



MZ6 Type PTC Thermistors For Electric Motor Protectio

I Overview

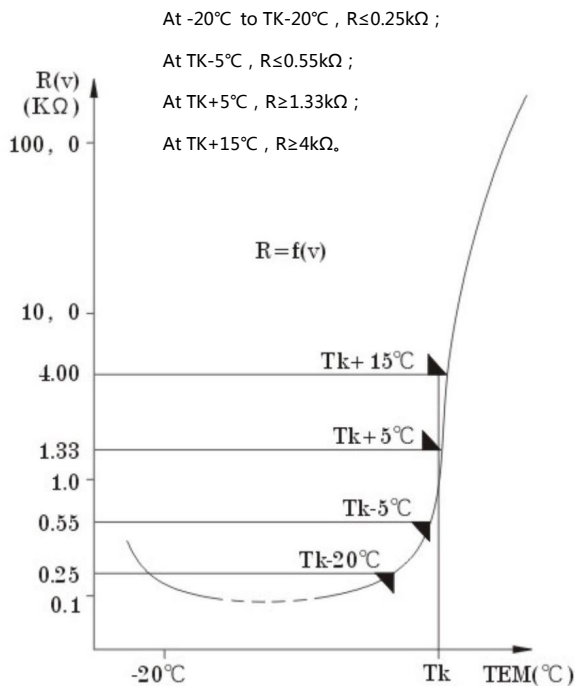
MZ6 Type PTC Thermistors is designed for electric motor Protection. The key technology was introduced from the United States of America in 1990s. Already has had more than 10 years production experience. It is available for different products and also over temperature protection on the main parts inside the electric motor. For example, the PTC thermistors are embedded into the three-phase Electric motor stator winding. When the temperature of Stator winding of electric motor up to the insulation grade temperature of insulated material the resistance of PTC Thermistors will rise at the same time. And the signal is transmitted to the protector to switch off the current of electric motor and finally prevent the electric motor from being burned out. This way is widely used in the world



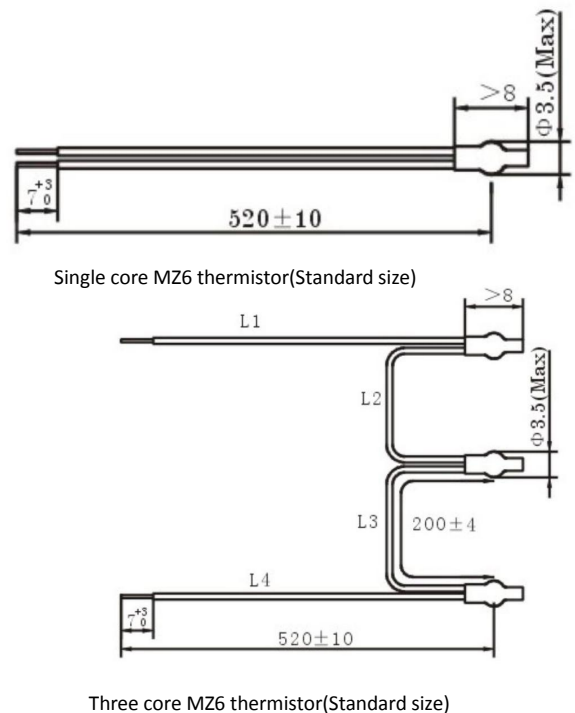
II Features

Mz6 type ptc thermistors For Electric Motor Protection accords with the international standard of DN440S1/DIN44S0S> The dimension of the chip is small (size: 1.SX0 6mm). response is Mz6 type quick, the kind of products is complete. The performance of PTC Thermistors is stable, and reliable for a long time use Especially when lacks of phases it can rapidly respond to protect the electric motor as well.

III Single core R-T curve



IV Dimension (mm)





V Technical Specifications

| Technical Specifications | | Single PTC | Triple PTC | Units |
|--|-------------------------------|------------|------------|-------|
| Max working voltage | Umax | 30 | 30 | V |
| Normal using voltage | V | ≤2.5 | ≤2.5 | V |
| Rated action temperature | Tk | 60~180 | 60~180 | °C |
| Tk tolerance | | ±5 | ±5 | °C |
| Tk repeatability | △T | ±0.5 | ±0.5 | °C |
| Resistance in normal temperature T=25 ± 1 °C (V ≤ 2.5V) | R25 | ≤100 | ≤300 | Ω |
| PTC resistance at some temperature(V ≤ 2.5V) | TK-5°C | ≤550 | ≤1650 | Ω |
| PTC resistance at some temperature(V ≤ 2.5V) | Tk+5°C | ≥1330 | ≥3990 | Ω |
| PTC resistance at some temperature(V ≤ 2.5V) | Tk+15°C | ≥4 | ≥12 | KΩ |
| -20°C~Tk-20°C | | ≤250 | ≤750 | Ω |
| Tk reaction time | Td | <5 | <5 | S |
| Insulation strength | V | 2.5 | 2.5 | KV |
| Maximum storage temperature | T1max | 125 | 125 | °C |
| Minimum storage temperature | T1min | -25 | -25 | °C |
| Lead wire color | See the colorful coding below | | | |
| Weight | Wt | 2 | 3.5 | g |

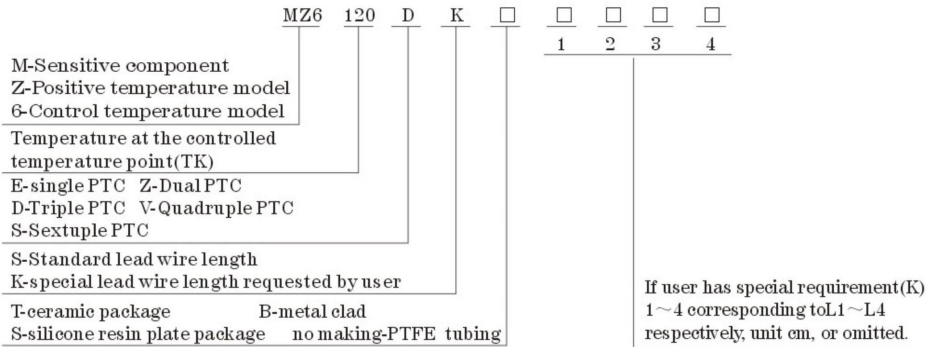
VI Color Coding(For different temperature ratings)

| Reaction Temp (Tk) | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 105 | 110 | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 180 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-----|------|-------|-------|------|-------|------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| 1st wire color | Brown | brown | brown | white | white | white | green | red | blue | brown | blue | gray | red | blue | red | white | white | black | blue | blue | blue | white | white |
| Last wire color | Black | red | gray | gray | brown | white | green | red | gray | brown | green | gray | green | blue | black | blue | black | black | black | red | brown | green | red |

Yellow wires are used between adjoining thermistors.



VII Part Numbering



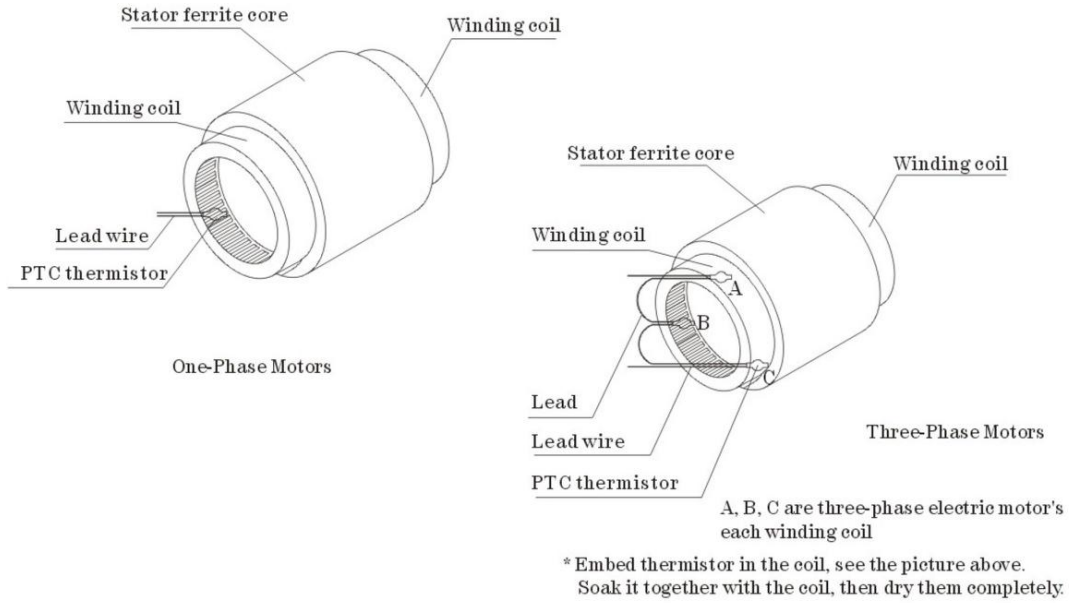
VIII Operating Instruction

The electric motor of different insulation rank selects the different Tk temperature thermistor, its parameter is shown at following table(only reference).

| Electric motor insulation rank | Limited Working Temperature | Thermistor(TK) |
|--------------------------------|-----------------------------|----------------|
| Y | 90 | 80~85℃ |
| A | 105 | 95~100℃ |
| E | 120 | 110~115℃ |
| B | 130 | 120~125℃ |
| F | 155 | 145~150℃ |
| H | 180 | 170~175℃ |
| C | Above 180 | Above 180 |

VIII Note for mounting

1. Insert wire in the winding wire slot of the motor, make it tidy, and then mount the PTC thermistor in the coil of motor (as shown in figure).
2. White mounting, do not hard beat or press the sensing area of the thermistor for fear that the internal precise structure of the product might be damaged.
3. While mounting, do not extremely hard pull the outgoing line of the product for fear that the outgoing line might be pulled apart.
4. Before connecting, read the technical information about PTC temperature control module (the former GRB motor overheat protector) for fear that the thermistor might be damaged.
5. Securely connect the outgoing line in the specified connection position.



X Error and Measure

| Breakdown | Reason | Measure |
|---|---|---|
| Resistance value is too high(measure resistance of the outgoing line by Ohm band of an AVO meter,the resistance value of a single line is higher than 100Ω at 25°C) | 1. The lead of the thermistor opened a way or was in a bad contact. 2. The thermistor was damaged. | 1.Check the lead of the thermistor whether open or not,or in the bad contact 2.Replace the themistor |
| Resistance value is too high(measure resistance of the outgoing line by Ohm band of an AVO meter,the resistance value of a single line is higher than 20Ω at 25°C) | 1.The lead of thermistor was in short circuit; 2.The thermistor was damaged | Check the lead of the thermistor is in short circuit or not,and connect it. 2,Replace the thermistor |
| Sometimes be Normal,Sometimes be abormal, | 1.The lead of thermistor was in in bad contact; 2.The thermistor was damaged | Connect the lead of the thermistor and the binding post tightly. 2.Replace the thermistor |