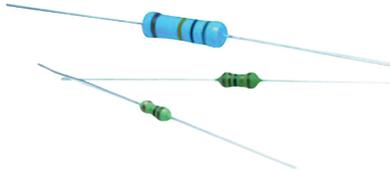


# Precision Metal Film Resistor

**RoHS  
Compliant**



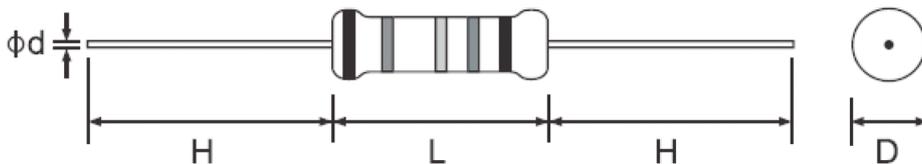
## Features:

- EIA standard colour coding
- Low noise and voltage coefficient
- Low temperature coefficient range
- Wide precision range in small package
- Too low or too high ohmic value can be supplied on case to case basis
- Nichrome resistor element provides stable performance in various environment
- Multiple epoxy coating on vacuum deposited metal film provides superior moisture protection

## Performance Specifications

|                                 |                                                                               |
|---------------------------------|-------------------------------------------------------------------------------|
| Temperature Coefficient         | : Within the maximum temperature coefficient specified                        |
| Short Time Overload             | : $\pm (0.5\% + 0.05\Omega)$ Maximum, with no evidence of mechanical damage   |
| Insulation Resistance           | : Minimum 10,000M $\Omega$                                                    |
| Dielectric Withstanding Voltage | : No evidence of flashover, mechanical damage, arcing or insulation breakdown |
| Pulse Overload                  | : $\pm (1.0\% + 0.05\Omega)$ Maximum, with no evidence of mechanical damage   |
| Terminal Strength               | : No evidence of mechanical damage                                            |
| Resistance to Soldering Heat    | : $\pm (1.0\% + 0.05\Omega)$ Maximum, with no evidence of mechanical damage   |
| Solderability                   | : Minimum 95% coverage                                                        |
| Resistance to Solvent           | : No deterioration of protective coating and markings                         |
| Temperature Cycling             | : $\pm (1\% + 0.05\Omega)$ Maximum, with no evidence of mechanical damage     |
| Humidity (Steady state)         | : $\pm (2\% + 0.05\Omega)$ Maximum, with no evidence of mechanical damage     |
| Load Life in Humidity           | : Normal type $\pm (1.5\% + 0.05\Omega)$ Maximum                              |
| Load Life                       | : Normal type $\pm (1.5\% + 0.05\Omega)$ Maximum                              |

## Dimensions



| Part Number        | Style  | Power Rating at 70°C | Dimension (mm) |        |              |           |    | Standard Packing Quantity |
|--------------------|--------|----------------------|----------------|--------|--------------|-----------|----|---------------------------|
|                    |        |                      | D Max.         | L Max. | d $\pm 0.05$ | H $\pm 3$ | PT |                           |
| <b>Normal Size</b> |        |                      |                |        |              |           |    |                           |
| MCMF0W8            | MF 12  | 1/8W (0.125W)        | 1.85           | 3.5    | 0.45         | 28        | 52 | 5,000                     |
| MCMF0W4            | MF 25  | 1/4W (0.25W)         | 2.5            | 6.8    | 0.54         | 28        | 52 | 5,000                     |
| MCMF0W2            | MF 50  | 1/2W (0.5W)          | 3.6            | 10     | 0.54         | 28        | 52 | 1,000                     |
| MCMF01W            | MF 100 | 1W                   | 5              | 12     | 0.7          | 25        | 52 | 1,000                     |
| MCMF02W            | MF 200 | 2W                   | 5.5            | 16     | 0.7          | 28        | 64 | 1,000                     |
| MCMF034            | MF 300 | 3W                   | 6.5            | 17.5   | 0.75         | 28        | 64 | 500                       |

# Precision Metal Film Resistor

| Part Number       | Style    | Power Rating at 70°C | Dimension (mm) |        |         |      |    | Standard Packing Quantity |
|-------------------|----------|----------------------|----------------|--------|---------|------|----|---------------------------|
|                   |          |                      | D Max.         | L Max. | d ±0.05 | H ±3 | PT |                           |
| <b>Small Size</b> |          |                      |                |        |         |      |    |                           |
| MCMF0S4           | MF 25-S  | 1/4W (0.25W)         | 1.85           | 3.5    | 0.45    | 28   | 52 | 5,000                     |
| MCMFF04           | MF 40-SS | 0.4W                 | 1.9            | 3.7    | 0.45    | 28   | 52 | 5,000                     |
| MCMF0S2           | MF50-S   | 1/2W (0.5W)          | 3              | 9      | 0.54    | 28   | 52 | 2,000                     |
| MCMF0M7           | MF 75-S  | 0.75W                | 3.5            | 10     | 0.54    | 28   | 52 | 5,000                     |
| MCMF01S           | MF 100-S | 1W                   | 3.5            | 10     | 0.54    | 28   | 52 | 1,000                     |
| MCMF02S           | MF 200-S | 2W                   | 5              | 12     | 0.7     | 28   | 52 | 1,000                     |
| MCMF03S           | MF 300-S | 3W                   | 5.5            | 16     | 0.7     | 28   | 64 | 1,000                     |

**Note:**

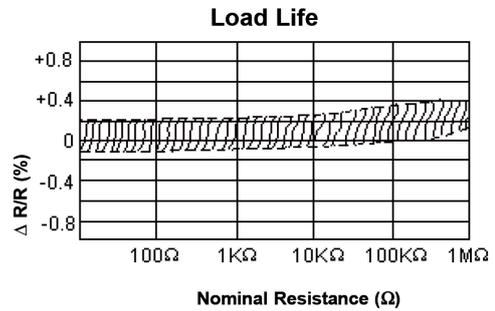
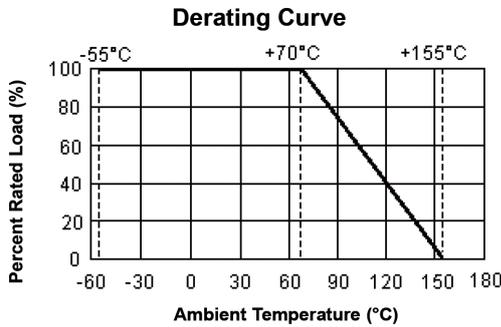
Extra small size types (-SS) are Non flame coating (Dark Green Colour)

## General Specifications

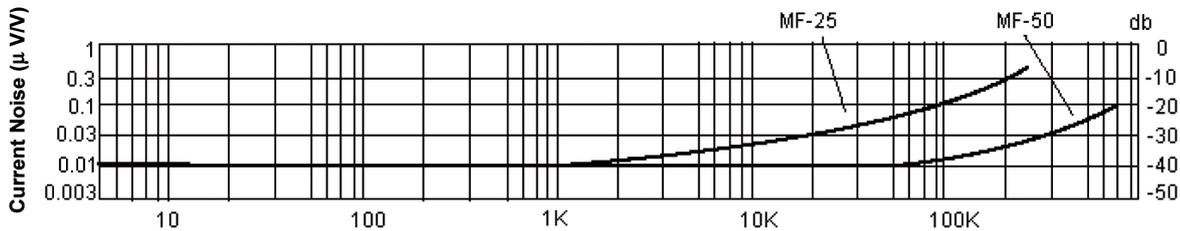
| Part Number | Style    | Max. Working Voltage | Max. Overload Voltage | Dielectric Withstanding Voltage | Tolerance |
|-------------|----------|----------------------|-----------------------|---------------------------------|-----------|
| MCMF12      | MF 12    | 200V                 | 400V                  | 400V                            | ±1%       |
| MCMF0S4     | MF 25-S  |                      |                       |                                 | ±2%       |
| MCMFF04     | MF 40-SS | 200V                 | 400V                  | 200V                            | ±5%       |
| MCMF0W4     | MF25     | 250V                 | 500V                  | 500V                            | ±1%       |
| MCMF0W2     | MF50     | 350V                 | 700V                  | 700V                            | -         |
| MCMF0S2     | MF50-S   |                      |                       |                                 |           |
| MCMF01W     | MF100    | 500V                 | 1,000V                | 1,000V                          | ±5%       |
| MCMF02W     | MF200    |                      |                       |                                 |           |
| MCMF03W     | MF300    |                      |                       |                                 |           |

| Part Number | Resistance Range | TCR         | Special Order |                                               |            |
|-------------|------------------|-------------|---------------|-----------------------------------------------|------------|
|             |                  |             | Tolerance     | Resistance Range                              | TCR        |
| MCMF12      | 10Ω to 1MΩ       | ±50 PPM/°C  | ±0.25%        | 51.1Ω to 200kΩ                                | ±15 PPM/°C |
| MCMF0S4     | 10Ω to 1MΩ       | ±100 PPM/°C | ±0.5%         | 51.1Ω to 511kΩ                                | ±25 PPM/°C |
| MCMFF04     | 1Ω to 1MΩ        | ±200 PPM/°C |               |                                               | ±50 PPM/°C |
| MCMF0W4     | 10Ω to 1MΩ       | ±50 PPM/°C  | ±0.1%         | 100Ω to 100kΩ                                 | ±15 PPM/°C |
| MCMF0W2     | -                | -           | ±0.1%         | 100Ω to 300kΩ<br>51.1Ω to 511kΩ<br>10Ω to 1MΩ | ±15 PPM/°C |
| MCMF0S2     |                  |             |               |                                               | ±25 PPM/°C |
| MCMF01W     | 51.1Ω to 1MΩ     | ±50 PPM/°C  | -             | -                                             | -          |
| MCMF02W     | 51.1Ω to 1MΩ     | ±100 PPM/°C |               |                                               |            |
| MCMF03W     | 10Ω to 1MΩ       | ±200 PPM/°C |               |                                               |            |

# Precision Metal Film Resistor



## Current Noise Level



## Part Number Explanation

| MCMF       | 0                             | W4                                                                                                                          | B                                                                     | B                                                                    | 1002                                                                                                                                                                           | A 5 0              |
|------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Type       | Feature                       | Wattage                                                                                                                     | Tolerance                                                             | PPM Requirement                                                      | Resistance                                                                                                                                                                     | Internal Reference |
| Metal Film | 0 = Standard<br>F = Non-Flame | W8 = 1/8W<br>W4 = 1/4W<br>1W = 1W<br>2W = 2W<br>3W = 3W<br>Small Size<br>S2 = 1/2W-S<br>Extra Small<br>Size<br>04 = 0.4W-SS | B = ±0.1%<br>C = ±0.25%<br>D = ±0.5%<br>F = ±1%<br>G = ±2%<br>J = ±5% | B = 15 ppm<br>C = 25 ppm<br>F = 50 ppm<br>G = 100 ppm<br>J = 200 ppm | 1st to 3rd digits are significant figures of the resistance and the 4th digit indicates the number of zeros.<br><br>R = Decimal Point<br>1331 = 1.33 kohms<br>49R9 = 49.9 ohms |                    |

## Part Number Table

| Description                   | Part Number      |
|-------------------------------|------------------|
| Precision Metal Film Resistor | MCMF0W4BB1002A50 |

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