of oven for 100℃ 。</p> <p>III. Damp heat cycle , first cycles : put the sample in a box while the temperature of 25℃ for 2hrs, then put it under the temperature of 40℃ 、 humidity of 95%Rh for 24 hrs.</p> <p>IV. Low temperature: temperature of box :0℃ , keep for 2 hrs.</p> <p>V . Damp heat cycle, remaining cycles : the requirement as the item III and last for 24hrs.</p> <p>VI. Recovery: under the temperature of 25℃ for 1-2 hrs final measurement :appearance, zero-power resistance</p>	<p>Appearance : no damnification</p> <p>$(R_2 - R_1) / R_1 < 20\%$</p> <p>R₁:the resistance before test</p> <p>R₂:the resistance after test</p>
9	Change of the temperature	Put the sample under the temperature of -10℃ 、 high temperature 70℃ , exposing for 30min, transfer for 2minute, circulate for 5 times, then measure the value of their resistance.	<p>$(R_2 - R_1) / R_1 < 20\%$</p> <p>R₁:the resistance before test</p> <p>R₂:the resistance after test</p>
10	Ac life	Ac 265V, initial current 0.4A, on 60s,Off 600s, cycle: 50 times	<p>$(R_2 - R_1) / R_1 < 20\%$</p> <p>R₁:the resistance before test</p> <p>R₂:the resistance after test</p>

Notice :

The samples shall be put under normal pressure and 25±2℃ for 2h after the test. And then check the value of its resistance.