

Power Thermistor for Limiting Inrush Current (NTC Thermistor)

MF72-SCN5D-11-G

Features

- ◆ RoHS & Halogen Free (HF) compliant
- ◆ Body size: $\Phi 11\text{mm}$
- ◆ Silicone resin
- ◆ High power rating
- ◆ Wide resistance range
- ◆ Cost effective
- ◆ Operating temperature range: $-40\sim+200^{\circ}\text{C}$
- ◆ Agency recognition: RoHS
- ◆ Package color: green



Recommended Applications

- ◆ Switch mode power supply
- ◆ Electric motor
- ◆ Transformer
- ◆ Adapter
- ◆ Projector
- ◆ Halogen lamp
- ◆ LED driver circuit

Storage Conditions of Products

- ◆ Storage Conditions:
Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$.
Storage humidity: $\leq 75\%\text{RH}$.
Keep away from corrosive atmosphere and sunlight.
- ◆ Keep sealed after use.

Welding and conditions of use

- ◆ The welding temperature is less than 360 degrees, the distance from the main body is at least 2mm, The time should be as short as possible.
- ◆ When cutting the lead, pay attention to the shortest lead is 6mm

Part Number Code

<u>MF72</u>	-	<u>SCN</u>	-	<u>5D</u>	-	<u>11</u>	-	<u>G</u>
(1)		(2)		(3)		(4)		(5)

- (1) MF72: MF72 Series.
- (2) SCN: Socay NTC.
- (3) 5D: Zero Power Resistance at 25°C (R_{25}): $5=5\Omega$.
- (4) Body Size: $11=\Phi 11\text{mm}$.
- (5) G: Package color

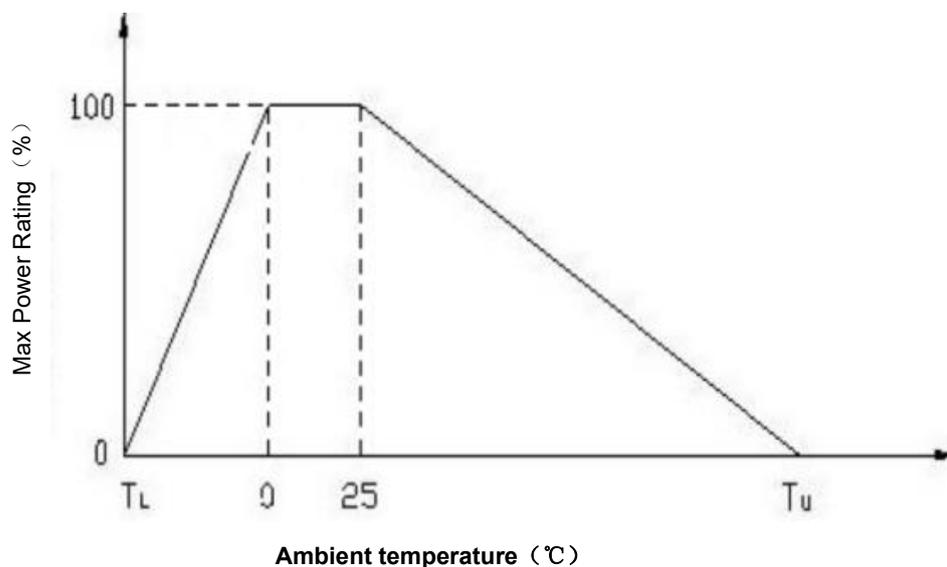
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Electrical Characteristics

Part Number	Resistance at 25°C ±20%	Max. Permissible Working Current	Dissipation Factor	Thermal Time Constant
	$R_{25}(\Omega)$	$I_{max}(A)$	$\delta(mW/^{\circ}C)$	$\tau(Sec.)$
MF72-SCN5D-11-G	5	4	18	68

Maximum Power Rating (Pmax)



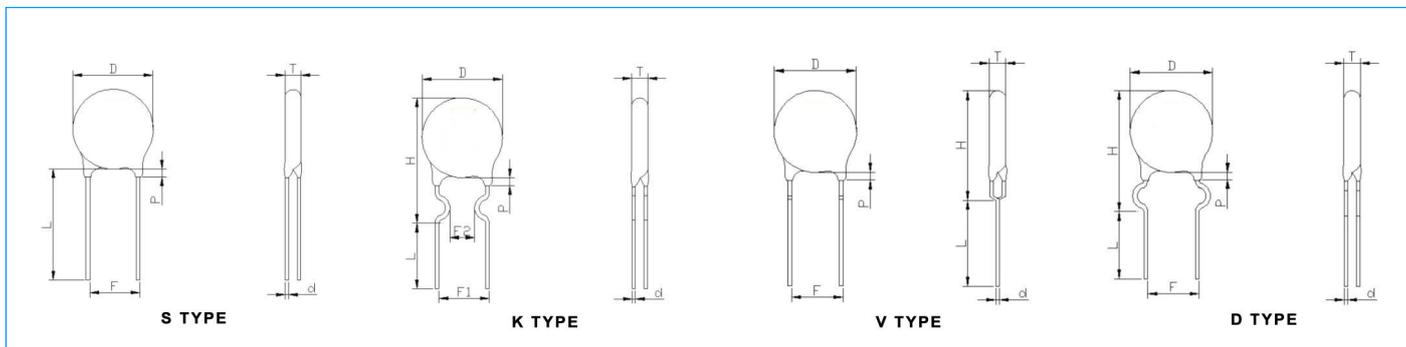
Remarks : T_L =lowest temperature (°C)

T_U =Maximum temperature (°C)

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Structure and Dimensions (Unit: mm)



D max	T max	P max	F	L	d	Type
12	6.0	3.5	5±1.0	Min17.0	0.75±0.05	S/K/V/D

Note: Length of Pin (L) can be customized.

Packing Specification

Part Number	Type of L	Quantity (pcs/bag)
MF72-SCN5D-11-G	L _{short}	1000
	L _{long}	500

Electrical performance

Item	Standard test	Definition and test method
Zero power resistance	$R_{25}=5\Omega \pm 20\%$	Zero load resistance at 25°C, At=25°C±0.05 °C constant oil tank test
Maximum steady state current	$I_{max}=4A$	Maximum continuous current allowed to be applied to the resistor at 25°C
Maximum allowable capacity	C=220uf	Maximum capacitance applied under 240V, intermittent closing 50Ms, recovery time 5 times, 500 cycles
B value	$B_{25/50}=2700 \pm 10\%$	B value between 25°C and 50°C $B=Ln(R1/R2)/(1/T1-1/T2)$ $T1 = (273.15 + 25) K$ $T2 = (273.15 + 50) K$ Note: 273.15 is absolute temperature
Thermal time constant	≤68 seconds	Under zero power conditions, in still air, the time required for the temperature of the thermistor to drop to 63.2% of the difference between its initial temperature and the final temperature.
Heat dissipation coefficient	$\delta \approx 18mW/^\circ C$	The power required to increase the temperature of the thermistor by 1°C in still air at 25°C
Insulation resistance	≥100MΩ	Press 500VDC at room temperature for 60sec
Operating temperature range	$T_w=-40^\circ C \sim +200^\circ C$	Temperature range under specified use conditions

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Reliability

NO	Item	Standard	Test method	Technology requirement
1	Solderability	IEC60068-2-20 (GB2423.28)	Dip the terminal with flux, and immerse it in a tin bath with a temperature of $235\pm 5^{\circ}\text{C}$, and the tin surface is 2~2.5mm away from the lower end of the NTC body for $2\pm 0.5\text{S}$. Check the appearance after the test	The solder on the terminal end flows freely and well wetted, and the upper tin area is more than 95%.
2	Resistance to welding heat	IEC60068-2-20 (GB2423.28)	Dip the terminal with flux and immerse it in a tin bath at a temperature of $260\pm 5^{\circ}\text{C}$, the tin surface is at least 6mm away from the bottom of the NTC body, duration: $10\pm 1\text{S}$. After the test is completed, after recovering 1 ~ 2Hr under normal temperature and humidity, check the appearance and retest R25 rated zero power resistance	No visible damage in appearance $\Delta R/R25\leq\pm 25\%$
3	Terminal strength	IEC60068-2-21 (GB2423.29)	Test 1: Tensile force 10N, continuous 10S. Test 2: Bend at 90° for two consecutive times, with a tensile force of 5N, and lasting for 10S: After the test is completed, after recovering 1 ~ 2Hr under normal temperature and humidity, Check the appearance and retest R25 rated zero power resistance	No visible damage in appearance $\Delta R/R25\leq\pm 25\%$
4	High temperature test	IEC60068-2-2 (GB2423.2)	Environment temperature: $120^{\circ}\text{C}\pm 5^{\circ}\text{C}$ Duration: $1000\pm 24\text{h}$ After the test is completed, after recovering 1~2Hr under normal temperature and humidity, retest R25 rated zero power resistance	$\Delta R/R25\leq\pm 25\%$
5	Low temperature test	IEC60068-2-1 (GB2423.1)	Environment temperature: $-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ Duration: $1000\pm 24\text{h}$ After the test is completed, after recovering 1~2Hr under normal temperature and humidity, Retest R25 rated zero power resistance	$\Delta R/R25\leq\pm 25\%$
6	Room temperature energization test	--	$25\pm 5^{\circ}\text{C}$, energized $1000\pm 24\text{h}$, DC0.2mA. Ambient temperature: $40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ Ambient humidity: 90%~95%	$\Delta R/R25\leq\pm 25\%$

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Reliability (Continue)

NO	Item	Standard	Test method	Technology requirement
7	Humidity resistance test (Steady state damp heat)	IEC60068-2-3 (GB2423.3)	Duration: 1000±24h After the test is completed, after recovering 1~2Hr under normal temperature and humidity, Retest R25 rated zero power resistance	$\Delta R/R_{25} \leq \pm 25\%$
8	Thermal shock test	IEC60068-2-14 (GB2423.22)	Low temperature: -30°C±2°C Low temperature residence time: 3min±0.5min High temperature: 150°C±5°C High temperature residence time: 3min±0.5min High and low temperature conversion time: ≤30S, repeated 100 times After the test is completed, after recovering 1~2Hr under normal temperature and humidity, Retest R25 rated zero power resistance	$\Delta R/R_{25} \leq \pm 25\%$