

NTC Thermistor

Features

This is a Negative Temperature Coefficient Resistor Whose resistance changes with ambient temperature changes. Thermistor comprises 2 or 4 kinds of metal oxides of iron, nickel, cobalt, manganese and copper, being shaped and Sintered at high temperature(1200°C to 1500°C)

Critical Technical Parameters of NTC Thermistor

* R_t ---Resistance Value at Zero-power

It's a resistance which is got at a fixed temperature on a basis of a testing power which causes resistance to Vary in a range which can be ignored in relation to the total testing error.

* R_{25} ---Resistance Value at Rated Zero-power

The design resistance of the thermistor usually refers to the resistance value got at Zero-power at 25°C , which is usually indicated on the thermistor.

* Max. steady state current. I_{max} .

The maximum allowable continuous current passing through thermistor at 25°C.

* Dissipation Coefficient δ

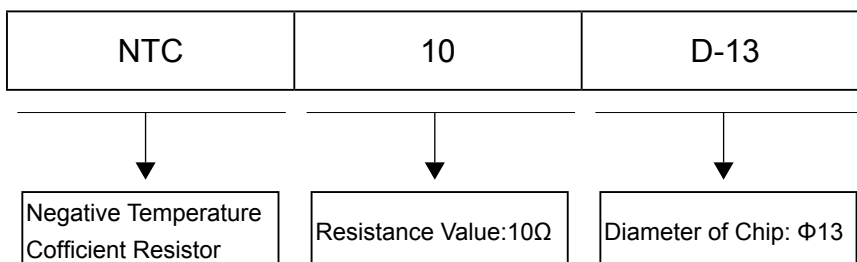
It's the ratio of the changes with a thermistor dissipation power, in a pre-set ambient temperature, to the changes with the temperature. The formula is as below: $\delta = \Delta P / \Delta T$, δ changes in response when the ambient temperature changes, within the ranges of the working temperature.



Applications

Conversion power supply, switch power, UPS power, Kinds of electric heater, electronic energy-saving lamps, electronic ballast etc all kinds of power circuit protection of electronic equipments, filament protection of CRT, bulb and other lighting lamps.

Part Numbering System



NTC Thermistor

Electrical Characteristics

| Type Number | Zero Power Resistance At 25°C | Max. Steady State Current At 25°C | Thermal Dissipation Constant | Thermal Time Constant | Operating Temperature Range | Package Dimensions (mm) |
|-----------------------------------|-------------------------------|-----------------------------------|------------------------------|-----------------------|-----------------------------|-------------------------|
| | Ω | A | mW/°C | Sec | °C | |
| D-5 Series Sensing NTC Thermistor | | | | | | |
| 5D-5 | 5 | 1 | 6 | 20 | -55 ~ +200 | |
| 10D-5 | 10 | 0.7 | 6 | 20 | -55 ~ +200 | |
| 60D-5 | 60 | 0.3 | 6 | 18 | -55 ~ +200 | |
| 200D-5 | 200 | 0.1 | 6 | 18 | -55 ~ +200 | |
| D-7 Series Sensing NTC Thermistor | | | | | | |
| 5D-7 | 5 | 2 | 10 | 28 | -55 ~ +200 | |
| 8D-7 | 8 | 1 | 9 | 27 | -55 ~ +200 | |
| 10D-7 | 10 | 1 | 9 | 27 | -55 ~ +200 | |
| 12D-7 | 12 | 1 | 9 | 27 | -55 ~ +200 | |
| 16D-7 | 16 | 0.7 | 9 | 27 | -55 ~ +200 | |
| 22D-7 | 22 | 0.6 | 9 | 27 | -55 ~ +200 | |
| 33D-7 | 33 | 0.5 | 10 | 28 | -55 ~ +200 | |
| 200D-7 | 200 | 0.2 | 11 | 28 | -55 ~ +200 | |
| D-9 Series Sensing NTC Thermistor | | | | | | |
| 3D-9 | 3 | 4 | 11 | 35 | -55 ~ +200 | |
| 4D-9 | 4 | 3 | 11 | 35 | -55 ~ +200 | |
| 5D-9 | 5 | 3 | 11 | 34 | -55 ~ +200 | |
| 6D-9 | 6 | 2 | 11 | 34 | -55 ~ +200 | |
| 8D-9 | 8 | 2 | 11 | 32 | -55 ~ +200 | |
| 9D-9 | 9 | 2 | 11 | 32 | -55 ~ +200 | |
| 10D-9 | 10 | 1 | 11 | 32 | -55 ~ +200 | |
| 12D-9 | 12 | 1 | 11 | 32 | -55 ~ +200 | |
| 16D-9 | 16 | 1 | 11 | 31 | -55 ~ +200 | |
| 20D-9 | 20 | 1 | 11 | 30 | -55 ~ +200 | |
| 22D-9 | 22 | 1 | 11 | 30 | -55 ~ +200 | |
| 30D-9 | 30 | 1 | 11 | 30 | -55 ~ +200 | |
| 33D-9 | 33 | 1 | 11 | 30 | -55 ~ +200 | |
| 50D-9 | 50 | 1 | 11 | 30 | -55 ~ +200 | |
| 60D-9 | 60 | 0.8 | 11 | 30 | -55 ~ +200 | |
| 80D-9 | 80 | 0.8 | 11 | 30 | -55 ~ +200 | |
| 120D-9 | 120 | 0.8 | 11 | 30 | -55 ~ +200 | |
| 200D-9 | 200 | 0.5 | 11 | 32 | -55 ~ +200 | |
| 400D-9 | 400 | 0.2 | 11 | 32 | -55 ~ +200 | |



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|---|-------------------------------|-----------------------------------|------------------------------|-----------------------|-----------------------------|-------------------------|
| | Ω | A | mW/°C | Sec | °C | |
| D-11 Series Sensing NTC Thermistor | | | | | | |
| 2.5D-11 | 2.5 | 5 | 13 | 43 | -55 ~ +200 | |
| 3D-11 | 3 | 5 | 13 | 43 | -55 ~ +200 | |
| 4D-11 | 4 | 4 | 13 | 44 | -55 ~ +200 | |
| 5D-11 | 5 | 4 | 13 | 45 | -55 ~ +200 | |
| 6D-11 | 6 | 3 | 13 | 45 | -55 ~ +200 | |
| 8D-11 | 8 | 3 | 14 | 47 | -55 ~ +200 | |
| 10D-11 | 10 | 3 | 14 | 47 | -55 ~ +200 | |
| 12D-11 | 12 | 2 | 14 | 48 | -55 ~ +200 | |
| 16D-11 | 16 | 2 | 14 | 50 | -55 ~ +200 | |
| 20D-11 | 20 | 2 | 15 | 52 | -55 ~ +200 | |
| 22D-11 | 22 | 2 | 15 | 52 | -55 ~ +200 | |
| 30D-11 | 30 | 1.5 | 15 | 52 | -55 ~ +200 | |
| 33D-11 | 33 | 1.5 | 15 | 52 | -55 ~ +200 | |
| 50D-11 | 50 | 1.5 | 15 | 52 | -55 ~ +200 | |
| 60D-11 | 60 | 1.5 | 15 | 52 | -55 ~ +200 | |
| 80D-11 | 80 | 1.2 | 15 | 52 | -55 ~ +200 | |
| 120D-13 | 120 | 1.2 | 16 | 65 | -55 ~ +200 | |
| D-13 Series Sensing NTC Thermistor | | | | | | |
| 1.3D-13 | 1.3 | 7 | 13 | 60 | -55 ~ +200 | |
| 1.5D-13 | 1.5 | 7 | 13 | 60 | -55 ~ +200 | |
| 2.5D-13 | 2.5 | 6 | 13 | 60 | -55 ~ +200 | |
| 3D-13 | 3 | 6 | 14 | 60 | -55 ~ +200 | |
| 4D-13 | 4 | 5 | 15 | 67 | -55 ~ +200 | |
| 5D-13 | 5 | 5 | 15 | 68 | -55 ~ +200 | |
| 6D-13 | 6 | 4 | 15 | 65 | -55 ~ +200 | |
| 7D-13 | 7 | 4 | 15 | 65 | -55 ~ +200 | |
| 8D-13 | 8 | 4 | 15 | 60 | -55 ~ +200 | |
| 10D-13 | 10 | 4 | 15 | 65 | -55 ~ +200 | |
| 12D-13 | 12 | 3 | 16 | 65 | -55 ~ +200 | |
| 15D-13 | 15 | 3 | 16 | 60 | -55 ~ +200 | |
| 16D-13 | 16 | 3 | 16 | 60 | -55 ~ +200 | |
| 20D-13 | 20 | 3 | 16 | 65 | -55 ~ +200 | |
| 30D-13 | 30 | 2.5 | 16 | 65 | -55 ~ +200 | |
| 47D-13 | 47 | 2 | 17 | 65 | -55 ~ +200 | |
| 120D-13 | 120 | 1.2 | 16 | 65 | -55 ~ +200 | |

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|---|-------------------------------|-----------------------------------|------------------------------|-----------------------|-----------------------------|-------------------------|
| | Ω | A | mW/°C | Sec | °C | |
| D-15 Series Sensing NTC Thermistor | | | | | | |
| 1.3D-15 | 1.3 | 8 | 18 | 68 | -55 ~ +200 | |
| 1.5D-15 | 1.5 | 8 | 18 | 69 | -55 ~ +200 | |
| 3D-15 | 3 | 7 | 18 | 76 | -55 ~ +200 | |
| 5D-15 | 5 | 6 | 20 | 76 | -55 ~ +200 | |
| 6D-15 | 6 | 5 | 20 | 80 | -55 ~ +200 | |
| 7D-15 | 7 | 5 | 20 | 80 | -55 ~ +200 | |
| 8D-15 | 8 | 5 | 20 | 80 | -55 ~ +200 | |
| 10D-15 | 10 | 5 | 20 | 75 | -55 ~ +200 | |
| 12D-15 | 12 | 5 | 21 | 75 | -55 ~ +200 | |
| 15D-15 | 15 | 4 | 21 | 85 | -55 ~ +200 | |
| 16D-15 | 16 | 4 | 21 | 70 | -55 ~ +200 | |
| 20D-15 | 20 | 4 | 21 | 86 | -55 ~ +200 | |
| 30D-15 | 30 | 3 | 21 | 75 | -55 ~ +200 | |
| 47D-15 | 47 | 3 | 21 | 86 | -55 ~ +200 | |
| 120D-15 | 120 | 1.8 | 22 | 87 | -55 ~ +200 | |
| D-20 Series Sensing NTC Thermistor | | | | | | |
| 0.7D-20 | 0.7 | 11 | 24 | 89 | -55 ~ +200 | |
| 1.3D-20 | 1.3 | 9 | 24 | 88 | -55 ~ +200 | |
| 3D-20 | 3 | 8 | 24 | 88 | -55 ~ +200 | |
| 5D-20 | 5 | 7 | 24 | 87 | -55 ~ +200 | |
| 6D-20 | 6 | 6 | 25 | 103 | -55 ~ +200 | |
| 8D-20 | 8 | 6 | 25 | 105 | -55 ~ +200 | |
| 10D-20 | 10 | 6 | 25 | 102 | -55 ~ +200 | |
| 12D-20 | 12 | 5 | 25 | 100 | -55 ~ +200 | |
| 16D-20 | 16 | 5 | 25 | 100 | -55 ~ +200 | |
| D-25 Series Sensing NTC Thermistor | | | | | | |
| 1D-25 | 1 | 12 | 30 | 120 | -55 ~ +200 | |
| 1.5D-25 | 1.5 | 10 | 30 | 121 | -55 ~ +200 | |
| 3D-25 | 3 | 9 | 32 | 124 | -55 ~ +200 | |
| 5D-25 | 5 | 8 | 32 | 125 | -55 ~ +200 | |
| 8D-25 | 8 | 7 | 33 | 125 | -55 ~ +200 | |
| 10D-25 | 10 | 7 | 32 | 125 | -55 ~ +200 | |
| 12D-25 | 12 | 6 | 32 | 126 | -55 ~ +200 | |
| 16D-25 | 16 | 6 | 35 | 126 | -55 ~ +200 | |

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