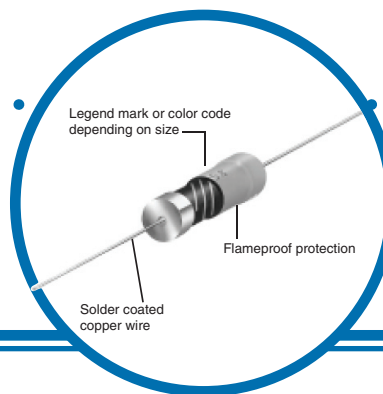


# Power Metal Film Resistor

## MF-S Series

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



## Electrical Data

| IRC Type | Power Rating @ 70°C (watts) | Resistance Range (ohms) | Limiting Element Voltage (volts) | TCR (ppm/°C)          | Isolation Voltage (volts) | Resistance Tolerance (%)   | Standard Values | Thermal Impedance (°C/watt) | Operating Temperature Range (°C) |
|----------|-----------------------------|-------------------------|----------------------------------|-----------------------|---------------------------|----------------------------|-----------------|-----------------------------|----------------------------------|
| MF1/2S   | 0.5                         | 0.1 - 1M                | 350                              | 150                   | 500                       | ≤1Ω: 5, 10<br>>1Ω: 1, 2, 5 | E24 Preferred   | 140                         | -55 to 235                       |
| MF1S     | 1.0                         |                         |                                  |                       |                           |                            |                 | 110                         |                                  |
| MF2S     | 2.0                         | 0.1 - 470K              |                                  | <1Ω: 350<br>≥10Ω: 150 | 700                       |                            |                 | 80                          |                                  |
| MF3S     | 3.0                         |                         |                                  | 60                    |                           |                            |                 |                             |                                  |

## Environmental Data

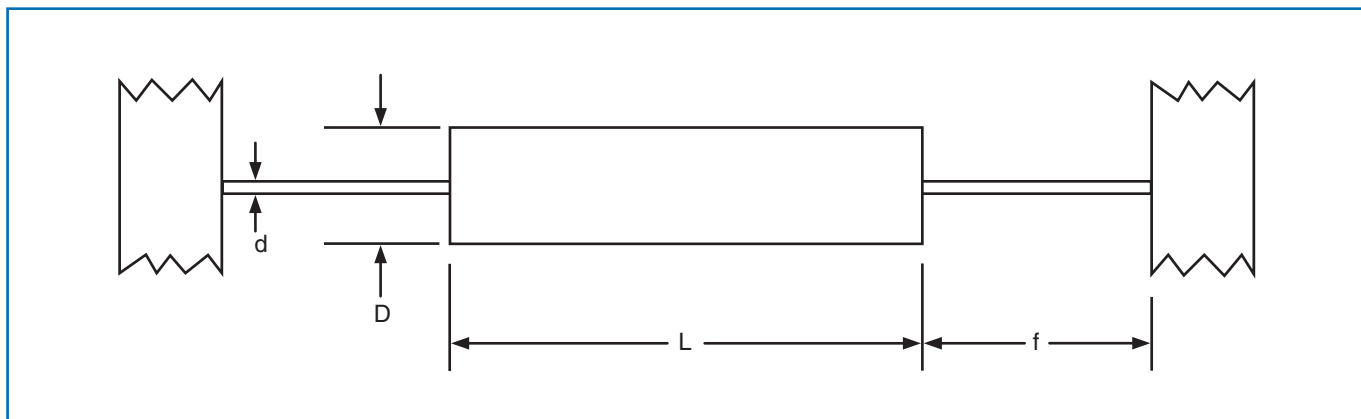
| Characteristic                            | Maximum       |
|---|---------------|
| Loaded at Rated Power: 1000 hrs at 70°C   | 5             |
| Shelf Life: 12 months at room temperature | 1             |
| Derating from Rated Power at 70°C         | zero at 155°C |
| Climatic                                  | 1             |
| Climatic Category                         | 40/125/56     |
| Temperature Rapid Change                  | 0..5          |
| Resistance to Solder heat                 | 0.5           |

### General Note

IRC reserves the right to make changes in product specification without notice or liability. All information is subject to IRC's own data and is considered accurate at time of going to print.

# Power Metal Film Resistor

## Physical Data



Dimensions (Inches and (mm)) & Weight (g)

| IRC Type | L max           | D max          | f min           | d nom          | PCB Mounting Centers | Min Bend Radius | Wt. nom |
|----------|-----------------|----------------|-----------------|----------------|----------------------|-----------------|---------|
| MF1/2S   | 0.244<br>(6.2)  | 0.090<br>(2.3) | 0.039<br>(21.0) | 0.024<br>(0.6) | 0.402<br>(10.2)      | 0.024<br>(0.6)  | 0.3     |
| MF1S     | 0.354<br>(9.0)  | 0.134<br>(3.4) | 0.772<br>(19.6) | 0.031<br>(0.8) | 0.500<br>(12.7)      | 0.047<br>(1.2)  | 0.5     |
| MF2S     | 0.492<br>(12.5) | 0.165<br>(4.2) | 0.700<br>(17.8) | 0.031<br>(0.8) | 0.724<br>(18.4)      | 0.047<br>(1.2)  | 0.9     |
| MF3S     | 0.571<br>(14.5) | 0.201<br>(5.1) | 0.937<br>(23.8) | 0.031<br>(0.8) | 0.799<br>(20.3)      | 0.047<br>(1.2)  | 1.1     |

### 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 color coded with 4 bands. IEC 62 colors 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 incandescant particles under any condition of applied temperature or power overload.

# Power Metal Film Resistor

## 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.

## Ordering Data

Sample Part No. .... MF2S 6802 J R

IRC Type ..... MF1/2S, MF1S, MF2S, MF3S

Value ..... (Use IEC 62 code)

Tolerance ..... (Use IEC 62 code)  
J = 5%, K = 10%

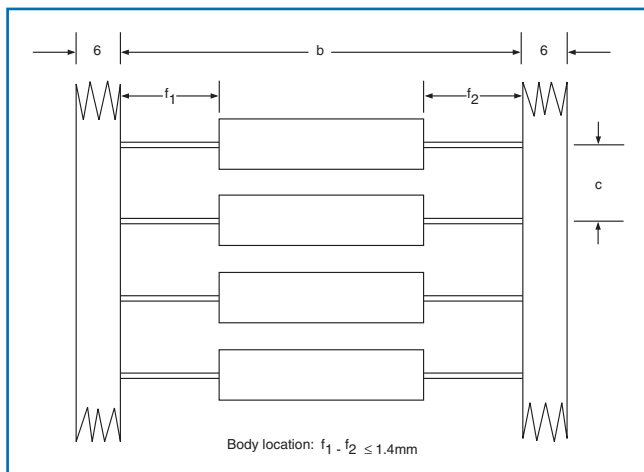
Packaging Details ..... R = Reel, A = Ammo

| Type   | Code | MF1/2S | MF1S | MF2S | MF3S |
|--------|------|--------|------|------|------|
| MF1/2S | R    | 5000   | 2500 | 2500 | 1000 |
| MF1S   | A    | 5000   | 2500 | 2500 | N/A  |
| MF2S   | A    | 2000   | 1000 | 1000 | N/A  |

## Packaging

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

Alternative packaging is available by special request.



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