



深圳市咸阳华星机电有限公司

SHENZHEN XIANYANG HUAXING MACHINERG & ELECTRONIC.CO;LTD

# 承认书

(APPROVE SHEET)

客 户(Customer): \_\_\_\_\_

品 名(Description): MF 金属膜电阻器

规格(Specification): \_\_\_\_\_

客户料号(Cus. P/N): \_\_\_\_\_

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# MF/RJ 金属膜电阻器

## MF/RJ METAL FILM RESISTORS

### 1. 一般事项 General

#### 1.1 适用 Scope

本承认书适用于 [金属皮膜固定电阻器], 符合环境关联物质要求之 RoHS 测试。

This specification is available for **Metal** Film Fixed Resistor, it accords with RoHS test of Environment related substance requirement.

#### 1.2 形名(例) Type designation (example)

依使用种类、额定电力、公称电阻值、容许误差及型状而区别,其构造如下。

The type designation shall be in the following form and as specified.

|                |   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
|----------------|---|--------------------------------------|------------------------------------|------------|-------|------|-----|----|-----|----|-----|----|-----|---|-------------|-------------|---|---|------|---|------|---|------|---|------------|------------|--------------|----------------|----------------|----------------|
| MF             | 2 W   | 100K                                 | ± 1%                               | T62        |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| 种类<br>Type     | 额定电力<br>Rated power   | 公称电阻值<br>Nominal resistance<br>value | 电阻值容许误差<br>Resistance<br>tolerance | 形状<br>Form |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
|                | <table border="1"> <tr> <td>标准<br/>Normal</td> <td>小型<br/>Small</td> </tr> <tr> <td>1/4W</td> <td>1/2WS</td> </tr> <tr> <td>1/2W</td> <td>1WS</td> </tr> <tr> <td>1W</td> <td>2WS</td> </tr> <tr> <td>2W</td> <td>3WS</td> </tr> <tr> <td>3W</td> <td>5WS</td> </tr> </table> | 标准<br>Normal                         | 小型<br>Small                        | 1/4W       | 1/2WS | 1/2W | 1WS | 1W | 2WS | 2W | 3WS | 3W | 5WS | <table border="1"> <tr> <td>E-24 Series</td> </tr> <tr> <td>E-96 Series</td> </tr> </table> | E-24 Series | E-96 Series | <table border="1"> <tr> <td>J</td> <td>± 5%</td> </tr> <tr> <td>G</td> <td>± 2%</td> </tr> <tr> <td>F</td> <td>± 1%</td> </tr> </table> | J | ± 5% | G | ± 2% | F | ± 1% | <table border="1"> <tr> <td>P 型 P Type</td> </tr> <tr> <td>M 型 M Type</td> </tr> <tr> <td>MB 型 MB Type</td> </tr> <tr> <td>FK1 型 FK1 Type</td> </tr> <tr> <td>FK2 型 FK2 Type</td> </tr> <tr> <td>FKK 型 FKK Type</td> </tr> </table> | P 型 P Type | M 型 M Type | MB 型 MB Type | FK1 型 FK1 Type | FK2 型 FK2 Type | FKK 型 FKK Type |
| 标准<br>Normal   | 小型<br>Small   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| 1/4W           | 1/2WS   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| 1/2W           | 1WS   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| 1W             | 2WS   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| 2W             | 3WS   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| 3W             | 5WS   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| E-24 Series    |   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| E-96 Series    |   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| J              | ± 5%  |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| G              | ± 2%  |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| F              | ± 1%  |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| P 型 P Type     |   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| M 型 M Type     |   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| MB 型 MB Type   |   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| FK1 型 FK1 Type |   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| FK2 型 FK2 Type |   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |
| FKK 型 FKK Type |   |                                      |                                    |            |       |      |     |    |     |    |     |    |     |   |             |             |   |   |      |   |      |   |      |   |            |            |              |                |                |                |

#### 1.3 额定电力 Rated power

额定电力系应在周围温度 70°C 可以连续负载的最大电力, 如表-1; 但周围温度如超过 70°C 时之额定电力则依图一的电力递减曲线实施。

Rated power is maximum power which can be continuously loaded at specified ambient temperature 70°C, as Table-1; however when the ambient temperature exceeds 70°C, rated power should be determined from the derating curve of Fig.1.



#### 1.4 使用环境温度: -55°C ~ +125°C Operating ambient temperature -55°C ~ +125°C



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- 1.5 功率因数计算公式:  $E = \sqrt{(P \times R)}$  Where E: 额定电压 Rated voltage(V)  
P: 定格电力 Rated power(W)  
R: 公称电阻值 Nominal resistance( $\Omega$ )

| 种类<br>Type  | 定格电力<br>Rated power | 最高使用电压<br>Maximum working<br>voltage | 最高过负荷电压<br>Maximum overload<br>voltage |
|-------------|---------------------|--------------------------------------|--|
| Normal size | MF1/8W              | 0.125W                               | 150V                                   |
|             | MF1/4W              | 0.25W                                | 250V                                   |
|             | MF1/2W              | 0.5W                                 | 300V                                   |
|             | MF1W                | 1W                                   | 350V                                   |
|             | MF2W                | 2W                                   | 500V                                   |
|             | MF3W                | 3W                                   | 500V                                   |
|             | MF5W                | 5W                                   | 500V                                   |

## 2. 构造 Construction

### 2.1 外形尺寸 External dimensions

参照本承认书的 [5. 外形尺寸]。

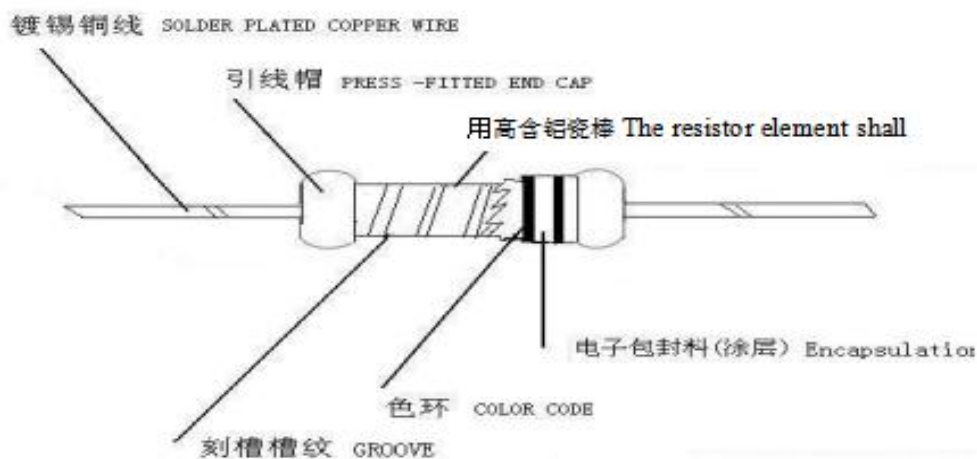
The dimensions shall be satisfied with [5. External dimensions].

### 2.2 构造图 Structure diagram

MF 系列之金属皮膜固定电阻器系按下表的材料而构成:

The construction of resistor (MF series) shall be as follows:

### 2.3 外观颜色 Resistor body color: 蓝色(Blue)





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### 3. 参数特性 Characteristics

表-3 Table-3

| 项目<br>Item                                   | 规格值<br>Performance   | 试验方法(依据 JIS C 5202)<br>Test methods(Conform to JIS C 5202)  |
|--|--|---|
| 温度系数<br>Temperature<br>Coefficient           | ±200PPM/°C 以内。<br>Within ±200PPM/°C .  | 5.2 项参照 Comply with 5.2<br>$\frac{R_1 - R_0}{R_0(T_1 - T_0)} \times 10^6 (\text{PPM}/^\circ\text{C})$<br>R <sub>0</sub> :室温(T <sub>0</sub> )所测量之电阻值。<br>R <sub>1</sub> :室温+100°C(T <sub>1</sub> )后所测量之电阻值。<br>R <sub>0</sub> :Resistance value at room temp.( T <sub>0</sub> ).<br>R <sub>1</sub> :Resistance value at room temp.plus 100°C (T <sub>1</sub> ) |
| 短时间过负荷<br>Short time<br>overload             | ±(1%+0.05 Ω)以内。<br>不得有机械的损伤。<br>Within ±(1%+0.05 Ω).<br>No evidence of mechanical damage.                  | 5.5 项参照 Comply with 5.5<br>额定电压×2.5 倍,5 秒。<br>不可超过最高过负荷电压(见表-1)<br>Rated voltage×2.5 times,5s<br>But not to exceed maximum overload<br>voltage.(See table-1)  |
| 绝缘电阻<br>Insulation<br>Resistance             | 10 <sup>4</sup> MΩ 以上。<br>10 <sup>4</sup> MΩ or more.  | 5.6 项参照 Comply with 5.6<br>置于 V 型槽方法。<br>施加直流电压 500V 60 秒。<br>V-block method<br>Resistor shall be tested at DC 500V for 60<br>seconds.  |
| 耐电压<br>Dielectric<br>Withstanding<br>Voltage | 无电弧放电、烧损及绝<br>缘破坏等异状。<br>No evidence of flashover mechanical<br>damage, arcing<br>or insulation breakdown. | 5.7 项参照 Comply with 5.7<br>常压,置于 V 型槽方法。<br>施加个别规定之交流电压 60 秒。(见表-1)<br>Constant pressure, V-block method<br>Resistor shall be tested at AC potential<br>respectively for 60 seconds. (See table-1)  |
| 断续过负荷<br>Pulse overload                      | ±(2%+0.05 Ω)以内。<br>Within ±(2%+0.05 Ω)   | 5.8 项参照 Comply with 5.8<br>额定电压×4 倍,10000 回(1 秒 ON,25 秒<br>OFF)。<br>不可超过最高断续电压(见表-1)<br>Rated voltage X 4 times, 10000 cyc.(1s<br>ON, 25s OFF)<br>But not to exceed maximum pulse<br>voltage. (See table-1)   |



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| 项目<br>Item                            | 规格值<br>Performance  | 试验方法(依据 JIS C 5202)<br>Test methods(Conform to JIS C 5202)  |                   |                                |                |
|---------------------------------------|---|---|-------------------|--------------------------------|----------------|
| 端子强度<br>Terminal strength             | 端子不得断裂及松弛。<br>No evidence of mechanical damage.   | 6.1 项参照 Comply with 6.1   |                   |                                |                |
|                                       |   | 引张强度<br>Tensile strength  | 线径 mm<br>Diameter | 引张力<br>Tensile force<br>N(kgf) | 时 间<br>Time    |
|                                       |   |   | Φ0.38mm~0.50mm    | 5(0.51)                        | 10±1<br>second |
| Φ0.50mm~0.80mm                        | 10(1.02)  |   |                   |                                |                |
|                                       |   | 扭转强度：自电阻体起约 6mm~6.5mm 处之端子线,以约 0.75mm 曲率半径弯曲 90 度,其次由弯曲处向端子线先端 1.2±0.4mm 处挟定端子引出轴,作回转轴,以约 5 秒时间沿直面回转 360° 再逆转 360°,如此施行回逆转 2 次,不可发生折断及松动现象。<br>Tensional strength: To bend the lead wire at the point of about 6mm~6.5mm from resistor body. about 0.75mm curvature radii to 90° then catch the wire at 1.2±0.4mm apart from the bend point end and turn it ( clockwise ) by 360 degrees perpendicular to the resistor axis at speed of same 5 seconds per turn, and do the same counterclockwise again which constitute a whole turn. Repeat the turn for 2 times without causing any break and looseness. |                   |                                |                |
| 焊锡耐热性<br>Resistance to soldering heat | ±(1%+0.05 Ω)以内。<br>不得有机械的损伤。<br>Within ±(1 %+0.05 Ω)<br>No evidence of mechanical damage. | 6.4 项参照 Comply with 6.4<br>350±10℃, 3±1.0 秒, 试验后放置半小时。<br>350±10℃, 3±1.0s<br>After test leave for 0.5h.   |                   |                                |                |
| 焊锡附着性<br>Solderability                | 导线至少 95%以上新锡覆盖。<br>Covered with new solder by 95% at least.                               | 6.5 项参照 Comply with 6.5<br>焊锡温度: 255±5℃。<br>浸锡时间: 3±1.0 秒。<br>Test temperature of solder:255±5℃<br>Dipping time in solder:3±1.0 s   |                   |                                |                |
| 耐溶剂性<br>Resistance to solvent         | 涂装及色码不得脱落。<br>No deterioration of protective coating and markings.                        | 6.9 项参照 Comply with 6.9<br>放入酒精溶剂之超音波机内, 保持 3 分钟。<br>Specimens shall be immersed in a bath of isoproalcohol completely for 3 minutes with ultrasonic.   |                   |                                |                |



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| 项目<br>Item                         | 规格值<br>Performance   | 试验方法(依据 JIS C 5202)<br>Test methods(Conform to JIS C 5202)   |
|------------------------------------|--|--|
| 温度循环<br>Temperature<br>cycle       | $\pm(2\%+0.05\ \Omega)$ 以内。<br>不得有机械的损伤。<br>Within $\pm(2\%+0.05\ \Omega)$<br>No evidence of mechanical<br>damage. | 7.4 项参照 Comply with 7.4<br>低温侧: $-55^{\circ}\text{C}/30$ 分, 室温: 10~15 分钟<br>高温侧: $+80^{\circ}\text{C}/30$ 分, 室温: 10~15 分钟<br>5 回<br>Low side: $-55^{\circ}\text{C}/30\text{min}$ , Room temp.: 10 to 15min<br>High side: $80^{\circ}\text{C}/30\text{min}$ , Room temp.: 10 to 15min<br>5 cycles |
| 耐湿负荷寿命<br>Load life in<br>humidity | $\pm(5\%+0.05\ \Omega)$ 以内。<br>Within $\pm(5\%+0.05\ \Omega)$  | 7.9 项参照 Comply with 7.9<br>$40\pm 2^{\circ}\text{C}$ , 湿度 90~95%, 1000 小时<br>定格电压(90 分钟 ON, 30 分钟 OFF)<br>$40\pm 2^{\circ}\text{C}$ , 90 to 95%RH, 1000h<br>Rated voltage (90 min ON, 30 min OFF)  |
| 负荷寿命<br>Load life                  | $\pm(5\%+0.05\ \Omega)$ 以内。<br>Within $\pm(5\%+0.05\ \Omega)$  | 7.10 项参照 Comply with 7.10<br>$70\pm 3^{\circ}\text{C}$ , 1000 小时<br>定格电压(90 分钟 ON, 30 分钟 OFF)<br>$70\pm 3^{\circ}\text{C}$ , 1000h<br>Rated voltage (90 min ON, 30 min OFF)  |



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### MF/RJ METAL FILM RESISTORS

#### 4. 表示 Indication

色码 Color Code



| 颜色 Color | 第 1 数字<br>1 <sup>st</sup> figure | 第 2 数字<br>2 <sup>nd</sup> figure | 第 3 数字<br>3 <sup>RD</sup> figure | 倍 率<br>Multiplier | 误差率<br>Tolerance |
|----------|----------------------------------|----------------------------------|----------------------------------|-------------------|------------------|
| 黑 Black  | 0                                | 0                                | 0                                | $10^0$            |                  |
| 棕 Brown  | 1                                | 1                                | 1                                | $10^1$            | ±1% (F)          |
| 红 Red    | 2                                | 2                                | 2                                | $10^2$            | ±2% (G)          |
| 橙 Orange | 3                                | 3                                | 3                                | $10^3$            |                  |
| 黄 Yellow | 4                                | 4                                | 4                                | $10^4$            |                  |
| 绿 Green  | 5                                | 5                                | 5                                | $10^5$            | ±0.5% (D)        |
| 蓝 Blue   | 6                                | 6                                | 6                                | $10^6$            | ±0.25% (C)       |
| 紫 Violet | 7                                | 7                                | 7                                | $10^7$            | ±0.1% (B)        |
| 灰 Gray   | 8                                | 8                                | 8                                |                   | ±0.05% (A)       |
| 白 White  | 9                                | 9                                | 9                                |                   |                  |
| 金 Gold   |                                  |                                  |                                  | $10^{-1}$         | ±5% (J)          |
| 银 Silver |                                  |                                  |                                  | $10^{-2}$         | ±10% (K)         |
| 无 Plain  |                                  |                                  |                                  |                   | ±20% (M)         |



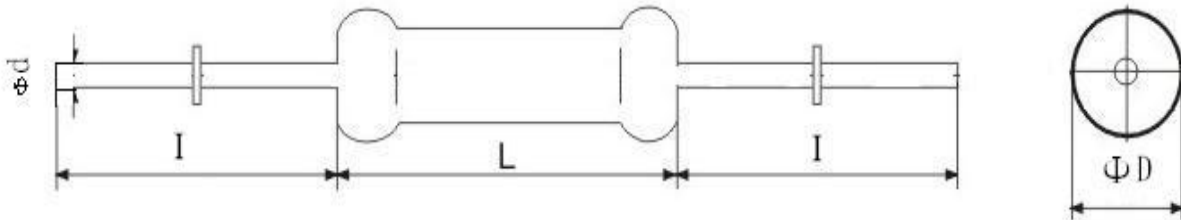
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#### 5. 外形寸法 External dimensions

##### 5.1 散装P型 P type

P Type



| 种类 Type            |                   | 尺寸 Dimensions |             |               |                  |             |
|--------------------|-------------------|---------------|-------------|---------------|------------------|-------------|
| 普通型<br>Normal Size | 小型化<br>Small Size | I             | $L \pm 1.0$ | $\psi D$      | $\psi d \pm 0.1$ | $I \pm 2.0$ |
| MF1/8W、1/6W        | MF1/4WS           | 60            | 3.2         | $1.8 \pm 0.5$ | 0.40             | 28          |
| MF1/4W             | MF1/2WS           | 60            | 6.5         | $2.3 \pm 0.5$ | 0.40             | 28          |
| MF1/2W             | MF1WS             | 60            | 9.0         | $3.2 \pm 0.5$ | 0.50             | 28          |
| MF1W               | MF2WS             | 60            | 11.5        | $4.5 \pm 1.0$ | 0.60             | 25          |
|                    |                   | 73            | 11.5        | $4.5 \pm 1.0$ | 0.60             | 31          |
| MF2W               | MF3WS             | 70            | 15.5        | $5.0 \pm 1.0$ | 0.70             | 25          |
|                    |                   | 81            | 15.5        | $5.0 \pm 1.0$ | 0.70             | 33          |
|                    |                   | 94            | 15.5        | $5.0 \pm 1.0$ | 0.70             | 40          |
| MF3W               | MF5WS             | 94            | 17.5        | $6.0 \pm 1.0$ | 0.70             | 38          |
| MF5W               |                   | 94            | 24.5        | $8.0 \pm 1.0$ | 0.70             | 35          |





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### 5.2 带装 Axial Lead Taping

Txx Type



单位：mm  
Unit：mm

| 种类 Type         |                | 带状 Taping | 尺寸 Dimensions |                                |        |            |       |        |        |        |        |        |
|-----------------|----------------|-----------|---------------|--------------------------------|--------|------------|-------|--------|--------|--------|--------|--------|
| 普通型 Normal Size | 小型化 Small Size |           | L             | W                              | P      | L1-L2 Max. | T     | Z Max. | R Max. | t Max. | e Max. | S Max. |
| 1/6W            |                | T52       | 3.2±0.5       | 52±1.0                         | 5±0.5  | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
| 1/4W            | 1/2WS          | T26       | 6.5±0.5       | 26 <sup>+1</sup> <sub>-0</sub> | 5±0.5  | 0.5        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
|                 |                | T52       | 6.5±0.5       | 52±1.0                         | 5±0.5  | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
| 1/2W            | 1WS            | T52       | 9.0±1.0       | 52±1.0                         | 5±0.5  | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
| 1W              | 2WS            | T52       | 11.5±1.0      | 52±1.0                         | 5±0.5  | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
|                 |                | T67       | 11.5±1.0      | 67±1.0                         | 5±0.5  | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
| 2W              | 3WS            | T52       | 15.5±1.0      | 52±1.0                         | 10±0.5 | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
|                 |                | T73       | 15.5±1.0      | 73±1.0                         | 10±0.5 | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
|                 |                | T84       | 15.5±1.0      | 84±1.0                         | 10±0.5 | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
| 3W              | 5WS            | T84       | 17.5±1.5      | 84±1.0                         | 10±0.5 | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |
| 5W              |                | T84       | 24.5±1.5      | 84±1.0                         | 10±0.5 | 1.0        | 6±0.5 | 1.2    | 0      | 3.0    | 0.6    | 0.5    |

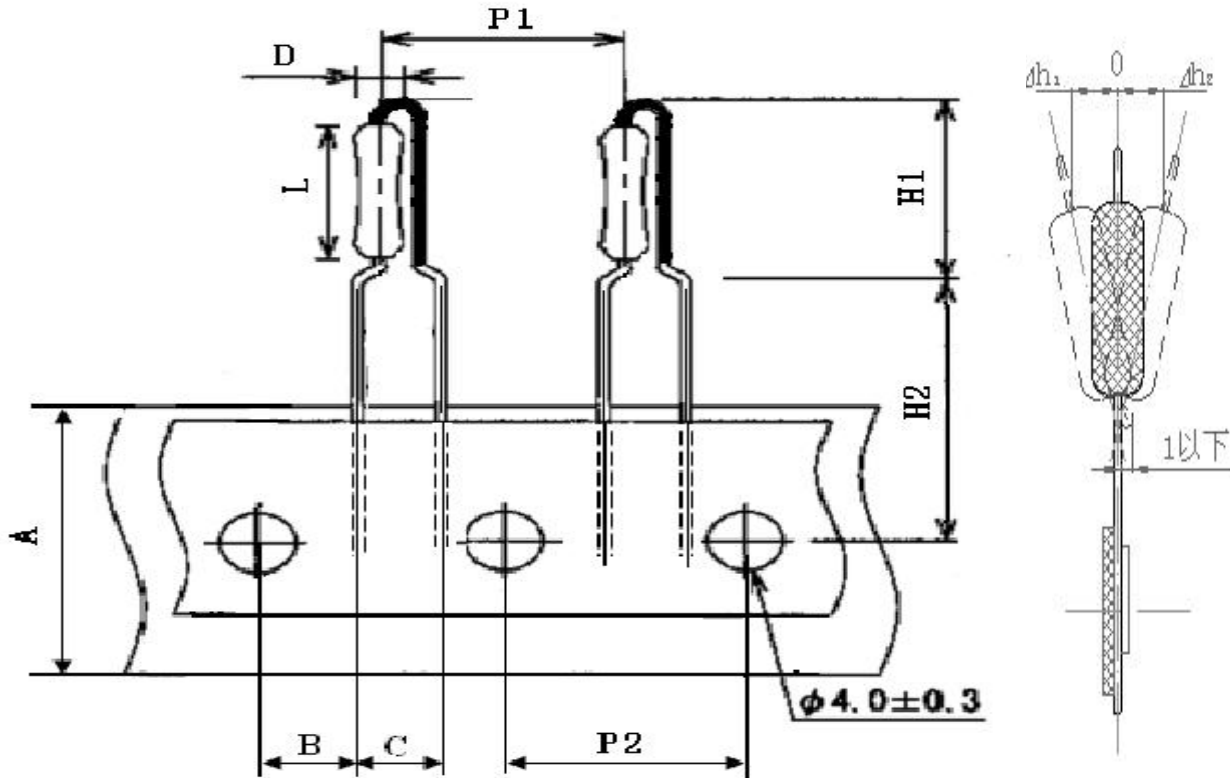


## MF/RJ 金属膜电阻器

### MF/RJ METAL FILM RESISTORS

#### 5.3 FAT 立式编带形状适用于 (1/2W、1WS、1W、2W、3W 功率电阻)

**注：引线涂脚漆的客户下单需备注说明，否则默认为不涂装脚漆。**



| 规格   | 尺寸 (mm)              |                |               |                |                |                 |                      |
|------|----------------------|----------------|---------------|----------------|----------------|-----------------|----------------------|
|      | A                    | B              | C             | P1             | P2             | H1              | H2                   |
| 1/2W | $18.0^{+1.0}_{-0.5}$ | $3.85 \pm 0.5$ | $5.0 \pm 0.5$ | $12.7 \pm 0.5$ | $12.7 \pm 0.3$ | $16.0 \pm 1.5$  | $16.0^{+1.0}_{-0.5}$ |
| 1WS  | $18.0^{+1.0}_{-0.5}$ | $3.85 \pm 0.5$ | $5.0 \pm 0.5$ | $12.7 \pm 0.5$ | $12.7 \pm 0.3$ | $16.0 \pm 1.5$  | $16.0^{+1.0}_{-0.5}$ |
| 1W   | $18.0^{+1.0}_{-0.5}$ | $3.85 \pm 0.5$ | $5.0 \pm 0.5$ | $12.7 \pm 0.5$ | $12.7 \pm 0.3$ | $16.0 \pm 1.5$  | $16.0^{+1.0}_{-0.5}$ |
| 2WS  | $18.0^{+1.0}_{-0.5}$ | $3.85 \pm 0.5$ | $5.0 \pm 0.5$ | $12.7 \pm 0.5$ | $12.7 \pm 0.3$ | $16.0 \pm 1.5$  | $16.0^{+1.0}_{-0.5}$ |
| 2W   | $18.0^{+1.0}_{-0.5}$ | $3.85 \pm 0.5$ | $5.0 \pm 0.5$ | $12.7 \pm 0.5$ | $12.7 \pm 0.5$ | $21.5^0_{-2.0}$ | $16.0^{+1.0}_{-0.5}$ |
| 3WS  | $18.0^{+1.0}_{-0.5}$ | $3.85 \pm 0.5$ | $5.0 \pm 0.5$ | $12.7 \pm 0.5$ | $12.7 \pm 0.5$ | $21.5^0_{-2.0}$ | $16.0^{+1.0}_{-0.5}$ |

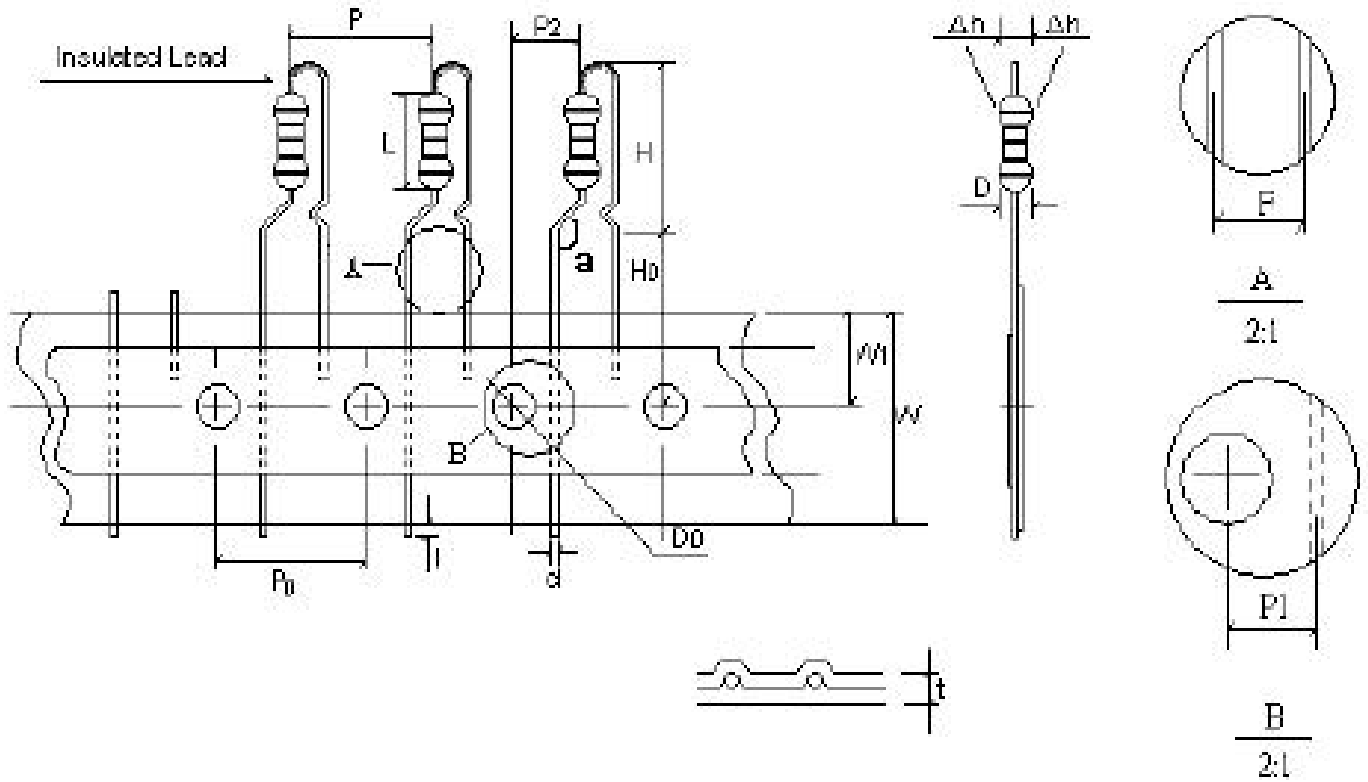


# MF/RJ 金属膜电阻器

## MF/RJ METAL FILM RESISTORS

### 5.4 FK2 内弯型, (1/2W、1WS、1W、2WS、3W 功率电阻)

注: 引线需涂脚漆的下单需备注说明, 否则默认为不涂装脚漆。



| 规格   | 尺寸 (mm)                              |         |         |          |          |          |                                   |                                      |
|------|--------------------------------------|---------|---------|----------|----------|----------|-----------------------------------|--------------------------------------|
|      | W                                    | D0      | F       | P        | P0       | P1       | H                                 | H0                                   |
| 1/2W | 18.0 <sup>+1.0</sup> <sub>-0.5</sub> | 4.0±0.3 | 5.0±0.5 | 12.7±0.5 | 12.7±0.3 | 3.85±0.7 | 16.0±1.5                          | 16.0 <sup>+1.0</sup> <sub>-0.5</sub> |
| 1WS  | 18.0 <sup>+1.0</sup> <sub>-0.5</sub> | 4.0±0.3 | 5.0±0.5 | 12.7±0.5 | 12.7±0.3 | 3.85±0.7 | 16.0±1.5                          | 16.0 <sup>+1.0</sup> <sub>-0.5</sub> |
| 1W   | 18.0 <sup>+1.0</sup> <sub>-0.5</sub> | 4.0±0.3 | 5.0±0.5 | 12.7±0.5 | 12.7±0.3 | 3.85±0.7 | 16.0±1.5                          | 16.0 <sup>+1.0</sup> <sub>-0.5</sub> |
| 2WS  | 18.0 <sup>+1.0</sup> <sub>-0.5</sub> | 4.0±0.3 | 5.0±0.5 | 12.7±0.5 | 12.7±0.3 | 3.85±0.7 | 16.0±1.5                          | 16.0 <sup>+1.0</sup> <sub>-0.5</sub> |
| 2W   | 18.0 <sup>+1.0</sup> <sub>-0.5</sub> | 4.0±0.3 | 5.0±0.5 | 12.7±0.5 | 12.7±0.5 | 3.85±0.7 | 21.5 <sup>0</sup> <sub>-2.0</sub> | 16.0 <sup>+1.0</sup> <sub>-0.5</sub> |
| 3WS  | 18.0 <sup>+1.0</sup> <sub>-0.5</sub> | 4.0±0.3 | 5.0±0.5 | 12.7±0.5 | 12.7±0.5 | 3.85±0.7 | 21.5 <sup>0</sup> <sub>-2.0</sub> | 16.0 <sup>+1.0</sup> <sub>-0.5</sub> |



# MF/RJ 金属膜电阻器

## MF/RJ METAL FILM RESISTORS

5.5 MT 型卧式编带，适用余 2W、3W 功率

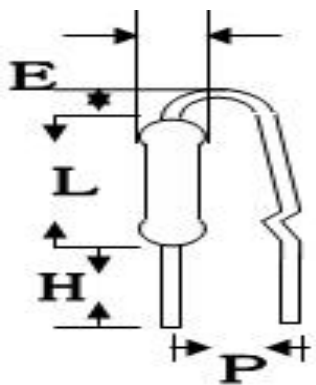


| 功率 | F        | W       | P1       | P2       | H    | H1      | AMax |
|----|----------|---------|----------|----------|------|---------|------|
| 2W | 5.0±1.0  | 6.5±1.0 | 25.4±1.0 | 25.4±1.0 | 18±1 | 8.0±1.5 | 21   |
| 3W | 10.0±1.0 | 7.5±1.0 | 30±1.0   | 30±0.5   | 17±1 | 8.0±1.5 | 21   |

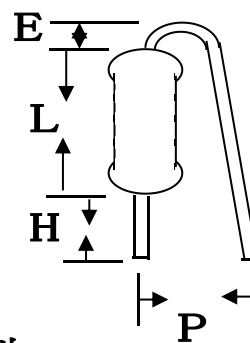


# MF/RJ 金属膜电阻器

## MF/RJ METAL FILM RESISTORS



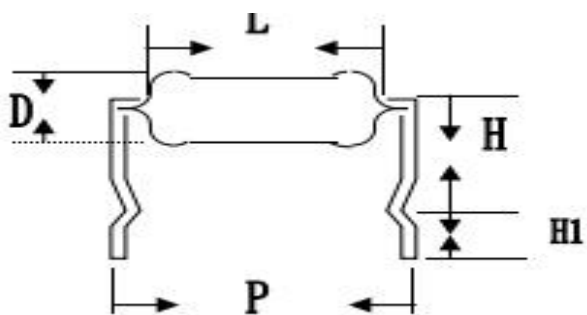
**FK2 型**



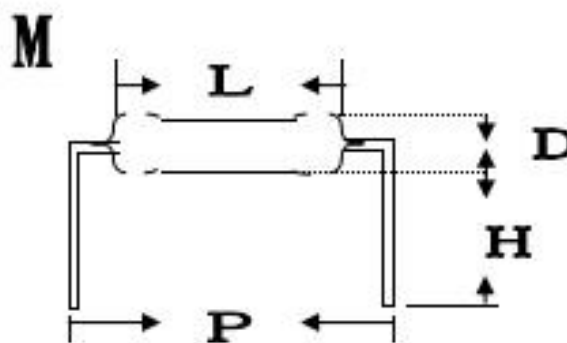
**F 型**

| 瓦特数<br>Watts | 尺寸 Dimensions (mm) |          |         |       |       |
|--------------|--------------------|----------|---------|-------|-------|
|              | ΦD                 | L        | P       | E Max | H Max |
| 1/2w,1ws     | 3.2±0.5            | 9.0±1.0  | 6.0±2.0 | 3.5   | 5.0   |
| 1w,2ws       | 4.5±1.0            | 11.5±1.0 | 9.0±2.0 | 3.5   | 5.0   |
| 2w,3ws       | 5.0±1.0            | 15.5±1.0 | 9.0±2.0 | 3.5   | 5.0   |
| 3w           | 6.0±1.0            | 17.5±1.0 | 9.0±2.0 | 3.5   | 5.0   |

| 瓦特数<br>Watts | 尺寸 Dimensions (mm) |          |         |       |       |
|--------------|--------------------|----------|---------|-------|-------|
|              | ΦD                 | L        | P       | E Max | H Max |
| 1/2w,1ws     | 3.2±0.5            | 9.0±1.0  | 6.0±2.0 | 3.5   | 5.0   |
| 1w,2ws       | 4.5±1.0            | 11.5±1.0 | 9.0±2.0 | 3.5   | 5.0   |
| 2w,3ws       | 5.0±1.0            | 15.5±1.0 | 9.0±2.0 | 3.5   | 5.0   |
| 3w           | 6.0±1.0            | 17.5±1.0 | 9.0±2.0 | 3.5   | 5.0   |



**MK 型**



**M 型**

| 瓦特数<br>Watts | 尺寸 Dimensions (mm) |          |          |       |         |
|--------------|--------------------|----------|----------|-------|---------|
|              | D                  | L        | P        | H MAX | H1      |
| 1/2w,1ws     | 3.2±0.5            | 9.0±1.0  | 12.5±1.5 | 10.0  | 4.0±0.5 |
| 1w,2ws       | 4.5±1.0            | 11.5±1.0 | 15±1.5   | 10.0  | 4.0±0.5 |
| 2w,3ws       | 5.0±1.0            | 15.5±1.5 | 20±2.0   | 10.0  | 4.0±0.5 |
| 3W5WS        | 6.0±1.0            | 17.5±1.5 | 25±2.0   | 10.0  | 4.0±0.5 |

| 瓦特数<br>Watts | 尺寸 Dimensions (mm) |          |          |       |         |
|--------------|--------------------|----------|----------|-------|---------|
|              | D                  | L        | P        | H MAX | H1      |
| 1/2w,1ws     | 3.2±0.5            | 9.0±1.0  | 12.5±1.5 | 10.0  | 4.0±0.5 |
| 1w,2ws       | 4.5±1.0            | 11.5±1.0 | 15±1.5   | 10.0  | 4.0±0.5 |
| 2w,3ws       | 5.0±1.0            | 15.5±1.5 | 20±2.0   | 10.0  | 4.0±0.5 |
| 3W5WS        | 6.0±1.0            | 17.5±1.5 | 25±2.0   | 10.0  | 4.0±0.5 |

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