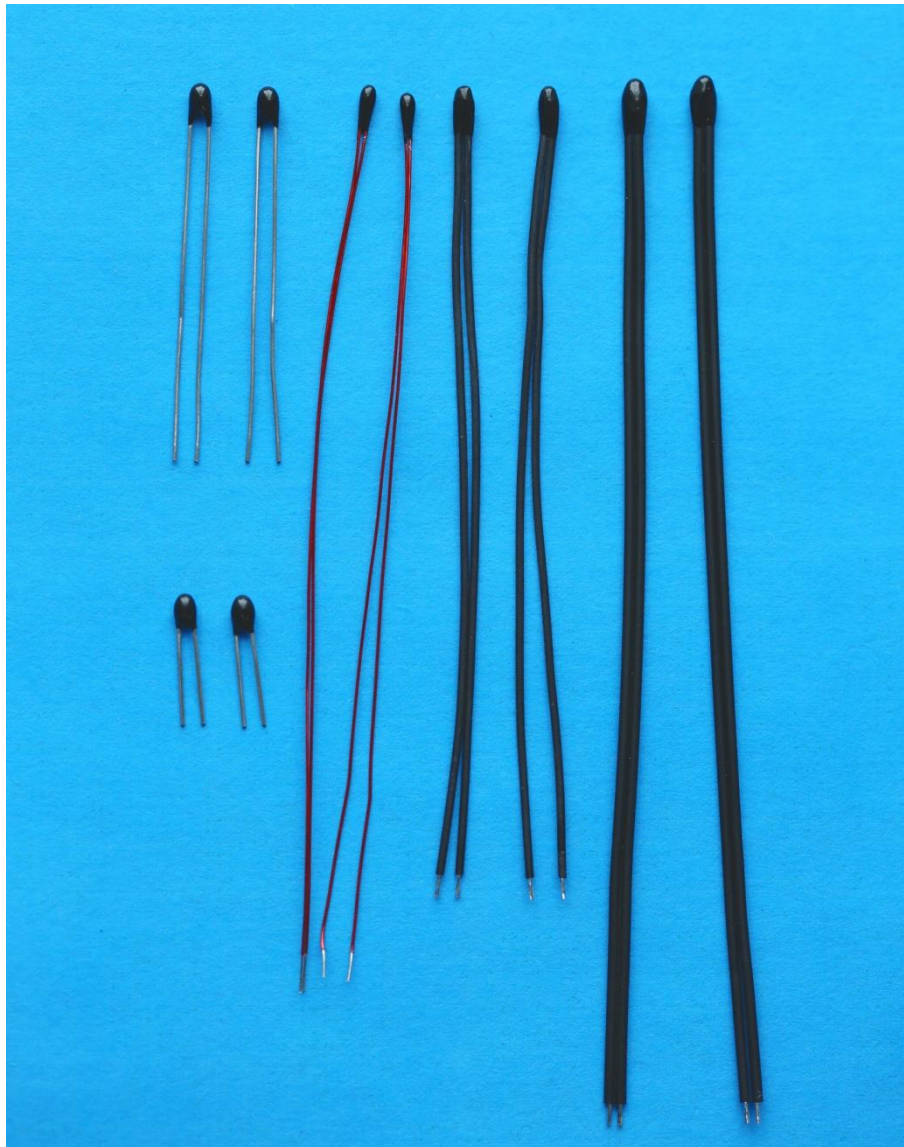


Epoxy coating type NTC thermistor



Notice

1. In order to improve this catalog, specifications may be changed without prior notice, please consult our sales representative or product engineer before ordering;
2. Due to the limitation of length, this catalog provides only the main product information.
3. We can produce any special specifications products according to customers' requests.

Contents

Description	1
Features	1
1. Shape & Dimension and Product Identification (Part Number).....	2
1.1 Shape & Dimension (CP Wire)	2
1.2 Product Identification (Part Number) (CP Wire)	2
1.3 Shape & Dimension Enameled wire & High temp fluorin-plastic wire or PVC wire	3
1.4 Product Identification (Part Number) Enameled wire & High temp fluorin-plastic wire or PVC wire	3
2. Main Techno-Parameters (In static air)	4
3. R-T Characteristic Curves	5
4. Reliability Test.....	5
5. Packaging and Storage	6

Description

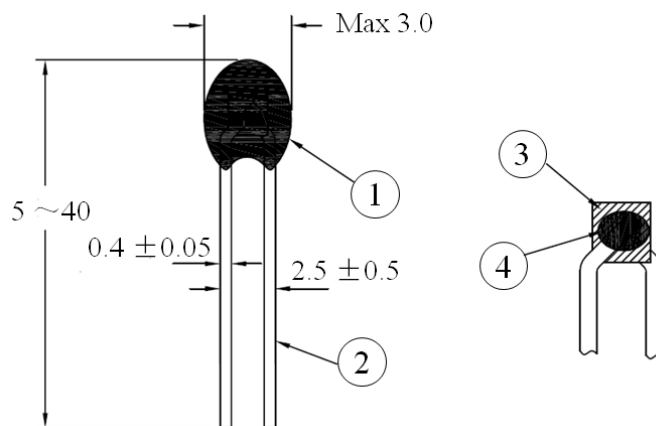
Epoxy coating type NTC thermistor is designed for high environmental reliability and low temperature range of usage($-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$). ET type series gives excellent high temperature stability and can be applied to various fields, such as home appliance, automobile, medical and other industrial appliance.

Features

- Excellent stability at low temperature($-40 \sim 125^{\circ}\text{C}$)
- Special specifications of products can be customized

1. Shape & Dimension and Product Identification (Part Number)

1.1 Shape & Dimension (CP Wire)



Part	①	②	③	④
Component	Epoxy	CP wire	NTC Chip	Solder

1.2 Product Identification (Part Number) (CP Wire)

QE 103 F 3435 F A CP
 ① ② ③ ④ ⑤ ⑥ ⑦

① Type	
QE	Epoxy coating type NTC thermistor

② Nominal Zero-Power Resistance at 25℃	
272	2.7kΩ
103	10kΩ
104	100kΩ
224	220kΩ

③ Tolerance of Resistance	
F	±1%
G	±2%
H	±3%
J	±5%

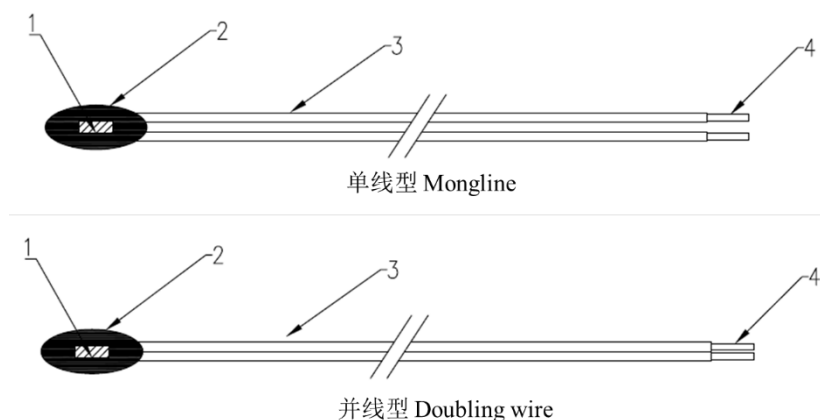
④ B Constant	
3435	3435K
3600	3600K
4250	4250K

⑤ Tolerance of B Constant	
F	±1%
H	±3%

⑥ B constant calculation method	
A	25℃&85℃
B	25℃&50℃

⑦ Lead Wire	
CP	CP Wire

1.3 Shape & Dimension Enameled wire & High temp fluorin-plastic wire or PVC wire



Part	①	②	③	④
Component	NTC Chip	Epoxy Coating	Lead wire	Tail

1.4 Product Identification (Part Number) Enameled wire & High temp fluorin-plastic wire or PVC wire

<u>QE</u>	<u>103</u>	<u>F</u>	<u>3435</u>	<u>F</u>	<u>A</u>	<u>3</u>	<u>ES</u>	<u>040</u>	<u>X</u>	<u>20</u>
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪

① Type	
QE	Epoxy coating type NTC thermistor

② Nominal Zero-Power Resistance at 25℃	
272	2.7kΩ
103	10kΩ
104	100kΩ
224	220kΩ

③ Tolerance of Resistance	
F	±1%
G	±2%
H	±3%
J	±5%

④ B Constant	
3435	3435K
3600	3600K
4250	4250K

⑤ Tolerance of B Constant	
F	±1%

⑥ B constant calculation method	
A	25℃ & 85℃
B	25℃ & 50℃

⑦ Wire color	
1	Black
3	Red

⑧ Wire	
ES	Enameled Copper clad steel wire

⑨ Total Length	
040	40mm

⑩ Tail Condition	
X	Soldered
N	Not Soldered

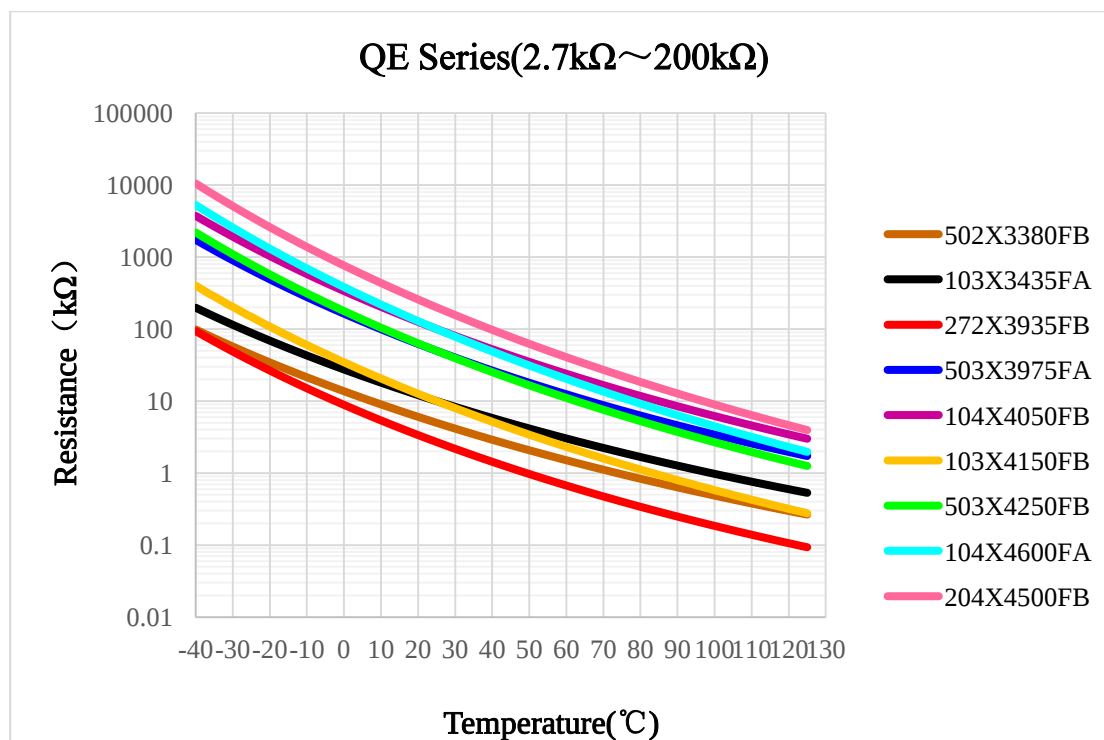
⑪ Tail length	
20	2.0mm

2. Main Techno-Parameters (In static air)

Part No	Resistance (25℃) (kΩ)	B Constant (25/50℃) (K)	B Constant (25/85℃) (K)	Dissipation Factor (mW/℃)	Thermal Time Constant (s)	Operating Temperature (℃)
QE502□3380FB	5kΩ	3380 ±1%	3435 ±1%	3	15	-40~125
QE502□3435FA	5kΩ	3380 ±1%	3435 ±1%			
QE103□3380FB	10kΩ	3380 ±1%	3435 ±1%			
QE103□3435FA	10kΩ	3380 ±1%	3435 ±1%			
QE272□3935FB	2.7kΩ	3935 ±1%	3975 ±1%			
QE272□3975FA	2.7kΩ	3935 ±1%	3975 ±1%			
QE502□3935FB	5kΩ	3935 ±1%	3975 ±1%			
QE502□3975FA	5kΩ	3935 ±1%	3975 ±1%			
QE103□3935FB	10kΩ	3935 ±1%	3975 ±1%			
QE103□3975FA	10kΩ	3935 ±1%	3975 ±1%			
QE503□3935FB	50kΩ	3935 ±1%	3975 ±1%			
QE503□3975FA	50kΩ	3935 ±1%	3975 ±1%			
QE104□3935FB	100kΩ	3935 ±1%	3975 ±1%			
QE104□3975FA	100kΩ	3935 ±1%	3975 ±1%			
QE103□3950FB	10kΩ	3950 ±1%	3990 ±1%			
QE103□3990FA	10kΩ	3950 ±1%	3990 ±1%			
QE103□4050FB	10kΩ	4050 ±1%	4100 ±1%			
QE103□4100FA	10kΩ	4050 ±1%	4100 ±1%			
QE503□4050FB	50kΩ	4050 ±1%	4100 ±1%			
QE503□4100FA	50kΩ	4050 ±1%	4100 ±1%			
QE104□4050FB	100kΩ	4050 ±1%	4100 ±1%			
QE104□4100FA	100kΩ	4050 ±1%	4100 ±1%			
QE103□4150FB	10kΩ	4150 ±1%	4200 ±1%			
QE103□4200FA	10kΩ	4150 ±1%	4200 ±1%			
QE503□4150FB	50kΩ	4150 ±1%	4200 ±1%			
QE503□4200FA	50kΩ	4150 ±1%	4200 ±1%			
QE104□4150FB	100kΩ	4150 ±1%	4200 ±1%			
QE104□4200FA	100kΩ	4150 ±1%	4200 ±1%			
QE503□4250FB	50kΩ	4250 ±1%	4310 ±1%			
QE503□4310FA	50kΩ	4250 ±1%	4310 ±1%			
QE104□4250FB	100kΩ	4250 ±1%	4310 ±1%			
QE104□4310FA	100kΩ	4250 ±1%	4310 ±1%			
QE204□4250FB	200kΩ	4250 ±1%	4310 ±1%			
QE204□4310FA	200kΩ	4250 ±1%	4310 ±1%			
QE104□4500FB	100kΩ	4500 ±1%	4600 ±1%			
QE104□4600FA	100kΩ	4500 ±1%	4600 ±1%			
QE204□4500FB	200kΩ	4500 ±1%	4600 ±1%			
QE204□4600FA	200kΩ	4500 ±1%	4600 ±1%			

* □ Please specify Resistance Tolerance (F= ±1%, G= ±2%, H= ±3%, J= ±5%)

3. R-T Characteristic Curves



4. Reliability Test

Items	Standard	Test Methods	Criteria														
Dropping	IEC 60068-2-32	Free falling at the height of 1 meter to cement floor, 5 times	No visible damage.														
Solderability	IEC 60068-2-58	Immerse the lead wire in a molten solder of $245 \pm 5^{\circ}\text{C}$ for 2~3s.	① No visible damage. ② Wetting shall exceed 95% coverage.														
Resistance to Soldering Heat	IEC 60068-2-58	Immerse the lead wire in a molten solder of $265 \pm 5^{\circ}\text{C}$ for 5 ± 1 s.	① No visible damage. ② R25 variation: within $\pm 3\%$ ③ B constant variation: within $\pm 2\%$														
Tensile Strength of Terminals	IEC60068-2-21	Pulling force: 5N, Duration: 10s															
Temperature cycling	IEC 60068-2-14	① 5 cycles of following sequence without loading.															
		<table><tr><th>Step</th><th>Temperature</th><th>Time</th></tr><tr><td>1</td><td>$-40 \pm 5^{\circ}\text{C}$</td><td>$30 \pm 3\text{min}$</td></tr><tr><td>2</td><td>$25 \pm 2^{\circ}\text{C}$</td><td>$5 \pm 3\text{min}$</td></tr><tr><td>3</td><td>$125 \pm 2^{\circ}\text{C}$</td><td>$30 \pm 3\text{min}$</td></tr><tr><td>4</td><td>$25 \pm 2^{\circ}\text{C}$</td><td>$5 \pm 3\text{min}$</td></tr></table>		Step	Temperature	Time	1	$-40 \pm 5^{\circ}\text{C}$	$30 \pm 3\text{min}$	2	$25 \pm 2^{\circ}\text{C}$	$5 \pm 3\text{min}$	3	$125 \pm 2^{\circ}\text{C}$	$30 \pm 3\text{min}$	4	$25 \pm 2^{\circ}\text{C}$
		Step	Temperature	Time													
		1	$-40 \pm 5^{\circ}\text{C}$	$30 \pm 3\text{min}$													
		2	$25 \pm 2^{\circ}\text{C}$	$5 \pm 3\text{min}$													
		3	$125 \pm 2^{\circ}\text{C}$	$30 \pm 3\text{min}$													
4	$25 \pm 2^{\circ}\text{C}$	$5 \pm 3\text{min}$															
② The chip shall be stabilized at normal condition for 1~2 hours before measuring.																	

Resistance to dry heat	IEC 60068-2-2	① $125 \pm 5^{\circ}\text{C}$ in air, for 1000 ± 24 hours without loading. ② The chip shall be stabilized at normal condition for 1~2 hours before measuring.	① No visible damage. ② R25 variation: within $\pm 5\%$ ③ B constant variation: within $\pm 2\%$
Resistance to cold	IEC 60068-2-1	① $-40 \pm 3^{\circ}\text{C}$ in air, for 1000 ± 24 hours without loading. ② The chip shall be stabilized at normal condition for 1~2 hours before measuring.	
Resistance to damp heat	IEC 60068-2-78	① $40 \pm 2^{\circ}\text{C}$, 90~95%RH in air, for 1000 ± 24 hours without loading. ② The chip shall be stabilized at normal condition for 1~2 hours before measuring.	

5. Packaging and Storage

a) Packaging

Packaging way: Bulk Packing

b) Storage

Storage Conditions

- a. Storage temperature: $20 \pm 15^{\circ}\text{C}$
- b. Relative humidity: $\leq 75\% \text{RH}$
- c. Keep away from corrosive atmosphere and sunlight.

Period of Storage: Six months