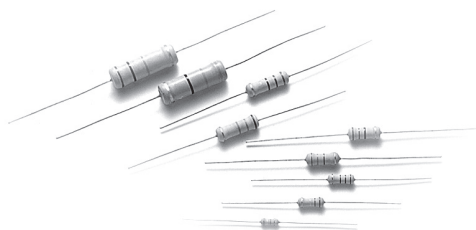


Metal Oxide Film Resistors

Flame-Proof Type

Normal & Miniature Style [RSF Series]



INTRODUCTION

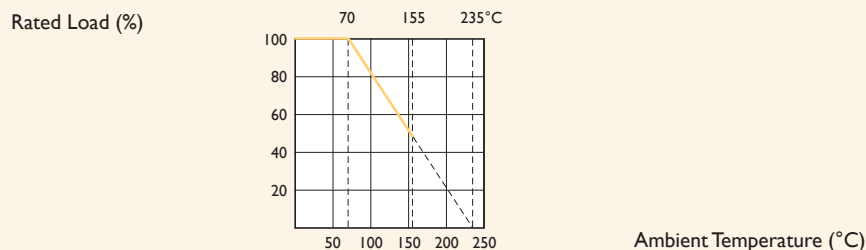
The RSF Series Metal Oxide Film Flame-Proof Resistors offer excellent performance in applications where stability and uniformity of characteristics are desired. The normal style & 'RSF-WV' style of RSF series are coated with layers of gray flame-proof lacquer; and the miniature style are coated with layers of pink colors flame-proof lacquer.

FEATURES

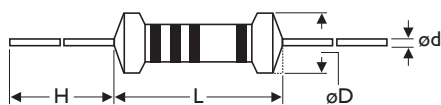
| | |
|----------------------------------------|----------------------------|
| Power Rating | 1/4W, 1/2W, 1W, 2W, 3W, 5W |
| Resistance Tolerance | ±2%, ±5% |
| T.C.R. | ±300ppm/°C |
| Flameproof Multi-layer Coating Meets | UL-94V-0 |
| Flameproof Feature Meets Overload Test | UL-1412 |

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 | | | |
|--------|-----------|-----------|---------|--------|-----------|
| Normal | Miniature | L | øD | H | ød |
| RSF-25 | RSF50S | 6.3±0.5 | 2.4±0.2 | 28±2.0 | 0.55±0.05 |
| RSF-50 | RSF1WS | 9.0±0.5 | 3.3±0.3 | 26±2.0 | 0.55±0.05 |
| RSF100 | RSF2WS | 11.5±1.0 | 4.5±0.5 | 35±2.0 | 0.8±0.05 |
| RSF200 | RSF3WS | 15.5±1.0 | 5.0±0.5 | 33±2.0 | 0.8±0.05 |
| RSF3WM | RSF5SS | 17.5±1.0 | 6.5±1.0 | 32±2.0 | 0.8±0.05 |
| RSF300 | RSF5WS | 24.5±1.0 | 8.5±1.0 | 38±2.0 | 0.8±0.05 |
| RSF500 | - | 24.5±1.0 | 8.5±1.0 | 38±2.0 | 0.8±0.05 |

Note: RSF1WS (for MB Type) ød = 0.8±0.05mm

ELECTRICAL CHARACTERISTICS

NORMAL STYLE

| STYLE | RSF-25 | RSF-50 | RSF100 | RSF200 | RSF3WM | RSF300 | RSF500 |
|-----------------------------|---------------------------------|--------|--------|--------|--------|--------|--------|
| Power Rating at 70°C | 1/4W | 1/2W | 1W | 2W | 3W | | 5W |
| Maximum Working Voltage | 200V | 250V | 350V | | 450V | 500V | 750V |
| Maximum Overload Voltage | 300V | 400V | 600V | | 700V | 800V | 1,000V |
| Voltage Proof on Insulation | 250V | 350V | 500V | | | | |
| Resistance Range | 1Ω - 1MΩ & for E24 series value | | | | | | |
| Operating Temp. Range | -55°C to +155°C | | | | | | |
| Temperature Coefficient | ±300ppm/°C | | | | | | |

MINIATURE STYLE

| STYLE | RSF50S | RSFIWS | RSF2WS | RSF3WS | RSF5SS | RSF5VS |
|-----------------------------|---------------------------------|--------|--------|--------|--------|--------|
| Power Rating at 70°C | 1/2W | | 2W | 3W | 5W | 5W |
| Maximum Working Voltage | 250V | 300V | 350V | 350V | 500V | 700V |
| Maximum Overload Voltage | 400V | | 600V | | 800V | 900V |
| Voltage Proof on Insulation | 350V | 400V | 500V | | | |
| Resistance Range | 1Ω - 1MΩ & for E24 series value | | | | | |
| Operating Temp. Range | -55°C to +155°C | | | | | |
| Temperature Coefficient | ±300ppm/°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) | ±1.0%+0.05Ω for normal style ±2.0%+0.05Ω for miniature style |
| 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. | >1,000MΩ |
| 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) | ±2.0%+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 | ±5.0%+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) | ±5.0%+0.05Ω |
| Temperature Cycling | IEC 60115-1 4.19 | -55°C ⇄ Room Temp. ⇄ +155°C ⇄ Room Temp. (5 cycles) | ±1.0%+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 | ±1.0%+0.05Ω |
| Accidental Overload Test | IEC 60115-1 4.26 | 4 times RCWV for 1 Min. | No evidence of flaming or arcing |

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

Revision: 2020

Mouser Electronics

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