

# Power NTC Thermistors For Limiting Inrush Current-PS Series (Silicone Resin Coating) Data Sheet

## Feature

■ Wide diameter range from  $\phi 5$  to  $\phi 20$

■ Operating Temperature



| Style                                   | Operating Temperature Range                    |
|---|--|
| $\phi 5$                                | $-40^{\circ}\text{C} \sim 155^{\circ}\text{C}$ |
| $\phi 7 / \phi 9 / \phi 11$             | $-40^{\circ}\text{C} \sim 175^{\circ}\text{C}$ |
| $\phi 13 / \phi 15 / \phi 20 / \phi 25$ | $-40^{\circ}\text{C} \sim 200^{\circ}\text{C}$ |

■ Storage Temperature:  $15^{\circ}\text{C} \sim 35^{\circ}\text{C}$

## Applications

■ Suitable for power supply, electronic motors, transformers, adapters, projectors, halogen machines, LED drive circuits, etc.

## Applicable Standard

| Approval   | Organization | Safety Standards | Certificate No. |
|--|--------------|------------------|-----------------|
| China<br>         | CQC          | GB/T 6663.1      | CQC15001128226  |
| USA<br>Canada<br> | UL           | UL 1434          | E474052         |

## Part Number Code

|    |    |     |    |   |   |   |    |   |   |   |   |
|----|----|-----|----|---|---|---|----|---|---|---|---|
| MF | 05 | 100 | X8 | M | 3 | B | X7 | C | S | B | 0 |
|----|----|-----|----|---|---|---|----|---|---|---|---|

**Songtian**  
MF:NTC

**Zero Power Resistance**  
0R5:0.5Ω  
080:8Ω  
100:10Ω  
121:120Ω

**Tolerance**  
M:±20%

**Pitch**  
B:5.0mm  
E:7.5mm  
D:10.0mm

**Package**  
B: Bulk  
T: Tape

**Inner Management**

**Encapsulation material**  
**Environmental Standard**  
S:Silicone+RoHS  
F:Silicone +Halogen-Free

**Core Diameter**  
05:5mm  
20:20mm

**Foot Type**  
1:Long straight  
2:Outside Crimped  
3:Short Straight  
4:Inside kink lead  
8:Vertical Crimped

**Lead Material**  
C:Copper wire

**Maximum Steady State Current**  
X1:0.1A  
S5:1.5A  
03:3.0A  
10:10A

**Lead Length**  
S0~S9:1.0~1.9mm  
X0~X9:2.0~2.9mm  
A0~A9:3.0~3.9mm  
B0~B9:4.0~4.9mm  
C0~C9:5.0~5.9mm  
D0~D9:6.0~6.9mm  
E0~E9:7.0~7.9mm

**Lead Length**  
F0~F9:8.0~8.9mm  
G0~G9:9.0~9.9mm  
H0~H9:10.0~10.9mm  
J0~J9:11.0~11.9mm  
K0~K9:12.0~12.9mm  
L0~L9:13.0~13.9mm  
M0~M9:14.0~14.9mm

**Lead Length**  
M0~M9:14.0~14.9mm  
N0:16~27.0mm(Bulk)  
**Crimped Lead Taped**  
N0:H0=16.5mm  
P0:H0=17.0mm  
Q0:H0=19.0mm  
**Straight Lead**  
Q0:20.0mm

## Electrical Characteristics

### □ D-5 Series

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 5D-5        | 5                                     | 1                                | 0.353   | 2500             | <20                       | >6                                   | -40°C~155°C                      | √        | √   |
| 8D-5        | 8                                     | 0.8                              | 0.675   | 2600             | <20                       | >6                                   | -40°C~155°C                      |          |     |
| 10D-5       | 10                                    | 0.7                              | 0.771   | 2600             | <20                       | >6                                   | -40°C~155°C                      | √        | √   |
| 15D-5       | 15                                    | 0.6                              | 1.53  | 2600             | <20                       | >6                                   | -40°C~155°C                      | √        | √   |
| 20D-5       | 20                                    | 0.5                              | 1.253   | 2600             | <20                       | >6                                   | -40°C~155°C                      | √        | √   |
| 22D-5       | 22                                    | 0.6                              | 2.06  | 2600             | <20                       | >6                                   | -40°C~155°C                      | √        | √   |
| 30D-5       | 30                                    | 0.4                              | 2.227   | 2600             | <20                       | >6                                   | -40°C~155°C                      | √        | √   |

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 33D-5       | 33                                    | 0.4                              | 1.324   | 2600             | <20                       | >6                                   | -40°C~155°C                      | √        | √   |
| 50D-5       | 50                                    | 0.4                              | 2.653   | 2800             | <18                       | >6                                   | -40°C~155°C                      | √        | √   |
| 60D-5       | 60                                    | 0.3                              | 1.878   | 2800             | <18                       | >6                                   | -40°C~155°C                      | √        | √   |

## □D-7 Series

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 3D-7        | 3                                     | 2                                | 0.218   | 2600             | <30                       | >10                                  | -40°C~175°C                      | √        |     |
| 5D-7        | 5                                     | 2                                | 0.283   | 2600             | <30                       | >10                                  | -40°C~175°C                      | √        | √   |
| 8D-7        | 8                                     | 1                                | 0.539   | 2600             | <28                       | >9                                   | -40°C~175°C                      | √        | √   |
| 10D-7       | 10                                    | 1                                | 0.616   | 2800             | <27                       | >9                                   | -40°C~175°C                      | √        | √   |
| 12D-7       | 12                                    | 1                                | 0.816   | 2800             | <27                       | >9                                   | -40°C~175°C                      | √        | √   |
| 16D-7       | 16                                    | 0.7                              | 1.003   | 2800             | <27                       | >9                                   | -40°C~175°C                      | √        | √   |
| 20D-7       | 20                                    | 0.6                              | 1.102   | 2800             | <27                       | >9                                   | -40°C~175°C                      | √        | √   |
| 22D-7       | 22                                    | 0.6                              | 1.108   | 2800             | <27                       | >9                                   | -40°C~175°C                      | √        | √   |
| 30D-7       | 30                                    | 0.5                              | 3.7059  | 2800             | <28                       | >10                                  | -40°C~175°C                      | √        | √   |
| 33D-7       | 33                                    | 0.2                              | 1.485   | 2800             | <28                       | >10                                  | -40°C~175°C                      | √        | √   |
| 50D-7       | 50                                    | 0.5                              | 1.653   | 2800             | <28                       | >10                                  | -40°C~175°C                      | √        | √   |

## □D-9 Series

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 3D-9        | 3                                     | 4                                | 0.120   | 2600             | <35                       | >11                                  | -40°C~175°C                      | √        | √   |
| 4D-9        | 4                                     | 3                                | 0.190   | 2600             | <35                       | >11                                  | -40°C~175°C                      | √        | √   |
| 5D-9        | 5                                     | 3                                | 0.210   | 2600             | <34                       | >11                                  | -40°C~175°C                      | √        | √   |
| 6D-9        | 6                                     | 2                                | 0.315   | 2600             | <34                       | >11                                  | -40°C~175°C                      | √        | √   |
| 7D-9        | 7                                     | 2                                | 0.3265  | 2800             | <34                       | >11                                  | -40°C~175°C                      | √        | √   |

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 8D-9        | 8                                     | 2                                | 0.400   | 2800             | <32                       | >11                                  | -40°C~175°C                      | √        | √   |
| 10D-9       | 10                                    | 2                                | 0.458   | 2800             | <32                       | >11                                  | -40°C~175°C                      | √        | √   |
| 12D-9       | 12                                    | 1                                | 0.652   | 2800             | <32                       | >11                                  | -40°C~175°C                      | √        | √   |
| 16D-9       | 16                                    | 1                                | 0.802   | 2800             | <31                       | >11                                  | -40°C~175°C                      | √        | √   |
| 20D-9       | 20                                    | 1                                | 0.864   | 3000             | <30                       | >11                                  | -40°C~175°C                      | √        | √   |
| 22D-9       | 22                                    | 1                                | 0.950   | 3000             | <30                       | >11                                  | -40°C~175°C                      | √        | √   |
| 30D-9       | 30                                    | 1                                | 1.022   | 3000             | <30                       | >11                                  | -40°C~175°C                      | √        | √   |
| 33D-9       | 33                                    | 1                                | 1.124   | 3000             | <30                       | >11                                  | -40°C~175°C                      | √        | √   |
| 50D-9       | 50                                    | 1                                | 1.252   | 3200             | <30                       | >11                                  | -40°C~175°C                      | √        | √   |
| 60D-9       | 60                                    | 0.8                              | 1.502   | 3200             | <31                       | >11                                  | -40°C~175°C                      | √        | √   |
| 80D-9       | 80                                    | 0.8                              | 2.010   | 3200             | <30                       | >11                                  | -40°C~175°C                      | √        | √   |
| 120D-9      | 120                                   | 0.8                              | 3.015   | 3200             | <30                       | >11                                  | -40°C~175°C                      | √        | √   |
| 200D-9      | 200                                   | 0.5                              | 5.007   | 3400             | <32                       | >11                                  | -40°C~175°C                      | √        | √   |

### □D-11 Series

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 1.5D-11     | 1.5                                   | 5                                | 0.065   | 2600             | <43                       | >13                                  | -40°C~175°C                      | √        |     |
| 2.5D-11     | 2.5                                   | 5                                | 0.095   | 2600             | <43                       | >13                                  | -40°C~175°C                      | √        | √   |
| 3D-11       | 3                                     | 5                                | 0.100   | 2600             | <43                       | >13                                  | -40°C~175°C                      | √        | √   |
| 4D-11       | 4                                     | 4                                | 0.150   | 2600             | <44                       | >13                                  | -40°C~175°C                      | √        | √   |
| 5D-11       | 5                                     | 4                                | 0.156   | 2800             | <45                       | >13                                  | -40°C~175°C                      | √        | √   |
| 6D-11       | 6                                     | 3                                | 0.240   | 2800             | <45                       | >13                                  | -40°C~175°C                      | √        | √   |
| 7D-11       | 7                                     | 3                                | 0.2824  | 2800             | <45                       | >13                                  | -40°C~175°C                      | √        | √   |
| 8D-11       | 8                                     | 3                                | 0.255   | 2800             | <47                       | >14                                  | -40°C~175°C                      | √        | √   |
| 10D-11      | 10                                    | 3                                | 0.275   | 2800             | <47                       | >14                                  | -40°C~175°C                      | √        | √   |
| 12D-11      | 12                                    | 2                                | 0.462   | 2800             | <48                       | >14                                  | -40°C~175°C                      | √        | √   |
| 15D-11      | 15                                    | 2                                | 0.468   | 2800             | <50                       | >14                                  | -40°C~175°C                      | √        | √   |
| 16D-11      | 16                                    | 2                                | 0.470   | 2800             | <50                       | >14                                  | -40°C~175°C                      | √        | √   |
| 20D-11      | 20                                    | 2                                | 0.512   | 3000             | <52                       | >15                                  | -40°C~175°C                      | √        | √   |
| 22D-11      | 22                                    | 2                                | 0.563   | 3000             | <52                       | >15                                  | -40°C~175°C                      | √        | √   |

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 25D-11      | 25                                    | 2                                | 0.623   | 3000             | <52                       | >15                                  | -40°C ~ 175°C                    | √        | √   |
| 30D-11      | 30                                    | 1.5                              | 0.667   | 3000             | <52                       | >15                                  | -40°C ~ 175°C                    | √        | √   |
| 33D-11      | 33                                    | 1.5                              | 0.734   | 3000             | <52                       | >15                                  | -40°C ~ 175°C                    | √        | √   |
| 47D-11      | 47                                    | 1.5                              | 1.002   | 3200             | <52                       | >15                                  | -40°C ~ 175°C                    | √        | √   |
| 50D-11      | 50                                    | 1.5                              | 1.021   | 3200             | <52                       | >15                                  | -40°C ~ 175°C                    | √        | √   |
| 60D-11      | 60                                    | 1.5                              | 1.215   | 3200             | <52                       | >15                                  | -40°C ~ 175°C                    | √        | √   |
| 80D-11      | 80                                    | 1.2                              | 1.656   | 3200             | <52                       | >15                                  | -40°C ~ 175°C                    | √        | √   |
| 120D-11     | 120                                   | 1.1                              | 2.253   | 3000             | <50                       | >15                                  | -40°C ~ 175°C                    | √        | √   |

### □D-13 Series

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 1.3D-13     | 1.3                                   | 7                                | 0.062   | 2600             | <60                       | >13                                  | -40°C ~ 200°C                    | √        | √   |
| 1.5D-13     | 1.5                                   | 7                                | 0.073   | 2600             | <60                       | >13                                  | -40°C ~ 200°C                    | √        | √   |
| 2.5D-13     | 2.5                                   | 6                                | 0.088   | 2600             | <60                       | >13                                  | -40°C ~ 200°C                    | √        | √   |
| 3D-13       | 3                                     | 6                                | 0.092   | 2600             | <60                       | >14                                  | -40°C ~ 200°C                    | √        | √   |
| 4D-13       | 4                                     | 5                                | 0.120   | 2800             | <67                       | >15                                  | -40°C ~ 200°C                    | √        | √   |
| 4.7D-13     | 4.7                                   | 5                                | 0.1469  | 2800             | <67                       | >15                                  | -40°C ~ 200°C                    | √        | √   |
| 5D-13       | 5                                     | 5                                | 0.125   | 2800             | <68                       | >15                                  | -40°C ~ 200°C                    | √        | √   |
| 6D-13       | 6                                     | 4                                | 0.170   | 2800             | <65                       | >15                                  | -40°C ~ 200°C                    | √        | √   |
| 7D-13       | 7                                     | 4                                | 0.188   | 3000             | <65                       | >15                                  | -40°C ~ 200°C                    | √        | √   |
| 8D-13       | 8                                     | 4                                | 0.194   | 3000             | <60                       | >15                                  | -40°C ~ 200°C                    | √        | √   |
| 10D-13      | 10                                    | 4                                | 0.206   | 3000             | <65                       | >15                                  | -40°C ~ 200°C                    | √        | √   |
| 12D-13      | 12                                    | 3                                | 0.316   | 3200             | <65                       | >16                                  | -40°C ~ 200°C                    | √        | √   |
| 15D-13      | 15                                    | 3                                | 0.335   | 3200             | <60                       | >16                                  | -40°C ~ 200°C                    | √        | √   |
| 16D-13      | 16                                    | 3                                | 0.338   | 3200             | <60                       | >16                                  | -40°C ~ 200°C                    | √        | √   |
| 18D-13      | 18                                    | 3                                | 0.356   | 3200             | <60                       | >16                                  | -40°C ~ 200°C                    | √        | √   |
| 20D-13      | 20                                    | 3                                | 0.372   | 3200             | <65                       | >16                                  | -40°C ~ 200°C                    | √        | √   |
| 22D-13      | 22                                    | 3                                | 0.625   | 3200             | <65                       | >16                                  | -40°C ~ 200°C                    | √        | √   |
| 25D-13      | 25                                    | 2.5                              | 0.422   | 3200             | <65                       | >16                                  | -40°C ~ 200°C                    | √        | √   |

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 30D-13      | 30                                    | 2.5                              | 0.517   | 3200             | <65                       | >16                                  | -40°C~200°C                      | √        | √   |
| 33D-13      | 33                                    | 2.5                              | 0.592   | 3200             | <65                       | >16                                  | -40°C~200°C                      | √        | √   |
| 47D-13      | 47                                    | 2                                | 0.810   | 3200             | <65                       | >17                                  | -40°C~200°C                      | √        | √   |
| 50D-13      | 50                                    | 2                                | 1.161   | 3200             | <65                       | >13                                  | -40°C~200°C                      | √        | √   |
| 120D-13     | 120                                   | 1.2                              | 2.124   | 3400             | <65                       | >17                                  | -40°C~200°C                      | √        | √   |

### ☑D-15 Series

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 1.3D-15     | 1.3                                   | 8                                | 0.048   | 2600             | <68                       | >18                                  | -40°C~200°C                      | √        | √   |
| 1.5D-15     | 1.5                                   | 8                                | 0.052   | 2600             | <69                       | >18                                  | -40°C~200°C                      | √        | √   |
| 2.5D-15     | 2.5                                   | 7                                | 0.065   | 2800             | <76                       | >18                                  | -40°C~200°C                      | √        | √   |
| 3D-15       | 3                                     | 7                                | 0.075   | 2800             | <76                       | >18                                  | -40°C~200°C                      | √        | √   |
| 4D-15       | 4                                     | 6                                | 0.1985  | 2800             | <76                       | >18                                  | -40°C~200°C                      | √        | √   |
| 5D-15       | 5                                     | 6                                | 0.112   | 3000             | <76                       | >20                                  | -40°C~200°C                      | √        | √   |
| 6D-15       | 6                                     | 5                                | 0.155   | 3000             | <80                       | >20                                  | -40°C~200°C                      | √        | √   |
| 7D-15       | 7                                     | 5                                | 0.173   | 3000             | <80                       | >20                                  | -40°C~200°C                      | √        | √   |
| 8D-15       | 8                                     | 5                                | 0.178   | 3000             | <80                       | >20                                  | -40°C~200°C                      | √        | √   |
| 10D-15      | 10                                    | 5                                | 0.180   | 3200             | <75                       | >20                                  | -40°C~200°C                      | √        | √   |
| 12D-15      | 12                                    | 4                                | 0.250   | 3200             | <75                       | >20                                  | -40°C~200°C                      | √        | √   |
| 15D-15      | 15                                    | 4                                | 0.268   | 3200             | <85                       | >21                                  | -40°C~200°C                      | √        | √   |
| 16D-15      | 16                                    | 4                                | 0.276   | 3200             | <70                       | >21                                  | -40°C~200°C                      | √        | √   |
| 18D-15      | 18                                    | 4                                | 0.3375  | 3200             | <70                       | >21                                  | -40°C~200°C                      | √        | √   |
| 20D-15      | 20                                    | 4                                | 0.288   | 3200             | <86                       | >21                                  | -40°C~200°C                      | √        | √   |
| 22D-15      | 22                                    | 4                                | 0.3812  | 3200             | <86                       | >21                                  | -40°C~200°C                      | √        | √   |
| 25D-15      | 25                                    | 3.5                              | 0.358   | 3200             | <86                       | >21                                  | -40°C~200°C                      | √        | √   |
| 30D-15      | 30                                    | 3.5                              | 0.438   | 3200             | <75                       | >21                                  | -40°C~200°C                      | √        | √   |
| 33D-15      | 33                                    | 3                                | 0.571   | 3200             | <86                       | >21                                  | -40°C~200°C                      | √        | √   |
| 40D-15      | 40                                    | 3                                | 0.587   | 3200             | <86                       | >21                                  | -40°C~200°C                      | √        | √   |

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 47D-15      | 47                                    | 3                                | 0.680   | 3200             | <86                       | >21                                  | -40°C~200°C                      | √        | √   |
| 50D-15      | 50                                    | 3                                | 0.734   | 3200             | <86                       | >21                                  | -40°C~200°C                      | √        | √   |
| 120D-15     | 120                                   | 1.8                              | 1.652   | 3400             | <87                       | >22                                  | -40°C~200°C                      | √        | √   |

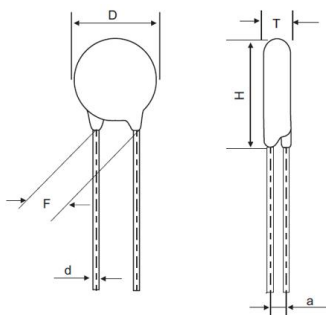
## □D-20 Series

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 0.7D-20     | 0.7                                   | 11                               | 0.018   | 2400             | <89                       | >24                                  | -40°C~200°C                      | √        | √   |
| 1D-20       | 1                                     | 9                                | 0.030   | 2600             | <88                       | >24                                  | -40°C~200°C                      | √        |     |
| 1.3D-20     | 1.3                                   | 9                                | 0.037   | 2600             | <88                       | >24                                  | -40°C~200°C                      | √        | √   |
| 2.2D-20     | 2.2                                   | 8                                | 0.1292  | 2800             | <88                       | >24                                  | -40°C~200°C                      | √        | √   |
| 2.5D-20     | 2.5                                   | 8                                | 0.052   | 2800             | <88                       | >24                                  | -40°C~200°C                      | √        | √   |
| 3D-20       | 3                                     | 8                                | 0.055   | 2800             | <88                       | >24                                  | -40°C~200°C                      | √        | √   |
| 5D-20       | 5                                     | 7                                | 0.087   | 3000             | <87                       | >24                                  | -40°C~200°C                      | √        | √   |
| 6D-20       | 6                                     | 6                                | 0.113   | 3000             | <103                      | >25                                  | -40°C~200°C                      | √        | √   |
| 8D-20       | 8                                     | 6                                | 0.142   | 3000             | <105                      | >25                                  | -40°C~200°C                      | √        | √   |
| 10D-20      | 10                                    | 6                                | 0.162   | 3200             | <102                      | >25                                  | -40°C~200°C                      | √        | √   |
| 12D-20      | 12                                    | 5                                | 0.195   | 3200             | <100                      | >25                                  | -40°C~200°C                      | √        | √   |
| 16D-20      | 16                                    | 5                                | 0.212   | 3200             | <100                      | >25                                  | -40°C~200°C                      | √        | √   |
| 20D-20      | 20                                    | 4.5                              | 0.248   | 3200             | <105                      | >25                                  | -40°C~200°C                      | √        |     |
| 30D-20      | 30                                    | 4                                | 0.355   | 3200             | <115                      | >26                                  | -40°C~200°C                      | √        |     |
| 33D-20      | 33                                    | 4                                | 0.4495  | 3200             | <90                       | >6                                   | -40°C~200°C                      | √        |     |

## □D-15 Series

| Part Number | Rated Zero Power Resistance @25°C (Ω) | Maximum Steady Current @25°C (A) | Residual Resistor At Maximum Steady Current @25°C (Ω) | B Value (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Approval |     |
|-------------|---------------------------------------|----------------------------------|---|------------------|---------------------------|--------------------------------------|----------------------------------|----------|-----|
|             |                                       |                                  |   |                  |                           |                                      |                                  | CQC      | cUL |
| 2.5D-25     | 2.5                                   | 9                                | 0.135   | 2800             | <160                      | >27                                  | -40°C~200°C                      |          |     |
| 3D-25       | 3                                     | 9                                | 0.044   | 2800             | <124                      | >32                                  | -40°C~200°C                      |          |     |
| 5D-25       | 5                                     | 8                                | 0.070   | 3000             | <125                      | >32                                  | -40°C~200°C                      |          |     |
| 10D-25      | 10                                    | 7                                | 0.130   | 3200             | <127                      | >32                                  | -40°C~200°C                      |          |     |
| 16D-25      | 16                                    | 6                                | 0.160   | 3200             | <126                      | >35                                  | -40°C~200°C                      |          |     |
| 20D-25      | 20                                    | 6                                | 0.210   | 3200             | <126                      | >35                                  | -40°C~200°C                      |          |     |

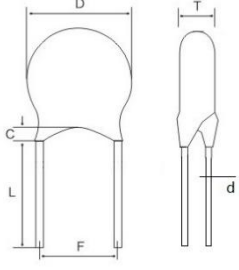
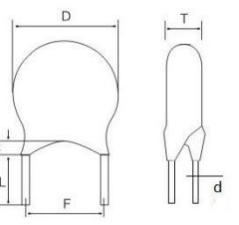
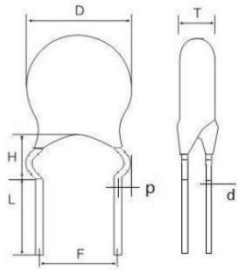
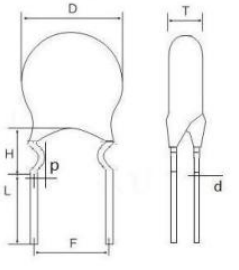
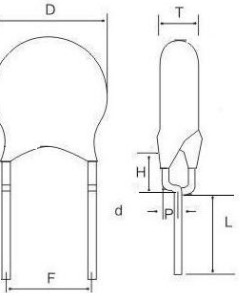
## Dimensions (mm) and Approval



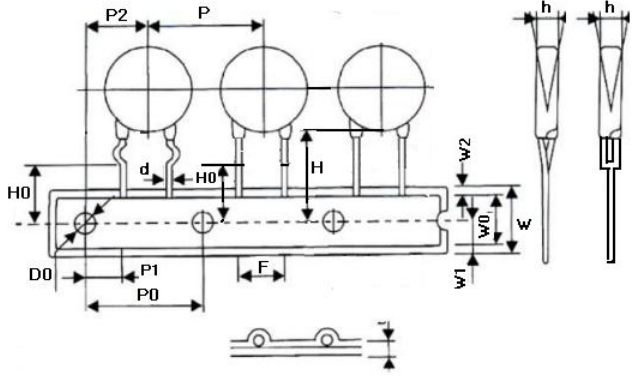
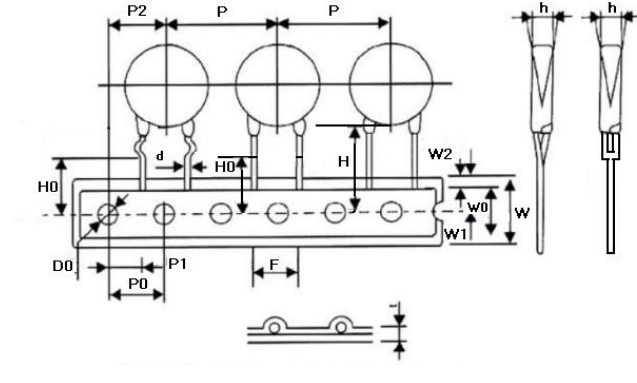
| Part No. | Size (mm) |        |       |        |
|----------|-----------|--------|-------|--------|
|          | D Max.    | T Max. | F±0.8 | d±0.05 |
| □D-5     | 7.0       | 4.5    | 5.0   | 0.6    |
| □D-7     | 9.0       | 5.0    | 5.0   | 0.6    |
| □D-9     | 11.0      | 6.0    | 5.0   | 0.8    |
| □D-11    | 13.0      | 6.5    | 7.5   | 0.8    |
| □D-13    | 15.5      | 7.0    | 7.5   | 0.8    |
| □D-15    | 17.5      | 7.0    | 7.5   | 0.8    |
| □D-20    | 22.5      | 7.0    | 10.0  | 1.0    |
| □D-25    | 22.5      | 7.0    | 10.0  | 1.0    |



## Lead Configuration

| Lead Style       | Drawing   | Lead Length L (mm)                     | Coating Lead Length C (mm) | Height H (mm) |
|------------------|---|--|----------------------------|---------------|
| Long Straight    |    | 16.0 min                               | 3.0 Max                    | /             |
| Short Straight   |    | ①[2.5≤L < 6.0]±0.5;<br>②[6.0≤L≤10]±1.0 | 3.0 Max                    | /             |
| Outside Crimped  |   | ①[2.5≤L < 6.0]±0.5;<br>②[6.0≤L≤10]±1.0 | Not exceed the bend point  | 5.0mm Max     |
| Inner Crimped    |  | ①[2.5≤L < 6.0]±0.5;<br>②[6.0≤L≤10]±1.0 | Not exceed the bend point  | 6.0mm Max     |
| Vertical Crimped |  | ①[2.5≤L < 6.0]±0.5;<br>②[6.0≤L≤10]±1.0 | Not exceed the bend point  | 4.0mm Max     |

## Taping And Dimensions (mm)

| Figure   | Fig.1              |                             | Fig.2                       |                             |              |               |              |
|--|--------------------|-----------------------------|-----------------------------|-----------------------------|--------------|---------------|--------------|
|  | Symbol             | P=5.0                       | P=7.5                       |                             | P=10.0       |               |              |
|    | Po                 | 12.7±0.3                    | 12.7±0.3                    | 12.7±0.3                    |              |               |              |
|  | P                  | 12.7±1.0                    | 25.4±1.0                    | 25.4±1.0                    |              |               |              |
|  | P1                 | 3.85±0.7                    | 8.95±0.7                    | 7.7±0.7                     |              |               |              |
|  | P2                 | 6.35±1.3                    | 12.7±1.3                    | 12.7±1.3                    |              |               |              |
|  | F                  | 5±0.8                       | 7.5±0.8                     | 10.0±0.8                    |              |               |              |
|  | Δh                 | 0±2.0                       | 0±2.0                       | 0±2.0                       |              |               |              |
|  | W                  | 18.0+1.5/-1.0               | 18.0 +1.5/-1.0              | 18.0 +1.5/-1.0              |              |               |              |
|  | Wo                 | 10.5 Max                    | 10.5 Max                    | 10.5 Max                    |              |               |              |
|  | W1                 | 9.0+0.75/-0.5               | 9.0+0.75/-0.5               | 9.0+0.75/-0.5               |              |               |              |
|  | W2                 | 3.0 Max                     | 3.0 Max                     | 3.0 Max                     |              |               |              |
|  | Do                 | 4.0±0.2                     | 4.0±0.2                     | 4.0±0.2                     |              |               |              |
|  | H                  | 20+1.5/-1.0                 | 20+1.5/-1.0                 | 20+1.5/-1.0                 |              |               |              |
|  | Ho                 | 16.5&17.0&19.0<br>+1.5/-1.0 | 16.5&17.0&19.0<br>+1.5/-1.0 | 16.5&17.0&19.0<br>+1.5/-1.0 |              |               |              |
|  | L                  | Straight Lead               | Crimped Lead                | Straight Lead               | Crimped Lead | Straight Lead | Crimped Lead |
|  |                    | 11.0 Max                    | 9.0 Max                     | 11.0 Max                    | 9.0 Max      | 11.0 Max      | 9.0 Max      |
|  | t1                 | 0.5±0.2                     | 0.5±0.2                     | 0.5±0.2                     |              |               |              |
|  | Fig.2 (P=7.5 & 10) | t2                          | 1.7 Max                     | 1.7 Max                     | 1.7 Max      |               |              |

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