

# ANTREX Electronics

Electronic Components Sourcing Information

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## Product Reference Information

**Part Number:** MF112R505M4EP0CST0  
**Manufacturer:** Songtian Electronics Co., Ltd  
**Package:** Box  
**Availability:** Please confirm with sales

**Product Page:**

<https://antrexco.com/product/details/songtian-electronics-co-ltd/mf112r505m4ep0cst0.html>

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## Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

**Note:**

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

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# SPECIFICATION

## PS- Series

## Spec. List

| STE P/N            | Spec    | Approval |                 |     | Marking   |
|--------------------|---------|----------|-----------------|-----|-----------|
|                    |         | CQC      | cUL<br>(Canada) | VDE |           |
| MF0703002M4BP0CST0 | 3D-7    | ✓        |                 | ✓   | Example 2 |
| MF0705002M4BP0CST0 | 5D-7    | ✓        | ✓               | ✓   | Example 1 |
| MF0710001M4BP0CST0 | 10D-7   | ✓        | ✓               | ✓   | Example 1 |
| MF0905003M4BN0CSB0 | 5D-9    | ✓        | ✓               | ✓   | Example 1 |
| MF0908002M4BP0CST0 | 8D-9    | ✓        | ✓               | ✓   | Example 1 |
| MF0910002M4BN0CSB0 | 10D-9   | ✓        | ✓               | ✓   | Example 1 |
| MF0920001M4BN0CSB0 | 20D-9   | ✓        | ✓               | ✓   | Example 1 |
| MF1101005M4EN0CSB0 | 1D-11   |          |                 | ✓   | Example 3 |
| MF1101005M4EP0CST0 | 1D-11   |          |                 | ✓   | Example 3 |
| MF112R505M4EN0CSB0 | 2.5D-11 | ✓        | ✓               | ✓   | Example 1 |
| MF112R505M4EP0CST0 | 2.5D-11 | ✓        | ✓               | ✓   | Example 1 |
| MF1103005M4EP0CST0 | 3D-11   | ✓        | ✓               | ✓   | Example 1 |
| MF1105004M4EP0CST0 | 5D-11   | ✓        | ✓               | ✓   | Example 1 |
| MF1108003M4EP0CST0 | 8D-11   | ✓        | ✓               | ✓   | Example 1 |
| MF1110003M4EP0CST0 | 10D-11  | ✓        | ✓               | ✓   | Example 1 |
| MF1120002M4EP0CST0 | 20D-11  | ✓        | ✓               | ✓   | Example 1 |
| MF131R307M4EP0CST0 | 1.3D-13 | ✓        | ✓               | ✓   | Example 1 |
| MF132R506M4EN0CSB0 | 2.5D-13 | ✓        | ✓               | ✓   | Example 1 |
| MF132R506M4EP0CST0 | 2.5D-13 | ✓        | ✓               | ✓   | Example 1 |
| MF1303006M4EP0CST0 | 3D-13   | ✓        | ✓               | ✓   | Example 1 |
| MF1305005M4EN0CSB0 | 5D-13   | ✓        | ✓               | ✓   | Example 1 |
| MF1305005M4EP0CST0 | 5D-13   | ✓        | ✓               | ✓   | Example 1 |
| MF1310004M4EN0CSB0 | 10D-13  | ✓        | ✓               | ✓   | Example 1 |
| MF152R507M4EN0CSB0 | 2.5D-15 | ✓        | ✓               | ✓   | Example 1 |
| MF1503007M4EP0CST0 | 3D-15   | ✓        | ✓               | ✓   | Example 1 |
| MF1505006M4EP0CST0 | 5D-15   | ✓        | ✓               | ✓   | Example 1 |

|                    |         |   |   |   |           |
|--------------------|---------|---|---|---|-----------|
| MF1520004M4EN0CSB0 | 20D-15  | ✓ | ✓ | ✓ | Example 1 |
| MF1520004M4EP0CST0 | 20D-15  | ✓ | ✓ | ✓ | Example 1 |
| MF202R508M1DN0CSB0 | 2.5D-20 | ✓ | ✓ | ✓ | Example 1 |
| MF2003008M1DN0CSB0 | 3D-20   | ✓ | ✓ | ✓ | Example 1 |
| MF2005007M1DN0CSB0 | 5D-20   | ✓ | ✓ | ✓ | Example 1 |
| MF2010006M1DN0CSB0 | 10D-20  | ✓ | ✓ | ✓ | Example 1 |
| MF2020004M1DN0CSB0 | 20D-20  | ✓ |   | ✓ | Example 2 |
| MF2030004M1DN0CSB0 | 30D-20  | ✓ |   | ✓ | Example 2 |
| MF252R509M1DN0CSB0 | 2.5D-25 |   |   | ✓ | Example 3 |
| MF2503009M1DN0CSB0 | 3D-25   |   |   | ✓ | Example 3 |
| MF2510007M1DN0CSB0 | 10D-25  |   |   | ✓ | Example 3 |
| MF2516006M1DN0CSB0 | 16D-25  |   |   | ✓ | Example 3 |

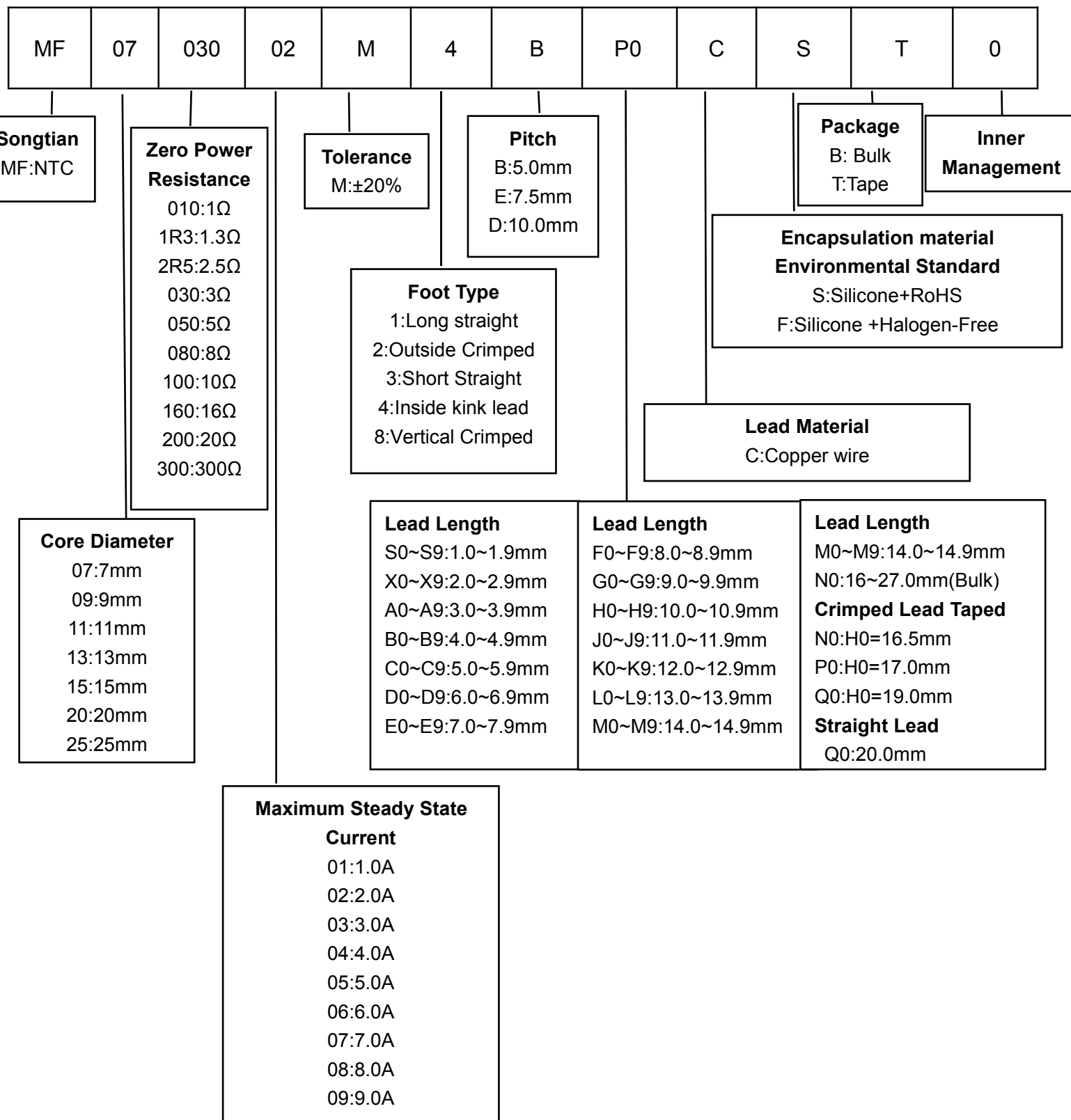
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## 1. Applications

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

## 2. Part Number Code



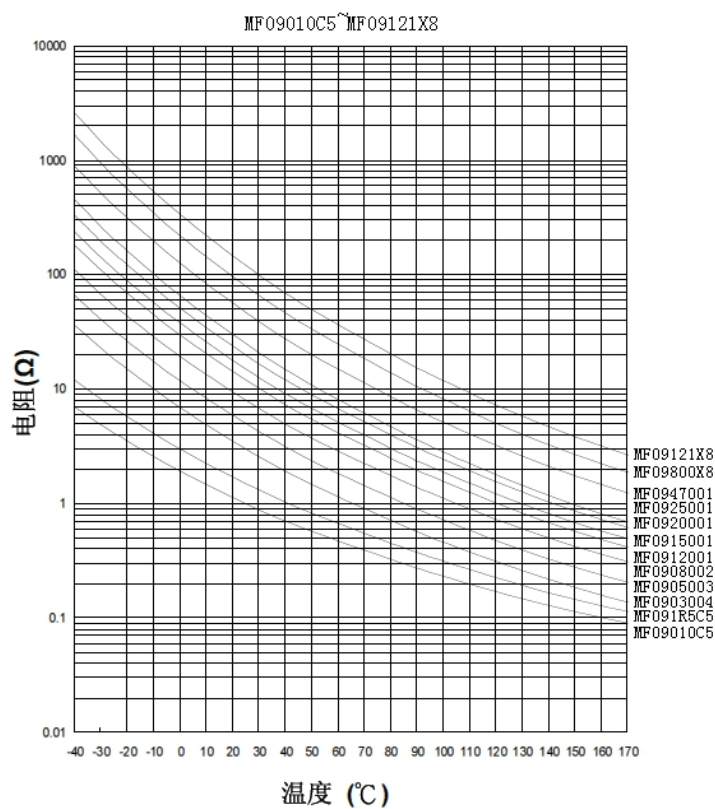
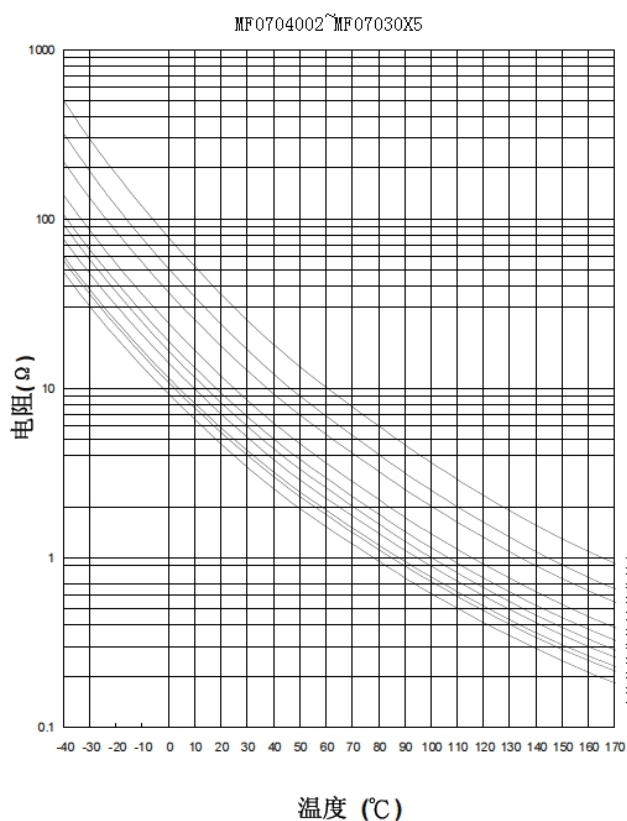
### 3. Electrical Characteristics

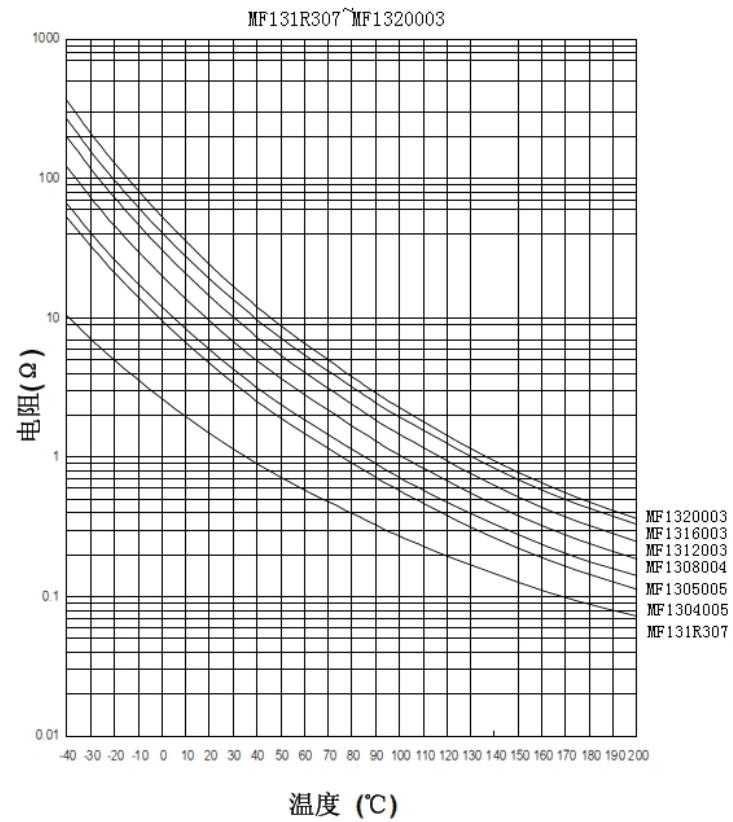
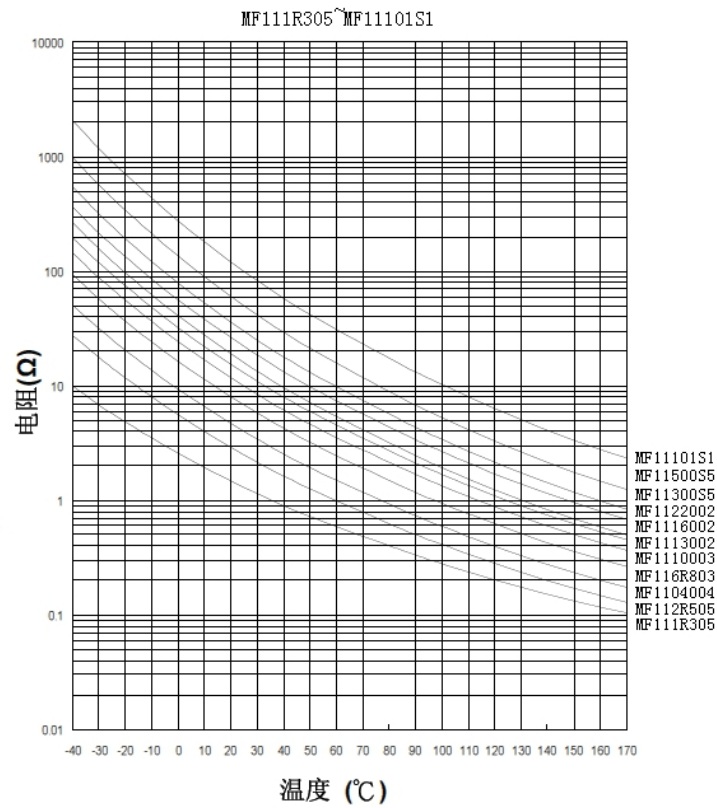
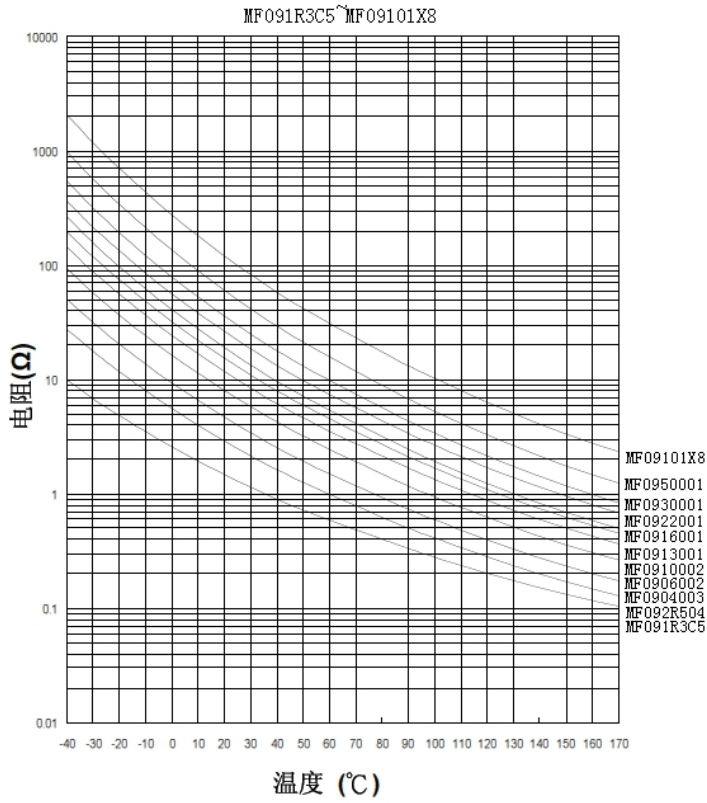
| Part Number | Rated Zero Power Resistance @25°C(Ω) | Nominal B-Constant (K) ±10% | Thermal Time Constant (S) | Heat Dissipation Coefficient (mW/°C) | Operating Temperature Range (°C) | Maximum Steady Current @25°C(A) |
|-------------|--------------------------------------|-----------------------------|---------------------------|--------------------------------------|----------------------------------|---------------------------------|
| 3D-7        | 3                                    | 2600                        | <30                       | >10                                  | -40°C ~ 175°C                    | 2.0                             |
| 5D-7        | 5                                    | 2600                        | <30                       | >10                                  | -40°C ~ 175°C                    | 2.0                             |
| 10D-7       | 1                                    | 2600                        | <30                       | >10                                  | -40°C ~ 175°C                    | 1.0                             |
| 5D-9        | 5                                    | 2600                        | <34                       | >11                                  | -40°C ~ 175°C                    | 3.0                             |
| 8D-9        | 8                                    | 2800                        | <32                       | >11                                  | -40°C ~ 175°C                    | 2.0                             |
| 10D-9       | 10                                   | 2800                        | <32                       | >11                                  | -40°C ~ 175°C                    | 2.0                             |
| 20D-9       | 20                                   | 3000                        | <30                       | >11                                  | -40°C ~ 175°C                    | 1.0                             |
| 1D-11       | 1                                    | 2600                        | <43                       | >13                                  | -40°C ~ 175°C                    | 5.0                             |
| 1D-11       | 1                                    | 2600                        | <43                       | >13                                  | -40°C ~ 175°C                    | 5.0                             |
| 2.5D-11     | 2.5                                  | 2600                        | <43                       | >13                                  | -40°C ~ 175°C                    | 5.0                             |
| 2.5D-11     | 2.5                                  | 2600                        | <43                       | >13                                  | -40°C ~ 175°C                    | 5.0                             |
| 3D-11       | 3                                    | 2600                        | <43                       | >13                                  | -40°C ~ 175°C                    | 5.0                             |
| 5D-11       | 5                                    | 2800                        | <45                       | >13                                  | -40°C ~ 175°C                    | 4.0                             |
| 8D-11       | 8                                    | 2800                        | <47                       | >14                                  | -40°C ~ 175°C                    | 3.0                             |
| 10D-11      | 10                                   | 2800                        | <47                       | >14                                  | -40°C ~ 175°C                    | 3.0                             |
| 20D-11      | 20                                   | 3000                        | <52                       | >15                                  | -40°C ~ 175°C                    | 2.0                             |
| 1.3D-13     | 1.3                                  | 2600                        | <60                       | >13                                  | -40°C ~ 200°C                    | 7.0                             |
| 2.5D-13     | 2.5                                  | 2600                        | <60                       | >13                                  | -40°C ~ 200°C                    | 6.0                             |
| 2.5D-13     | 2.5                                  | 2600                        | <60                       | >13                                  | -40°C ~ 200°C                    | 6.0                             |
| 3D-13       | 3                                    | 2600                        | <60                       | >14                                  | -40°C ~ 200°C                    | 6.0                             |
| 5D-13       | 5                                    | 2800                        | <68                       | >15                                  | -40°C ~ 200°C                    | 5.0                             |
| 5D-13       | 5                                    | 2800                        | <68                       | >15                                  | -40°C ~ 200°C                    | 5.0                             |
| 10D-13      | 10                                   | 3000                        | <65                       | >15                                  | -40°C ~ 200°C                    | 4.0                             |
| 2.5D-15     | 2.5                                  | 2600                        | <76                       | >18                                  | -40°C ~ 200°C                    | 7.0                             |
| 3D-15       | 2.5                                  | 2600                        | <76                       | >18                                  | -40°C ~ 200°C                    | 7.0                             |
| 5D-15       | 5                                    | 3000                        | <76                       | >20                                  | -40°C ~ 200°C                    | 6.0                             |
| 20D-15      | 20                                   | 3200                        | <86                       | >21                                  | -40°C ~ 200°C                    | 4.0                             |

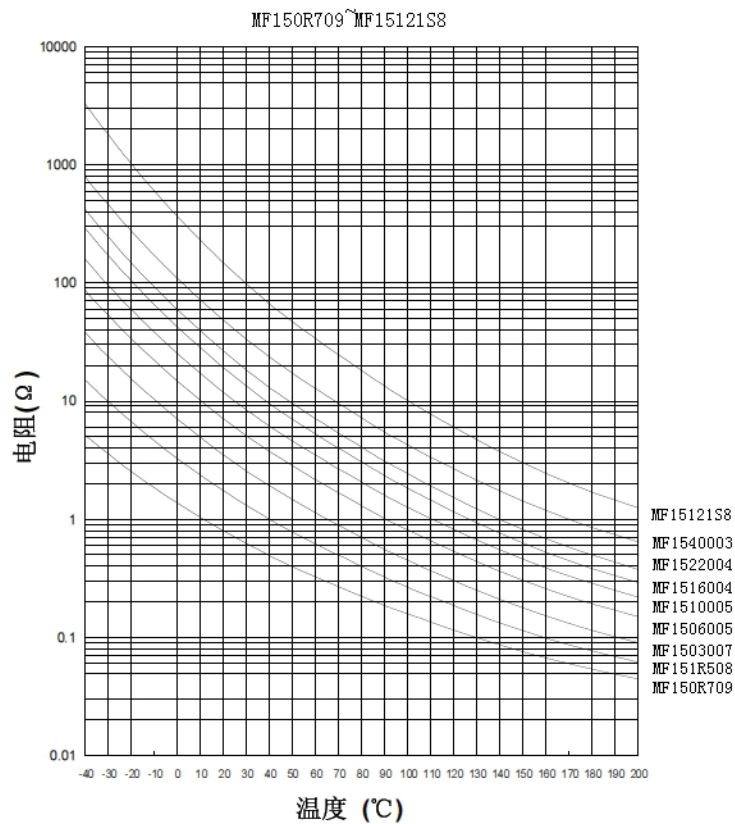
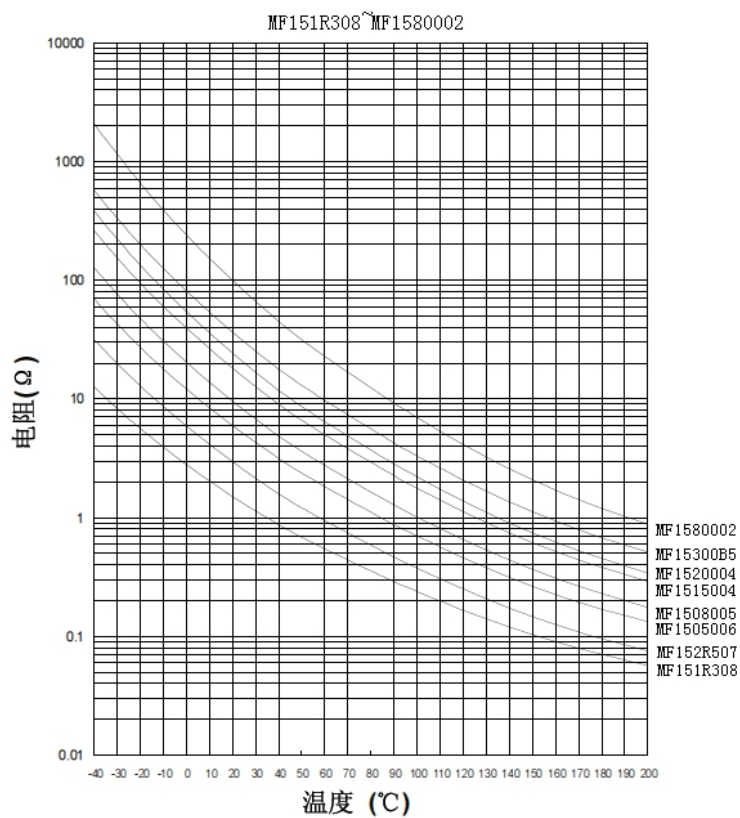
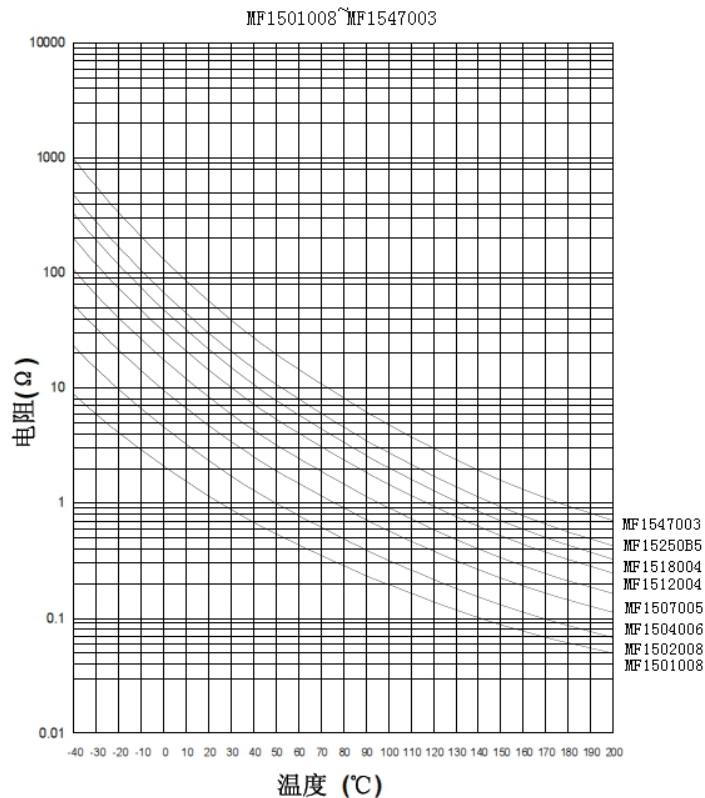
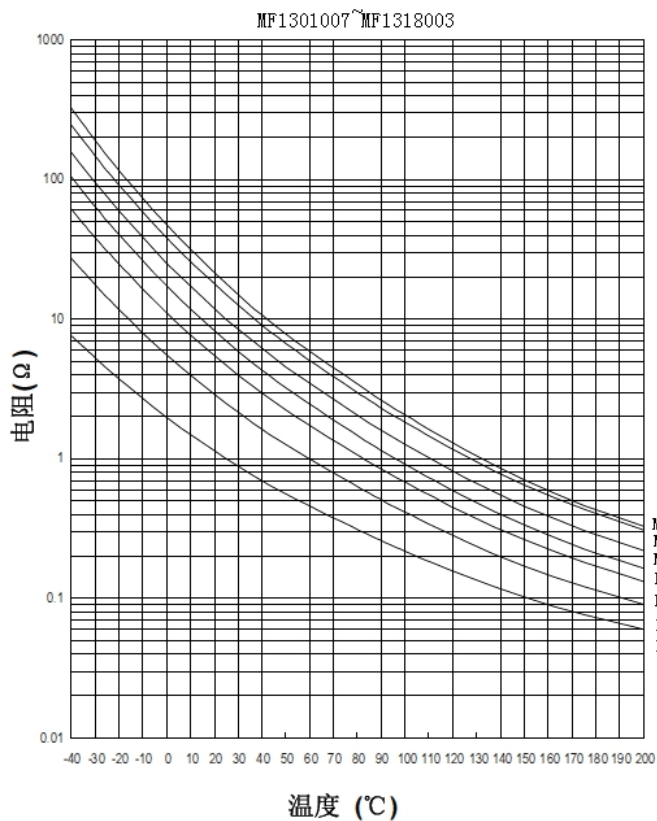
|         |     |      |      |     |           |     |
|---------|-----|------|------|-----|-----------|-----|
| 20D-15  | 20  | 3200 | <86  | >21 | -40℃～200℃ | 4.0 |
| 2.5D-20 | 2.5 | 2800 | <88  | >24 | -40℃～200℃ | 8.0 |
| 3D-20   | 3   | 2800 | <88  | >24 | -40℃～200℃ | 8.0 |
| 5D-20   | 5   | 3000 | <87  | >24 | -40℃～200℃ | 7.0 |
| 10D-20  | 10  | 3200 | <102 | >25 | -40℃～200℃ | 6.0 |
| 20D-20  | 20  | 3200 | <105 | >25 | -40℃～200℃ | 4.0 |
| 30D-20  | 30  | 3200 | <115 | >26 | -40℃～200℃ | 4.0 |
| 2.5D-25 | 2.5 | 2800 | <124 | >32 | -40℃～200℃ | 9.0 |
| 3D-25   | 3   | 2800 | <124 | >32 | -40℃～200℃ | 9.0 |
| 10D-25  | 10  | 3200 | <127 | >32 | -40℃～200℃ | 7.0 |
| 16D-25  | 16  | 3200 | <126 | >35 | -40℃～200℃ | 6.0 |

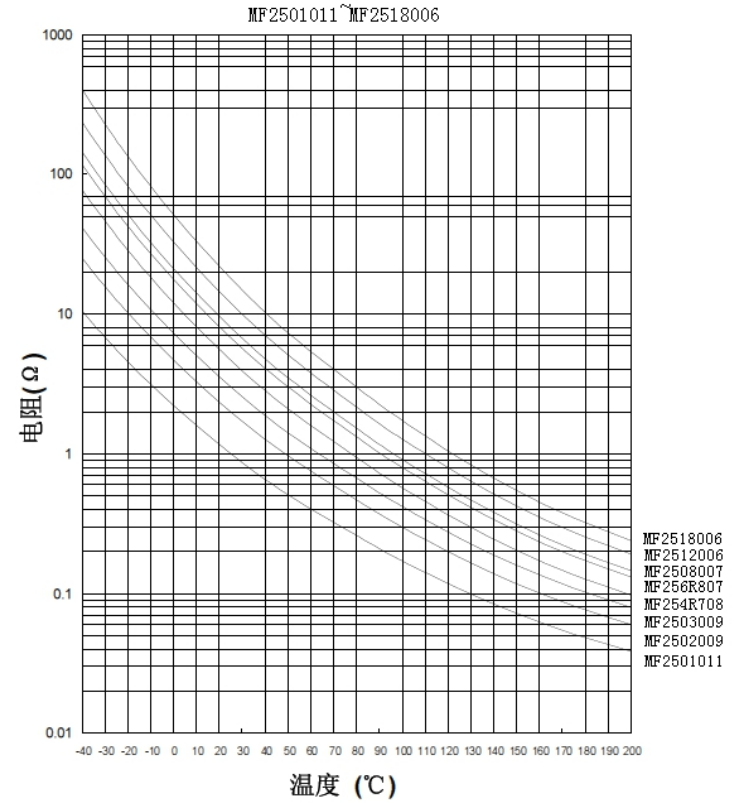
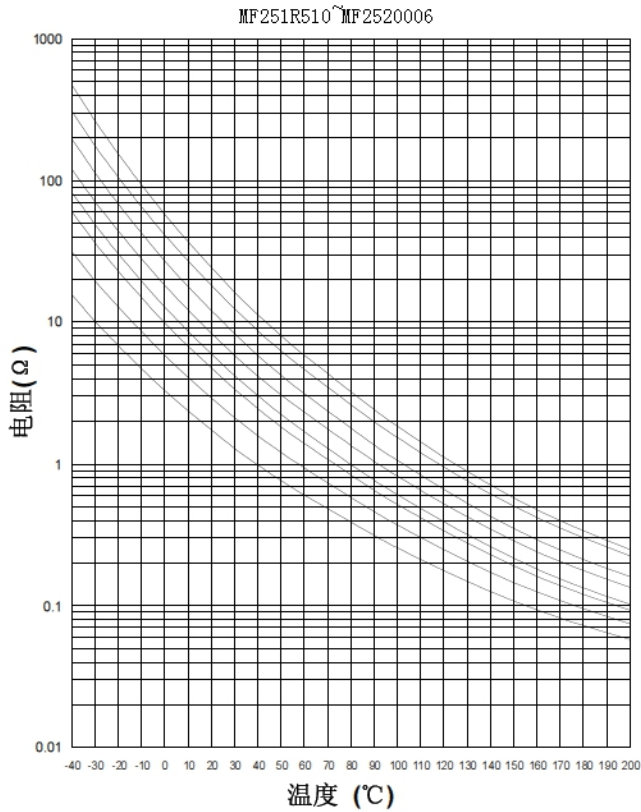
## 4.Characteristic Curves

### R-T Characteristic Curves

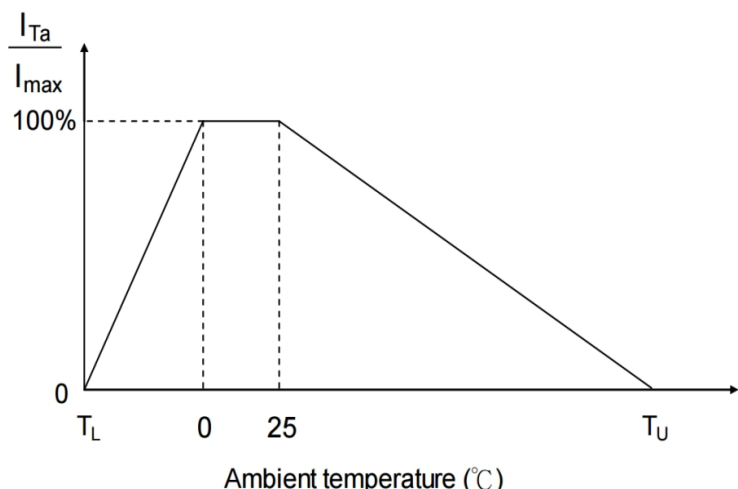








## 5. The Maximum Current Derating Curve



$T_U$ : Maximum operating temperature(°C)

$T_L$ : Minimum operating temperature(°C)

For example:

Ambient temperature( $T_a$ ) = 60°C

Maximum operating temperature( $T_U$ ) = 200°C

$I_{Ta} = [1-(T_a-25)/(T_U-25)] \times I_{max} = 80\% I_{max}$

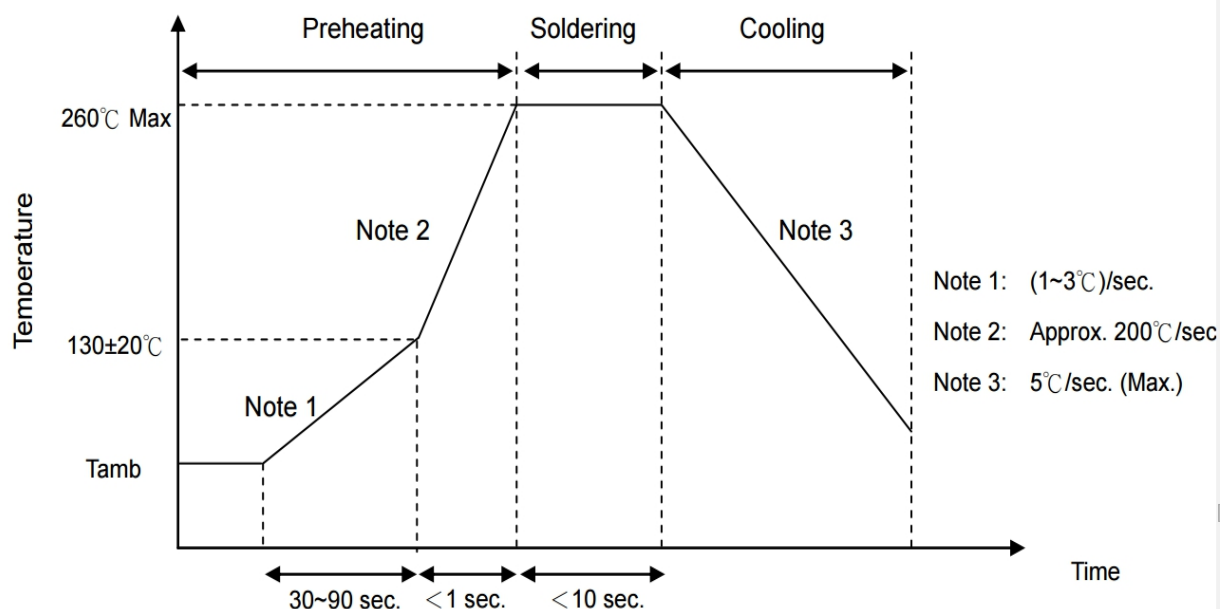
Ambient temperature( $T_a$ ) = -10°C

Minimum operating temperature( $T_L$ ) = -40°C

$I_{Ta} = [1-(T_a - T_L)/(0-T_L)] \times I_{max} = 25\% I_{max}$

## 6. Soldering Recommendation

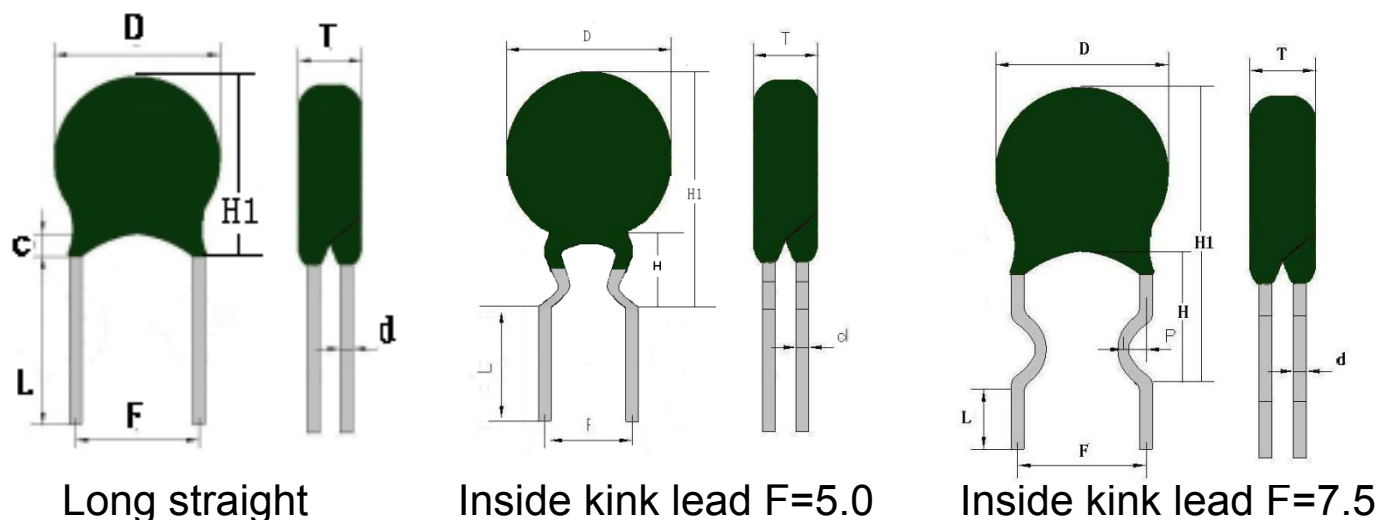
### Wave Soldering Profile



### Recommend Rework Conditions with Soldering Iron

| Item                              | Condition   |
|-----------------------------------|-------------|
| Temperature of Soldering Iron-tip | 360°C (Max) |
| Soldering Time                    | 3 sec(Max)  |
| Distance from Thermistor          | 2 mm(Min)   |

## 7. Dimensions and Approval



| STE P/N                | Spec    | Size (mm) |       |       |       |        |         |        | Packing  |
|------------------------|---------|-----------|-------|-------|-------|--------|---------|--------|----------|
|                        |         | D Max     | T Max | L Min | F±0.8 | d±0.05 | C/H Max | H1 Max |          |
| MF0703002M4<br>BP0CST0 | 3D-7    | 8.5       | 4.5   | /     | 5.0   | 0.6    | 6.0     | 14.5   | Taping 1 |
| MF0705002M4<br>BP0CST0 | 5D-7    | 8.5       | 4.5   | /     | 5.0   | 0.6    | 6.0     | 14.5   | Taping 1 |
| MF0710001M4<br>BP0CST0 | 10D-7   | 8.5       | 4.5   | /     | 5.0   | 0.6    | 6.0     | 14.5   | Taping 1 |
| MF0905003M4<br>BN0CSB0 | 5D-9    | 10.5      | 5.5   | 16.0  | 5.0   | 0.8    | 6.0     | 16.5   | Bulk     |
| MF0908002M4<br>BP0CST0 | 8D-9    | 10.5      | 5.5   | /     | 5.0   | 0.8    | 6.0     | 16.5   | Taping 1 |
| MF0910002M4<br>BN0CSB0 | 10D-9   | 10.5      | 5.5   | 16.0  | 5.0   | 0.8    | 6.0     | 16.5   | Bulk     |
| MF0920001M4<br>BN0CSB0 | 20D-9   | 10.5      | 5.5   | 16.0  | 5.0   | 0.8    | 6.0     | 16.5   | Bulk     |
| MF1101005M4<br>EN0CSB0 | 1D-11   | 12.5      | 6.0   | 16.0  | 7.5   | 0.8    | 6.0     | 18.5   | Bulk     |
| MF1101005M4<br>EP0CST0 | 1D-11   | 12.5      | 6.0   | /     | 7.5   | 0.8    | 6.0     | 18.5   | Taping 2 |
| MF112R505M4<br>EN0CSB0 | 2.5D-11 | 12.5      | 6.0   | 16.0  | 7.5   | 0.8    | 6.0     | 18.5   | Bulk     |
| MF112R505M4<br>EP0CST0 | 2.5D-11 | 12.5      | 6.0   | /     | 7.5   | 0.8    | 6.0     | 18.5   | Taping 2 |
| MF1103005M4<br>EP0CST0 | 3D-11   | 12.5      | 6.0   | /     | 7.5   | 0.8    | 6.0     | 18.5   | Taping 2 |
| MF1105004M4<br>EP0CST0 | 5D-11   | 12.5      | 6.0   | /     | 7.5   | 0.8    | 6.0     | 18.5   | Taping 2 |
| MF1108003M4<br>EP0CST0 | 8D-11   | 12.5      | 6.0   | /     | 7.5   | 0.8    | 6.0     | 18.5   | Taping 2 |

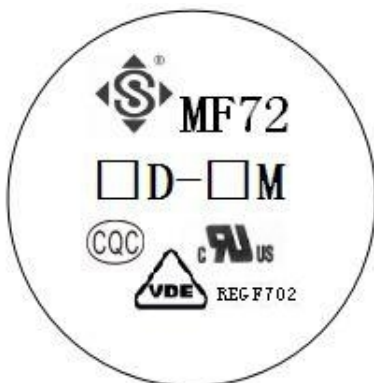
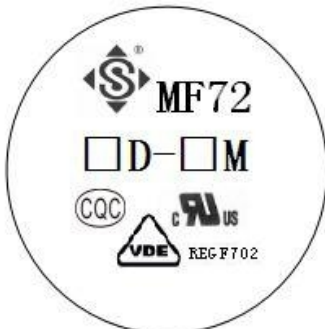
|                        |         |      |     |      |      |     |     |      |          |
|------------------------|---------|------|-----|------|------|-----|-----|------|----------|
| MF1110003M4<br>EP0CST0 | 10D-11  | 12.5 | 6.0 | /    | 7.5  | 0.8 | 6.0 | 18.5 | Taping 2 |
| MF1120002M4<br>EP0CST0 | 20D-11  | 12.5 | 6.0 | /    | 7.5  | 0.8 | 6.0 | 18.5 | Taping 2 |
| MF131R307M4<br>EP0CST0 | 1.3D-13 | 15.0 | 6.5 | /    | 7.5  | 0.8 | 6.0 | 21.0 | Taping 2 |
| MF132R506M4<br>EN0CSB0 | 2.5D-13 | 15.0 | 6.5 | 16.0 | 7.5  | 0.8 | 6.0 | 21.0 | Bulk     |
| MF132R506M4<br>EP0CST0 | 2.5D-13 | 15.0 | 6.5 | /    | 7.5  | 0.8 | 6.0 | 21.0 | Taping 2 |
| MF1303006M4<br>EP0CST0 | 3D-13   | 15.0 | 6.5 | /    | 7.5  | 0.8 | 6.0 | 21.0 | Taping 2 |
| MF1305005M4<br>EN0CSB0 | 5D-13   | 15.0 | 6.5 | 16.0 | 7.5  | 0.8 | 6.0 | 21.0 | Bulk     |
| MF1305005M4<br>EP0CST0 | 5D-13   | 15.0 | 6.5 | /    | 7.5  | 0.8 | 6.0 | 21.0 | Taping 2 |
| MF1310004M4<br>EN0CSB0 | 10D-13  | 15.0 | 6.5 | 16.0 | 7.5  | 0.8 | 6.0 | 21.0 | Bulk     |
| MF152R507M4<br>EN0CSB0 | 2.5D-15 | 17.5 | 6.5 | 16.0 | 7.5  | 0.8 | 6.0 | 23.5 | Bulk     |
| MF1503007M4<br>EP0CST0 | 3D-15   | 17.5 | 6.5 | 16.0 | 7.5  | 0.8 | 6.0 | 23.5 | Bulk     |
| MF1505006M4<br>EP0CST0 | 5D-15   | 17.5 | 6.5 | /    | 7.5  | 0.8 | 6.0 | 23.5 | Taping 2 |
| MF1520004M4<br>EN0CSB0 | 20D-15  | 17.5 | 6.5 | 16.0 | 7.5  | 0.8 | 6.0 | 23.5 | Bulk     |
| MF1520004M4<br>EP0CST0 | 20D-15  | 17.5 | 6.5 | /    | 7.5  | 0.8 | 6.0 | 23.5 | Taping 2 |
| MF202R508M1<br>DN0CSB0 | 2.5D-20 | 22.5 | 7.0 | 16.0 | 10.0 | 1.0 | 3.0 | 25.5 | Bulk     |
| MF2003008M1<br>DN0CSB0 | 3D-20   | 22.5 | 7.0 | 16.0 | 10.0 | 1.0 | 3.0 | 25.5 | Bulk     |
| MF2005007M1<br>DN0CSB0 | 5D-20   | 22.5 | 7.0 | 16.0 | 10.0 | 1.0 | 3.0 | 25.5 | Bulk     |
| MF2010006M1<br>DN0CSB0 | 10D-20  | 22.5 | 7.0 | 16.0 | 10.0 | 1.0 | 3.0 | 25.5 | Bulk     |
| MF2020004M1<br>DN0CSB0 | 20D-20  | 22.5 | 7.0 | 16.0 | 10.0 | 1.0 | 3.0 | 25.5 | Bulk     |
| MF2030004M1<br>DN0CSB0 | 30D-20  | 22.5 | 7.0 | 16.0 | 10.0 | 1.0 | 3.0 | 25.5 | Bulk     |
| MF252R509M1<br>DN0CSB0 | 2.5D-25 | 27.5 | 8.0 | 16.0 | 10.0 | 1.0 | 3.0 | 30.5 | Bulk     |
| MF2503009M1<br>DN0CSB0 | 3D-25   | 27.5 | 8.0 | 16.0 | 10.0 | 1.0 | 3.0 | 30.5 | Bulk     |
| MF2510007M1<br>DN0CSB0 | 10D-25  | 27.5 | 8.0 | 16.0 | 10.0 | 1.0 | 3.0 | 30.5 | Bulk     |
| MF2516006M1<br>DN0CSB0 | 16D-25  | 27.5 | 8.0 | 16.0 | 10.0 | 1.0 | 3.0 | 30.5 | Bulk     |

## 8. Internal Structure



| NO | Name             | Material      | Percentage |
|----|------------------|---------------|------------|
| 1  | Disc             | Metal oxide   | 55.0%      |
| 2  | Solder           | Tin           | 3.0%       |
| 3  | Lead             | Copper wire   | 15.0%      |
| 4  | Coating Material | Resin         | 27%        |
| 5  | Marking          | Laser marking | /          |

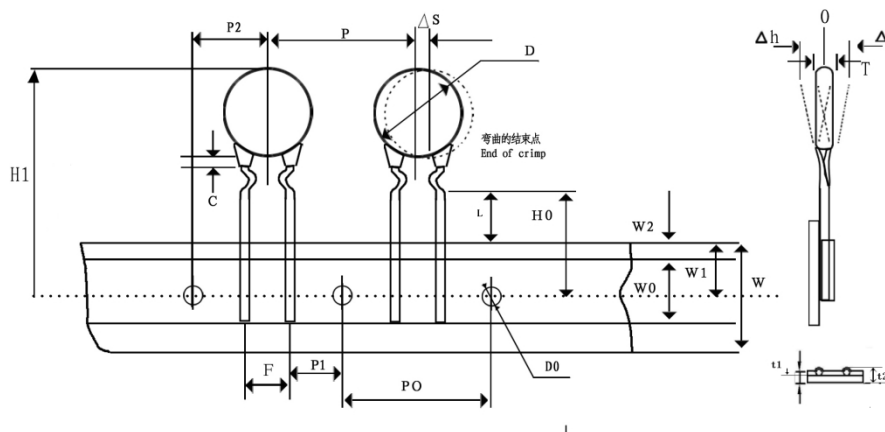
## 9. Marking (Example)

|                                                                                     |                          |                                                                                       |                                                                                       |                                                                                       |  |
|-------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--|
|   | ① Registered Trademark   |    |                                                                                       |                                                                                       |  |
|                                                                                     | ② 10                     | Zero power resistance at 25℃                                                          |                                                                                       |                                                                                       |  |
|                                                                                     | ③ D                      | Finished component shape (round)                                                      |                                                                                       |                                                                                       |  |
|                                                                                     | ④ 11                     | Disc diameter (mm)                                                                    |                                                                                       |                                                                                       |  |
|                                                                                     | ⑤ M                      | Zero power resistance tolerance ± 20%                                                 |                                                                                       |                                                                                       |  |
|                                                                                     | ⑥ Safety Approval Symbol | CQC certification                                                                     |  |                                                                                       |  |
| UL certification                                                                    |                          |  |                                                                                       |                                                                                       |  |
| VDE certification                                                                   |                          |  |                                                                                       |                                                                                       |  |
| Example 1                                                                           |                          | Example 2                                                                             |                                                                                       | Example 3                                                                             |  |
|  |                          |    |                                                                                       |  |  |

## 10. Taping And Dimensions

### Taping 1

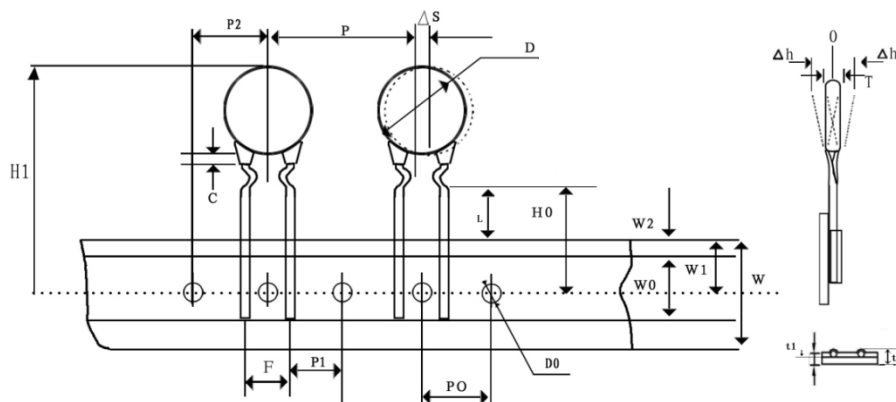
Inside kink lead F=5.0



| Code      | Po         | P    | P1   | P2   | F       | ΔS   | Δh   | W         | Wo   |
|-----------|------------|------|------|------|---------|------|------|-----------|------|
| Size(mm)  | 12.7       | 12.7 | 3.85 | 6.35 | 7.5     | 0    | 0    | 18.0      | 10.5 |
| Tolerance | ±0.3       | ±1.0 | ±0.7 | ±1.3 | ±0.8    | ±2.0 | ±2.0 | +1.5/-1.0 | Max  |
| Code      | W1         | W2   | H1   | Do   | H0      | L    | t1   | t2        | c    |
| Size(mm)  | 9.0        | 3.0  | 45.0 | 4.0  | 17.0    | 9.0  | 0.5  | 1.7       | /    |
| Tolerance | +0.75/-0.5 | Max  | Max  | ±0.2 | +1.5/-1 | Max  | ±0.2 | Max       | /    |

### Taping 2

Inside kink lead F=7.5



| Code      | Po         | P    | P1   | P2   | F       | ΔS   | Δh   | W         | Wo   |
|-----------|------------|------|------|------|---------|------|------|-----------|------|
| Size(mm)  | 12.7       | 25.4 | 8.95 | 12.7 | 7.5     | 0    | 0    | 18.0      | 10.5 |
| Tolerance | ±0.3       | ±1.0 | ±0.7 | ±1.3 | ±0.8    | ±2.0 | ±2.0 | +1.5/-1.0 | Max  |
| Code      | W1         | W2   | H1   | Do   | H0      | L    | t1   | t2        | c    |
| Size(mm)  | 9.0        | 3.0  | 45.0 | 4.0  | 17.0    | 9.0  | 0.5  | 1.7       | /    |
| Tolerance | +0.75/-0.5 | Max  | Max  | ±0.2 | +1.5/-1 | Max  | ±0.2 | Max       | /    |

## 11. Safety Certificate

| Approval      |                                                                                            | Organization | Safety Standards                     | Certificate No. |
|---------------|--------------------------------------------------------------------------------------------|--------------|--------------------------------------|-----------------|
| China         |           | CQC          | GB/T 6663.1-2007                     | CQC19001213204  |
| USA<br>Canada |           | UL           | UL 1434                              | E474052         |
| Germany       |  REG F702 | VDE          | EN60539-1:2017-01<br>EN60539-1: 2016 | 40050168        |

## 12. Reliability

| Item                              | Testing Conditions                                                       |                             | Requirements                                                  | Standard          |
|-----------------------------------|--------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------------|-------------------|
| Robustness of Terminals (Tensile) | Gradually apply the specified force and keep the unit fixed for 10±1sec. |                             | No visible damage.<br>△R <sub>25</sub> /R <sub>25</sub> ≤±25% | IEC<br>60068-2-21 |
|                                   | Terminal diameter (mm)                                                   | Force (N)                   |                                                               |                   |
|                                   | 0.5<d≤0.8                                                                | 10±10%                      |                                                               |                   |
| Robustness of Terminals (Bending) | Apply a specified weight to one lead of the sample, bent ±90°, 2 times.  |                             |                                                               |                   |
|                                   | Terminal diameter (mm)                                                   | Bending Test Apply force(N) |                                                               |                   |
|                                   | 0.5<D≤0.8                                                                | 5±10%                       |                                                               |                   |
| Solderability                     | 245±3℃, 3±0.3s.<br>Solder composition:<br>Sn96.5Ag3.0Cu0.5               |                             | No visible damage.                                            | IEC<br>60068-2-20 |
| Resistance to Soldering Heat      | 260±5℃, 10±1sec.                                                         |                             | No visible damage.<br>△R <sub>25</sub> /R <sub>25</sub> ≤±25% | IEC<br>60068-2-20 |
| High Temperature Storage          | T <sub>U</sub> ±2℃, 1000hrs.                                             |                             | No visible damage.<br>△R <sub>25</sub> /R <sub>25</sub> ≤±25% | IEC<br>60068-2-2  |
| Cold Test                         | T <sub>L</sub> ±2℃, 1000hrs.                                             |                             | No visible damage.<br>△R <sub>25</sub> /R <sub>25</sub> ≤±25% | IEC<br>60068-2-1  |

| Item                                                           | Testing Conditions                                                                                                                                                                    | Requirements                                               | Standard                                                   |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| Rapid Change of Temperature                                    | The conditions shown below shall be repeated 5 cycles.                                                                                                                                |                                                            | No visible damage.<br>$\Delta R_{25}/R_{25} \leq \pm 25\%$ |
|                                                                | Step                                                                                                                                                                                  | Temperature                                                | Period                                                     |
|                                                                | 1                                                                                                                                                                                     | $T_L \pm 5^\circ\text{C}$                                  | 30min                                                      |
|                                                                | 2                                                                                                                                                                                     | Room temperature                                           | 3min                                                       |
|                                                                | 3                                                                                                                                                                                     | $T_U \pm 5^\circ\text{C}$                                  | 30min                                                      |
|                                                                | 4                                                                                                                                                                                     | Room temperature                                           | 3min                                                       |
| Damp Heat Steady State                                         | $40 \pm 2^\circ\text{C}$ , 90~95% RH, $1000 \pm 24$ hrs.                                                                                                                              | No visible damage.<br>$\Delta R_{25}/R_{25} \leq \pm 25\%$ | IEC<br>60068-2-78                                          |
| Durability at Upper Category Temperature                       | $T_U$ , $1000 \pm 24$ hrs.                                                                                                                                                            | No visible damage.<br>$\Delta R_{25}/R_{25} \leq \pm 25\%$ | GB/T<br>6663.1-2007                                        |
| Endurance                                                      | $15^\circ\text{C} \sim 35^\circ\text{C}$ , $I_{\text{max}}$ , Cth,<br>1min ON / 5 mins OFF x 1000 cycles<br>Cth= Capacitance at 240 Vac<br>Testing Current: Details see page No. 7-8. | No visible damage.<br>$\Delta R_{25}/R_{25} \leq \pm 25\%$ | GB/T<br>6663.1-2007                                        |
| Durability Test with Continuous Application of Maximum Current | $15^\circ\text{C} \sim 35^\circ\text{C}$ ; $1000 \pm 24$ hrs/<br>Details see page No. 7-8.                                                                                            | No visible damage.<br>$\Delta R_{25}/R_{25} \leq \pm 25\%$ | GB/T<br>6663.1-2007                                        |

## 13. Electrical Testing

| Item                                | Testing Conditions                                                                                                                                                                                              | Requirements              |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Standard Test Condition             | 15~35℃, 25%~75%RH, 86kPa~106kPa.                                                                                                                                                                                | /                         |
| Zero Power Resistance at 25℃        | 25℃±0.02℃, 1.5VDC.                                                                                                                                                                                              | ±20%                      |
| Heat Dissipation Coefficient (mW/℃) | At a specific ambient temperature, the heat dissipation coefficient (δ) is the ratio of the thermistor electrical power consumption (ΔP) to the body temperature change (ΔT).                                   | Meet the specified value. |
| Thermal Time Constant (S)           | Thermal time constant (τ). The time required for the temperature of the thermistor to drop to a difference of 63.2% between its initial temperature and the final temperature under zero power conditions.      | Meet the specified value. |
| Nominal B-Constant (K)              | Zero Power Resistance Value at T1(K)<br>Zero Power Resistance Value at T2(K)<br>Two Specified Temperature(K)<br>T1=298.15K(25℃)<br>T2=358.15K(85℃)<br>$B = \frac{T_1 T_2}{T_2 - T_1} \ln \frac{R_{T1}}{R_{T2}}$ | Meet the specified value. |
| Maximum Steady Current (A)          | The maximum current (DC or sine wave rms) that can be applied continuously to the thermistor at an ambient temperature of 25℃.                                                                                  | Meet the specified value. |

## 14. Storage Conditions

14.1 Temperature: ≤35℃

14.2 Humidity: ≤70%RH

14.3 Period: ≤12 Months

14.4 Storage Place: Do not expose under the condition below:

14.4.1 Corrosive or easily oxidized gas

14.4.2 Flammable gas

14.4.3 Oil, water and chemical solvents

14.4.4 Under sunlight

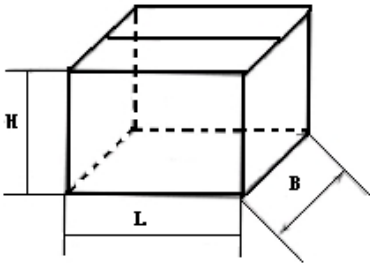
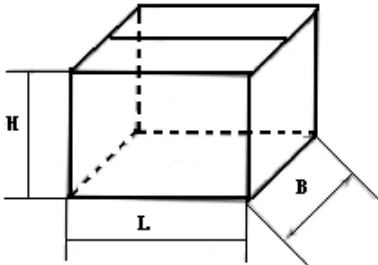
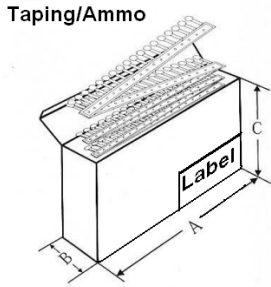
14.5 Try to ensure that the opening is minimized. Immediately re-sealed and stored in a sealed container with desiccant .

## 15. Environmental Compliance:

RoHS Compliance

REACH Compliance

## 16. Packaging

| External Packaging (Bulk)                                                           | Internal Packaging (Bulk)                                                             |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|    |    |
| External Packaging (Taping)                                                         | Internal Packaging (Taping)                                                           |
|  |  |

### Dimension Description (cm)

| External Packaging (Bulk)   |      |      | Internal Packaging (Bulk)   |      |      |
|-----------------------------|------|------|-----------------------------|------|------|
| L                           | B    | H    | L                           | B    | H    |
| 41.0                        | 29.0 | 16.0 | 18.6                        | 27.3 | 12.6 |
| External Packaging (Taping) |      |      | Internal Packaging (Taping) |      |      |
| L                           | B    | H    | B                           | A    | C    |
| 54.0                        | 36.0 | 26.3 | 4.4                         | 33.5 | 26.2 |

SPQ Reference Table

| Type   | Specification                   | SPQ Quantity |
|--------|---------------------------------|--------------|
| Bulk   | □D-5、□D-7、□D-9                  | 1000         |
|        | □D-5、□D-7、□D-9 (P=5.0)          | 1000         |
|        | □D-9 (P=7.5) 、□D-11(Short lead) | 1000         |
|        | □D-9 (P=7.5) 、□D-11(Long Lead)  | 500          |
|        | □D-13、 □D-15(Long Lead)         | 250          |
|        | □D-13、□D-15(Short lead)         | 500          |
|        | □D-20                           | 250          |
|        | □D-25(Long Lead)                | 125          |
|        | □D-25(Short lead)               | 250          |
| Taping | P=5                             | 1000         |
|        | P=7.5/ P=10                     | 500          |

Note: The above is for reference only, the actual packing number of braided tape shall prevail.