✧ General

✧ Description

Temperature Compensation NTC Thermistor. The MF11 series of NTC Thermistors is designed for temperature measurement and the temperature compensation of measurement instruments and electronic circuits.

✧ Type designation (example)

MF11	103	K
①	②	③

①Type : MF11 Temperature Compensation NTC Thermistor
② Rated resistance: 103 - 10KOhm
③ Nominal resistance tolerance : J-±5% K-±10% L-±15% M-±20%

✧ Characteristics

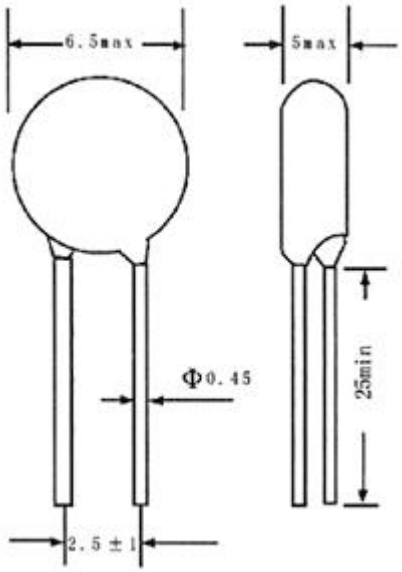
- Broad range of resistance
- Wide choice of B values
- Standard tolerances: ±5%, ±10%, ±15%,±20%
- B Value tolerance: ±10%
- Available in all standard R values
- Measuring power ≤0.5mW
- Dissipation Constant ≥4.5mW/°C
- Time Constant of ≤30 seconds
- Rated Power: 0.45W
- Long-term Stability and Reliability
- Good level of Tolerance and Interchangeability
- Temperature Range: -35°C to 125°C

✧ Application

- Temperature Measurement
- Temperature Compensation of Electronic Circuits.

Dongguan Ampfort Electronics Co.,Ltd.
TEL:86-769-86293298 Mobile: 18128566098
http://www.thermistor-sensor.com/ E-mail: sales1@ampfort.net
*** Customization is available according to customer's requirements**

➢ Dimension(Unit:mm)



✧ Specifications

Part No	B Value (25/50ƒC)		Rated zero-power resistance at 25ƒC	
	Rated Value (K)	Allowable Tolerance (%)	Resistance range (Ω)	Allowable Tolerance (%)
MF11	2600	+/-10	5-7	
	2800		8-24	
	3000		25-119	
	3200		120-359	
	3600		360-1400	
	3950		1500-5900	+/- 5
	4050		6000-12000	+/- 10
	4150		13000-17000	+/-15
	4250		18000-44000	+/- 20
	4300		45000-79000	
	4400		80000-144000	
	4500		145000-199000	
	4600		200000-299000	
	4750		300000-500000	

➢ Remark: We can produce thermistors according to your special requirements.

Dongguan Ampfort Electronics Co.,Ltd.
TEL:86-769-86293298 Mobile: 18128566098
http://www.thermistor-sensor.com/ E-mail: sales1@ampfort.net
*** Customization is available according to customer's requirements**

✧ Mechanical Requirements

Item	Requirements	Test Method
1.Solder-ability	The terminals shall be uniformly tinned, and its area≥95%	Dipping theNTC terminals to a depth of 15mm in a soldering bath of 245±5℃ and to the place of 6mm far from NTC body for 3±0.5s (See IEC68-2-20 /GB2423.28 Ta)
2.Resistance To Soldering Heat	No visible mechanical damage. ΔR/RN ≤20% (ΔR = ｜RN-RN'｜)	Dipping the NTC terminals to a depth of 15mm in a soldering bath of 260±5℃ and to the place for 6mm below from NTC body for 3±0.5s.After recovering4-5h under 25±2℃. The rated zero power resistance value RN' shall be measured. (See IEC68-2-20 /GB2423.28 Tb)
3.Strength of lead terminal	No break out ΔR/RN ≤20% (ΔR = ｜RN-RN'｜)	Fasten the body and apply a force gradually to each lead until 10N and then keep for 10sec, Hold body and apply a force to each lead until 90°slowly at 5N in the direction of lead axis and then keep for 10sec, and do this in the opposite direction repeat for other terminal. After recovering 4~5h under 25±2℃, the rated zero power resistance value RN' shall be measured. (See IEC68-2-21/GB2423.29 Ua / Ub)

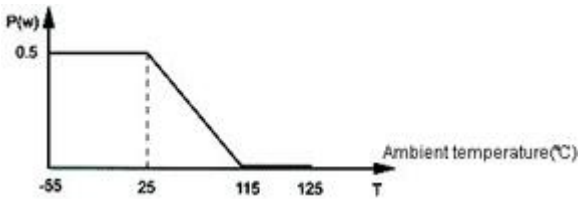
Dongguan Ampfort Electronics Co.,Ltd.
TEL:86-769-86293298 Mobile: 18128566098
http://www.thermistor-sensor.com/ E-mail: sales1@ampfort.net
*** Customization is available according to customer's requirements**

✧ Reliability Test

Item	Requirements	Test Method
1.Temp. Cycling Testing	No visible mechanical damage. ΔRN / RN ≤20% (ΔR = | RN-RN' |)	Ta:-40±3℃/ 30min→25±2℃/ 5min→ Tb:160±3℃/ 30min→25±2℃/ 5min Cycles: 5times After recovering 4~5 h under 25±2℃, the rated zero power resistance value RN' shall be measured.
2.Electrical Cycling Testing		Ambient temp. Range:25℃±2℃. Cycles: 2,000times On / Off: 5 s / 55 s Test Current: 7A After recovering 4~5h under 25±2℃, the rated zero power resistance value RN' shall be measured.
3.LoadLife (Endurance) Testing		Ambient temp. Range:25℃±2℃; 7A/ 1,000±24h After recovering 4~5 h under 25±2℃, the rated zero power resistance value RN' shall be measured.
4. Humidity Testing	No visible mechanical damage. ΔRN / RN ≤20% (ΔR = | RN-RN' |)	Ambient temp. range : 40℃±2℃ R.H.:93±3% , Energized time:1000±24 h After recovering 4~5 h under 25±2℃, the rated zero power resistance value RN' shall be measured.

Dongguan Ampfort Electronics Co.,Ltd.
TEL:86-769-86293298 Mobile: 18128566098
http://www.thermistor-sensor.com/ E-mail: sales1@ampfort.net
*** Customization is available according to customer's requirements**

✧ Power-Consumption Curve



✧ STORAGE CONDITIONS:

- Temperature: -10℃～+40℃
- Humidity: ≤70%RH
- Term: ≤6 months (First-in/ First-out)
- Place:

Do not exposing the components to the following conditions, otherwise, it may result in deterioration of characteristics.

1) Corrosive gas or deoxidizing gas.
2) Flammable and explosive gases.
3) Oil, water and chemical liquid.
4) Under the sunlight.

- Handling after seal open: After unpacking of the minimum package, reseal it promptly or store it inside a sealed container with a drying agent.

✧ WARNING ⚠

Do not apply the components under the following conditions, otherwise, it may result in deterioration of characteristics, destruction of components or in the worst case, to catching fire.

- Exceeding Imax.
- Exceeding rated temperature range.
- Inferior thermal dissipation (Due to badly inferior thermal dissipation, some part of the components body will become overheated and then be damaged.)

Dongguan Ampfort Electronics Co.,Ltd.
TEL:86-769-86293298 Mobile: 18128566098
http://www.thermistor-sensor.com/ E-mail: sales1@ampfort.net
*** Customization is available according to customer's requirements**