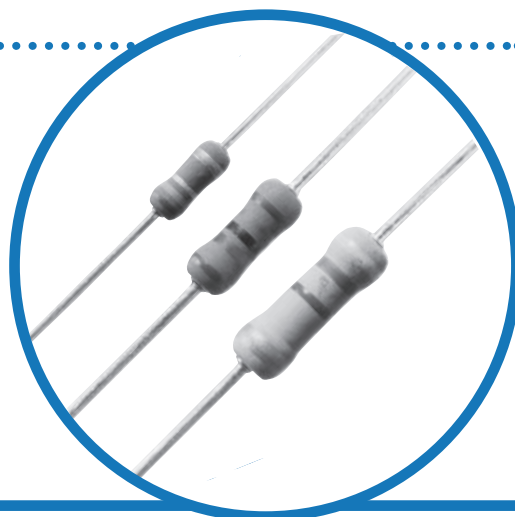


Power Metal Film Resistors

MF-S Series

- Small size for power rating
- Range of 4 sizes: 0.5 watt to 3 watt at 70°C
- Flameproof protection



| | | MF1/2S | MF1S | MF2S | MF3S |
|---------------------------|----------|---------------|------|----------------|------|
| Power rating at 70° C | watts | 0.5 | 1.0 | 2.0 | 3.0 |
| Resistance range | ohms | 0R1 – 1M | | | |
| Limiting element voltage | volts | 350 | | | |
| TCR | ppm/° C | < 10Ω : 350 | | ≥10Ω : 150 | |
| Isolation voltage | volts | 500 | | | 700 |
| Resistance tolerance | % | ≤ 1Ω : 5 | | > 1Ω : 1, 2, 5 | |
| Standard values | | E24 preferred | | | |
| Thermal impedance | ° C/watt | 140 | 110 | 80 | 60 |
| Ambient temperature range | ° C | -55 to 155 | | | |

Physical Data

| Dimensions (mm) & Weight (g) | | | | | | | |
|------------------------------|-----------------|-----------------|-------|------------------|----------------------------|------------------------|--------|
| Type | L | D | f min | d +0.01 -0.06 | PCB mounting centres | Min. bend radius | Wt.nom |
| MF1/2S | 6.2 +0 -0.5 | 2.5 +0 -0.25 | 21.0 | 0.6 | 10.2 | 0.6 | 0.3 |
| MF1S | 9.0 +0 -0.6 | 3.6 +0.5 -0 | 19.6 | 0.8 | 12.7 | 1.2 | 0.5 |
| MF2S | 12.5 +0 -2.1 | 4.2 +0.8 -0 | 17.8 | 0.8 | 18.4 | 1.2 | 0.9 |
| MF3S | 14.5 +0.6 -0 | 5.3 +0 -0.4 | 23.8 | 0.8 | 20.3 | 1.2 | 1.1 |

General Note

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Construction

The resistance element is a precisely controlled thin film of metal alloy on a high purity ceramic core, protected by a cement coating applied so that terminations remain completely clear.

This permits a well defined body length, (clean lead to clean lead dimension L).

Terminations

Material Solder-coated copper wire.

Strength The terminations meet the requirements of IEC 68.2.21

Solderability The terminations meet the requirements of IEC 115-1, Clause 4.17.3.2

Marking

MF Series resistors are colour coded with 5 bands for 1% tolerance or 4 bands for other tolerances. IEC 62 colours are used.

Solvent Resistance

The body protection and marking are resistant to all normal industrial cleaning solvents suitable for printed circuits.

Flammability

The resistors will not burn or emit incandescent particles under any condition of applied temperature or power overload.

Performance Data

| | | Maximum |
|---|------|----------------|
| Load: 1000 hours at 70°C | ΔR % | 5 |
| Shelf life: 12 months at room temperature | ΔR % | 1 |
| Derating from rated power at 70°C | ΔR % | zero at 155° C |
| Climatic | ΔR % | 1 |
| Climatic category | | 40/125/56 |
| Temperature rapid change | ΔR % | 0.5 |
| Resistance to solder heat | ΔR % | 0.5 |

Application Notes

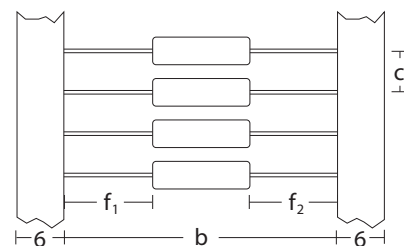
1. If the resistors are to dissipate full rate power, it is recommended that the terminations should not be soldered closer than 4mm from the body.
2. Due to operating temperature limitations imposed by some pcb materials, derating may be necessary. An estimate of the temperature rise to be expected can be calculated using the thermal impedance figures given under Electrical Data.
3. Lead Formed resistors can also be supplied. Standard options of Lancet, Radial and Goalpost forming are shown in lead Form Information section.

Packaging

The preferred method of packaging is taped and ammo packed, see figure 1 for critical dimensions.

Alternative packaging is available by special request.

Figure 1



Body location $f_1 - f_2 \leq 1.4 \text{ mm}$

| Type | b | c |
|--------|------|--------|
| MF1/2S | 52±2 | 5 ±0.5 |
| MF1S | 52±2 | 5 ±0.5 |
| MF2S | 52±2 | 5 ±0.5 |
| MF3S | 67±2 | 10±0.5 |

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Ordering Procedure

Example: MF3S at 3.3 kilohms and 5% tolerance in ammo pack box of 1000 pieces –

MF3S - 3K3 J I

Type _____

Value (use IEC62 code) _____

Tolerance (use IEC62 code) _____

| | | | |
|---|----|---|----|
| F | 1% | J | 5% |
| G | 2% | | |

Packing _____

| | | | | |
|---|------|--------|----------|----------|
| I | Ammo | MF1/2S | 5000/box | Standard |
| | | MF1S | 2500/box | |
| | | MF2S | 1500/box | |
| | | MF3S | 1000/box | |

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