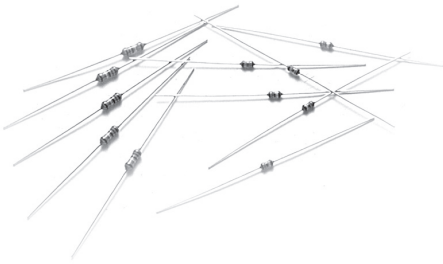


## Metal Film Resistors

# Professional Type

## Miniature Style [ MF0 Series ]



### INTRODUCTION

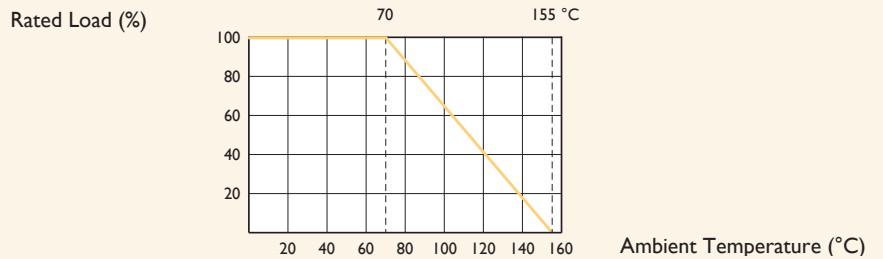
The MF0 Series Metal Film Professional Resistors are manufactured using a vacuum sputtering system to deposit multiple layers of mixed metal alloys and passivative materials onto a carefully treated high grade ceramic substrate. After a helical groove has been cut in the resistive layer; tinned connecting leads of electrolytic copper are welded to the end-caps. The resistors are coated with layers of blue color lacquer.

### FEATURES

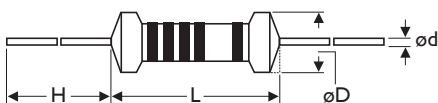
|                      |                       |
|----------------------|-----------------------|
| Power Rating         | 0.4W, 0.6W            |
| Resistance Tolerance | ±0.5%, ±1%, ±2%, ±5%  |
| T.C.R.               | ±50ppm/°C, ±100ppm/°C |

### DERATING CURVE

For resistors operated in ambient temperatures above 70°C, power rating must be derated in accordance with the curve below.



### DIMENSIONS



Unit: mm

| STYLE     | DIMENSION |         |        |           |
|-----------|-----------|---------|--------|-----------|
|           | L         | øD      | H      | ød        |
| Miniature |           |         |        |           |
| MF0204    | 3.4±0.3   | 1.9±0.2 | 28±2.0 | 0.45±0.05 |
| MF0207    | 6.3±0.5   | 2.4±0.2 | 28±2.0 | 0.55±0.05 |

Note:

## ELECTRICAL CHARACTERISTICS

| STYLE                       | MF0204                                    | MF0207 |
|-----------------------------|---|--------|
| Power Rating at 70°C        | 0.4W                                      | 0.6W   |
| Maximum Working Voltage     | 250V                                      | 350V   |
| Maximum Overload Voltage    | 500V                                      | 700V   |
| Voltage Proof on Insulation | 300V                                      | 500V   |
| Resistance Range            | 1Ω - 4M7Ω & 0Ω for E24 & E96 series value |        |
| Operating Temp. Range       | -55°C to +155°C                           |        |
| Temperature Coefficient     | ±50ppm/°C , ±100ppm/°C                    |        |

Note: Special value is available on request

## ENVIRONMENTAL CHARACTERISTICS

| PERFORMANCE TEST              | TEST METHOD   | APPRAISE                                  |
|-------------------------------|---|---|
| Short Time Overload           | IEC 60115-1 4.13 2.5 times RCWV for 5 sec. (Not more than maximum Overload Voltage)             | ±0.25%+0.05Ω                              |
| Voltage Proof on Insulation   | IEC 60115-1 4.7 In V-Block for 60 sec., test voltage as above table                             | No Breakdown                              |
| Temperature Coefficient       | IEC 60115-1 4.8 Between -55°C to +155°C   | By type                                   |
| Insulation Resistance         | IEC 60115-1 4.6 in V-block for 60 Sec.  | >10,000MΩ                                 |
| Solderability                 | IEC 60115-1 4.17 245±5°C for 3±0.5 Sec.   | 95% Min. coverage                         |
| Solvent Resistance of Marking | IEC 60115-1 4.30 IPA for 5±0.5 Min. with ultrasonic   | No deterioration of coatings and markings |
| Robustness of Terminations    | IEC 60115-1 4.16 Direct load for 10 Sec. in the direction of the terminal leads                 | ≥2.5kg (24.5N)                            |
| Periodic-pulse Overload       | IEC 60115-1 4.39 4 times RCWV 10,000 cycles (1 Sec. on, 25 Sec. off)                            | ±1.0%+0.05Ω                               |
| Damp Heat Steady State        | IEC 60115-1 4.24 40±2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV                      | ±1.5%+0.05Ω                               |
| Endurance at 70°C             | IEC 60115-1 4.25 70±2°C at RCWV (or Umax., Whichever less) for 1,000 Hr. (1.5Hr.on, 0.5Hr. Off) | ±1.5%+0.05Ω                               |
| Temperature Cycling           | IEC 60115-1 4.19 -55°C ⇌ Room Temp. ⇌ +155°C ⇌ Room Temp. (5 cycles)                            | ±0.75%+0.05Ω                              |
| Resistance to Soldering Heat  | IEC 60115-1 4.18 260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body               | ±0.25%+0.05Ω                              |

Note: RCWV(Rated Continuous Working Voltage) =  $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$  or Max. working voltage listed above, whichever less.

Revision: 2020

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