

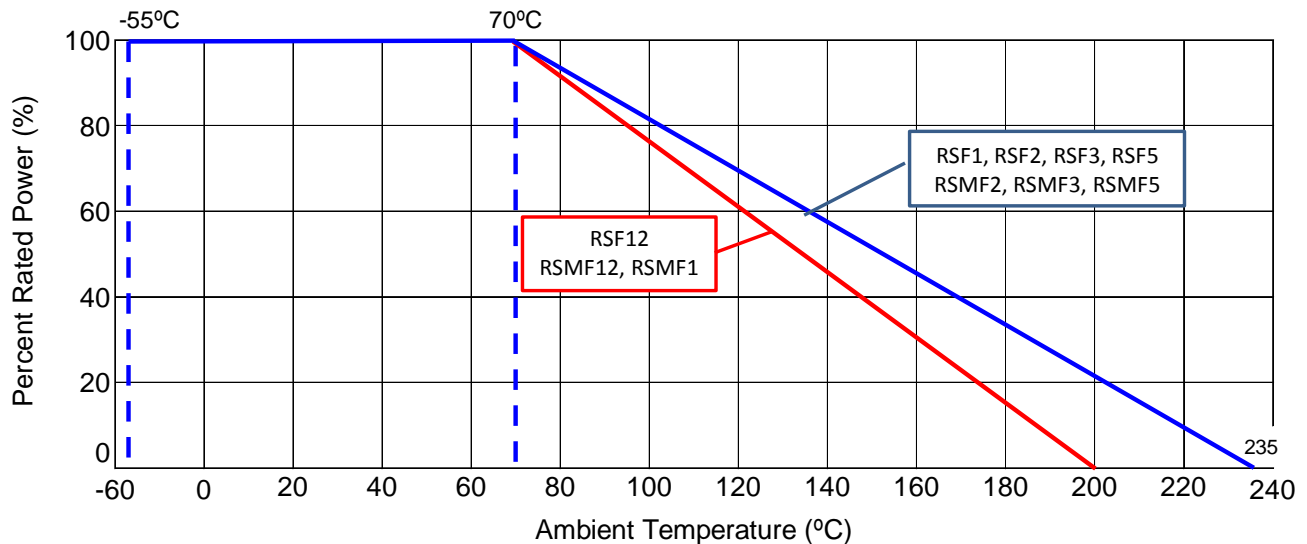
- Features:
- Lower-cost alternative to carbon comps and wirewounds
 - Coating meets UL 94V-0
 - Meets solvent test of Mil Standard 202, Method 215
 - Cut and formed product is available on select sizes; contact factory for details
 - Higher or lower resistance values may be possible; contact factory
 - Flameproof
 - RoHS compliant / lead-free



| Electrical Specifications | | | | | | | | |
|---------------------------|-----------------------------|-----------------------------|--------------------------|---------------------------------|------------------------------------|-------------------------------|------------|------------|
| Type / Code | Power Rating (Watts) @ 70°C | Maximum Working Voltage (1) | Maximum Overload Voltage | Dielectric Withstanding Voltage | Resistance Temperature Coefficient | Ohmic Range (Ω) and Tolerance | | |
| | | | | | | 1% | 2% | 5% |
| RSF12 | 0.5W | 250V | 400V | 350V | ±200 ppm/°C | 0.1 - 150K | 0.1 - 75K | 0.1 - 1M |
| RSF1 | 1W | 350V | 600V | 600V | ±200 ppm/°C | 0.1 - 100K | | 0.1 - 1M |
| RSF2 | 2W | 350V | 600V | 600V | ±200 ppm/°C | 0.1 - 120K | | 0.1 - 1M |
| RSF3 | 3W | 800V | 1,000V | 750V | ±200 ppm/°C | 0.1 - 470K | 0.1 - 560K | 0.1 - 1M |
| RSF5 | 5W | 1,000V | 1,000V | 750V | ±200 ppm/°C | 0.1 - 470K | 0.1 - 560K | 0.1 - 1M |
| RSMF12 | 0.5W | 250V | 400V | 350V | ±200 ppm/°C | 0.1 - 46.4K | 0.1 - 47K | 0.1 - 470K |
| RSMF1 | 1W | 350V | 600V | 500V | ±200 ppm/°C | 0.1 - 75K | | 0.1 - 470K |
| RSMF2 | 2W | 350V | 600V | 500V | ±200 ppm/°C | 0.1 - 100K | | 0.1 - 470K |
| RSMF3 | 3W | 500V | 800V | 600V | ±200 ppm/°C | 0.1 - 118K | 0.1 - 120K | 0.1 - 470K |
| RSMF5 | 5W | 1,000V | 1,000V | 750V | ±200 ppm/°C | 0.1 - 470K | 0.1 - 560K | 0.1 - 1M |

(1) Lesser of \sqrt{PR} or maximum working voltage

Power Derating Curve:

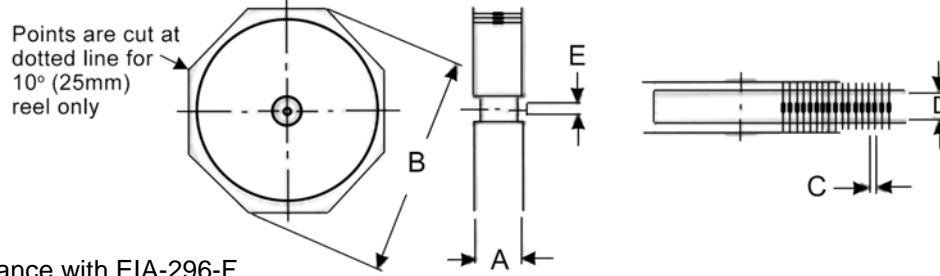


| Performance Characteristics | | | | |
|--|---------------------------------|---|-----------------------|-----------------|
| Test | Test Method | Test Specification | | Typical Results |
| Insulation Resistance | JIS C5201-1, IEC60115-1, 4.6 | ≥ 1GΩ | | ≥ 1GΩ |
| Voltage Proof | JIS C5201-1, IEC60115-1, 4.7 | ≤ ± (0.5% + 0.05Ω) | No mechanical damage. | <± 0.25% |
| Short Time Overload | JIS C5201-1, IEC60115-1, 4.13 | ≤ ± (0.75% + 0.05Ω) | | <± 0.1% |
| Resistance to Solder Heat | JIS C5201-1, IEC60115-1, 4.18 | ≤ ± (2.0% + 0.05Ω) | | <± 1.0% |
| Endurance at 70°C | JIS C5201-1, IEC60115-1, 4.25.1 | ≤ ± (5.0% + 0.05Ω) | | <± 2.0% |
| Robustness of Terminations | JIS C5201-1, IEC60115-1, 4.16 | ≤ ± (1.0% + 0.05Ω) | | <± 0.10% |
| Damp Heat (Steady state) | JIS C5201-1, IEC60115-1, 4.24 | ≤ ± (5% + 0.05Ω) | | <± 1.5% |
| Rapid Change of Temperature | JIS C5201-1, IEC60115-1, 4.19 | ≤ ± (1% + 0.05Ω) | | <± 0.2% |
| Resistance to Solvents | JIS C5201-1, IEC60115-1, 4.29 | No damage to component or removal of marking. | | Pass |
| Intermittent Overload | JIS C5201-1, IEC60115-1, 4.39 | ≤ ± (2% + 0.05Ω) | | <± 0.3% |
| Accidental Overload (Flame resistance) | JIS C5201-1, IEC60115-1, 4.26 | No flaming of gauze. | | Pass |

Operating Temperature Range: -55°C to +200°C (RSF12, RSMF12, RSMF1)
-55°C to +235°C (All others)

| Mechanical Specifications | | | | | | |
|---------------------------|------------------|--------------------|-------------------------|--------------------|----------------------------|--------|
| | | | | | | |
| Type / Code | A Body Length | B Body Diameter | C Lead Length (Bulk) | D Lead Diameter | Lead-Tape Specification | Unit |
| RSF12 | 0.35 ± 0.04 | 0.13 ± 0.03 | 1.10 ± 0.12 | 0.03 ± 0.003 | 0.250 | inches |
| | 9.00 ± 1.00 | 3.20 ± 0.80 | 28.00 ± 3.00 | 0.70 ± 0.08 | 6.35 | mm |
| RSF1 | 0.43 ± 0.06 | 0.18 ± 0.04 | 1.10 ± 0.20 | 0.03 ± 0.002 | 0.250 | inches |
| | 11.00 ± 1.50 | 4.50 ± 1.00 | 28.00 ± 5.00 | 0.80 ± 0.05 | 6.35 | mm |
| RSF2 | 0.59 ± 0.06 | 0.22 ± 0.04 | 1.18 ± 0.20 | 0.03 ± 0.004 | 0.250 | inches |
| | 15.00 ± 1.50 | 5.50 ± 1.00 | 30.00 ± 5.00 | 0.75 ± 0.10 | 6.35 | mm |
| RSF3 | 0.69 ± 0.04 | 0.24 ± 0.02 | 1.38 ± 0.12 | 0.03 ± 0.002 | 0.250 | inches |
| | 17.50 ± 1.00 | 6.00 ± 0.50 | 35.00 ± 3.00 | 0.80 ± 0.05 | 6.35 | mm |
| RSF5 | 0.96 ± 0.04 | 0.31 ± 0.02 | 1.38 ± 0.12 | 0.03 ± 0.002 | 0.250 | inches |
| | 24.50 ± 1.00 | 8.00 ± 0.50 | 35.00 ± 3.00 | 0.80 ± 0.05 | 6.35 | mm |
| RSMF12 | 0.24 ± 0.03 | 0.09 ± 0.01 | 1.10 ± 0.12 | 0.02 ± 0.003 | 0.250 | inches |
| | 6.00 ± 0.80 | 2.30 ± 0.30 | 28.00 ± 3.00 | 0.55 ± 0.07 | 6.35 | mm |
| RSMF1 | 0.35 ± 0.04 | 0.13 ± 0.03 | 1.10 ± 0.12 | 0.03 ± 0.003 | 0.250 | inches |
| | 9.00 ± 1.00 | 3.20 ± 0.80 | 28.00 ± 3.00 | 0.70 ± 0.08 | 6.35 | mm |
| RSMF2 | 0.43 ± 0.06 | 0.18 ± 0.04 | 1.18 ± 0.20 | 0.03 ± 0.002 | 0.250 | inches |
| | 11.00 ± 1.50 | 4.50 ± 1.00 | 30.00 ± 5.00 | 0.80 ± 0.05 | 6.35 | mm |
| RSMF3 | 0.59 ± 0.06 | 0.22 ± 0.04 | 1.18 ± 0.20 | 0.03 ± 0.004 | 0.250 | inches |
| | 15.00 ± 1.50 | 5.50 ± 1.00 | 30.00 ± 5.00 | 0.75 ± 0.10 | 6.35 | mm |
| RSMF5 | 0.69 ± 0.04 | 0.24 ± 0.02 | 1.38 ± 0.08 | 0.03 ± 0.002 | 0.250 | inches |
| | 17.50 ± 1.00 | 6.00 ± 0.50 | 35.00 ± 2.00 | 0.80 ± 0.05 | 6.35 | mm |

Packaging Specifications



| Series | Code | A max ⁽¹⁾ | B max | C | D ⁽²⁾ | Tape | Unit |
|--------|------|----------------------|------------------|-------------------------------|-------------------------------|---------------|--------------|
| RSF | 12 | 2.736 69.50 | 13.504 343.00 | 0.197 ± 0.020 5.00 ± 0.50 | 2.063 ± 0.079 52.40 ± 2.00 | 0.250 6.35 | inches mm |
| | 1 | 2.815 71.50 | 13.504 343.00 | 0.197 ± 0.020 5.00 ± 0.50 | 2.063 ± 0.079 52.40 ± 2.00 | 0.250 6.35 | inches mm |
| | 2 | 3.524 89.50 | 13.504 343.00 | 0.394 ± 0.020 10.00 ± 0.50 | 2.500 ± 0.079 63.50 ± 2.00 | 0.250 6.35 | inches mm |
| | 3 | 3.740 95.00 | 12.008 305.00 | 0.394 ± 0.020 10.00 ± 0.50 | 2.874 ± 0.079 73.00 ± 2.00 | 0.250 6.35 | inches mm |
| | 5 | 4.331 110.00 | 12.008 305.00 | 0.394 ± 0.020 10.00 ± 0.50 | 3.465 ± 0.079 88.00 ± 2.00 | 0.250 6.35 | inches mm |
| RSMF | 12 | 2.618 66.50 | 13.504 343.00 | 0.197 ± 0.020 5.00 ± 0.50 | 2.063 ± 0.079 52.40 ± 2.00 | 0.250 6.35 | inches mm |
| | 1 | 2.736 69.50 | 13.504 343.00 | 0.197 ± 0.020 5.00 ± 0.50 | 2.063 ± 0.079 52.40 ± 2.00 | 0.250 6.35 | inches mm |
| | 2 | 2.815 71.50 | 13.504 343.00 | 0.197 ± 0.020 5.00 ± 0.50 | 2.063 ± 0.079 52.40 ± 2.00 | 0.250 6.35 | inches mm |
| | 3 | 3.524 89.50 | 13.504 343.00 | 0.394 ± 0.020 10.00 ± 0.50 | 2.500 ± 0.079 63.50 ± 2.00 | 0.250 6.35 | inches mm |
| | 5 | 3.740 95.00 | 12.008 305.00 | 0.394 ± 0.020 10.00 ± 0.50 | 2.874 ± 0.079 73.00 ± 2.00 | 0.250 6.35 | inches mm |

Dimension "E": This is a non-critical dimension that does not have a tolerance in the standard.

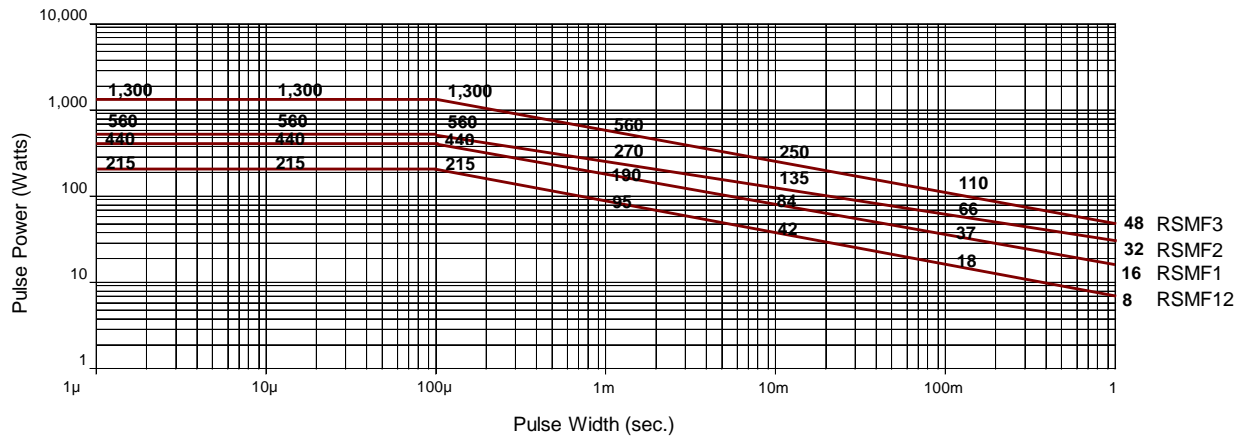
Range of diameters is from 0.547 inches (13.90 mm) to 1.500 inches (38.10 mm).

(1) Reference value only. The "A" dimension shall be governed by the overall length of the taped component.

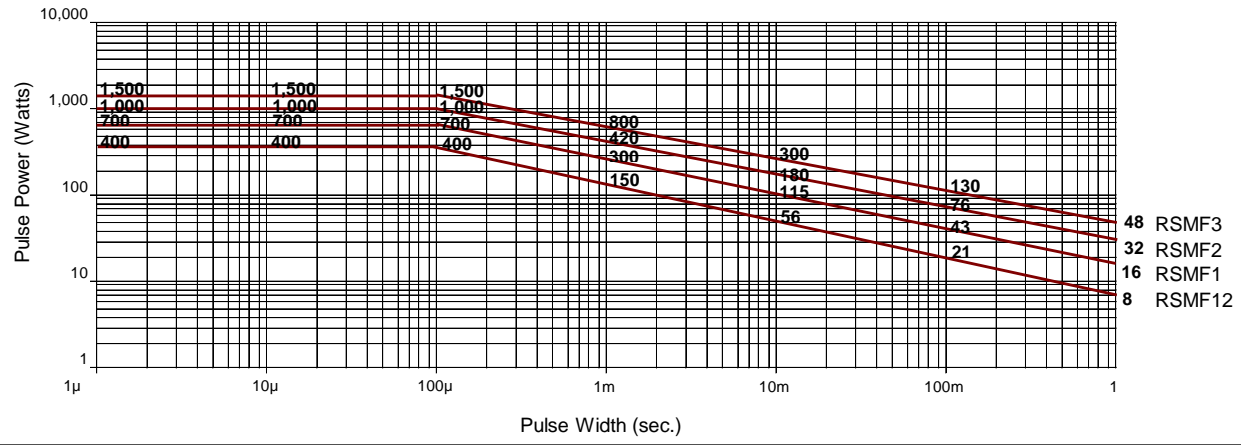
The distance between flanges shall be 0.059 inches (1.50 mm) to 0.315 (8.00 mm) greater than the overall component.

(2) The given dimension "D" expresses the standard width spacing. A 26mm narrow spacing is available as option "N" packaging code.

Pulse Limiting Power (one pulse) / RSMF Series $\leq 5\Omega$



Pulse Limiting Power (one pulse) / RSMF Series $\geq 5\Omega$



RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 2). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament.

RoHS Compliance Status

| Standard Product Series | Description | Package / Termination Type | Standard Series RoHS Compliant | Lead-Free Termination Composition | Lead-Free Mfg. Effective Date (Std Product Series) | Lead-Free Effective Date Code (YY/WW) |
|-------------------------|---|----------------------------|--------------------------------|-----------------------------------|--|---------------------------------------|
| RSF | General Purpose Metal Oxide Leaded Resistor | Axial | YES | 99.3/0.7 Sn/Cu 100% Matte Sn | Apr-05 (Japan) Jan-04 (Taiwan, China) | 05/14 04/01 |
| RSMF | Mini-Metal Oxide Leaded Resistor | Axial | YES | 99.3/0.7 Sn/Cu 100% Matte Sn | Apr-05 (Japan) Jan-04 (Taiwan, China) | 05/14 04/01 |

“Conflict Metals” Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the “conflict region” of the Easter Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

Compliance to “REACH”

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, “The Registration, Evaluation, Authorization and Restriction of Chemicals”, otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

How to Order

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| R | S | F | 1 | 2 | J | T | R | 4 | 7 | 0 |

| Product Series | Size | Power | Tolerance | | | Packaging | | | Resistance Value | | |
|---------------------|---------------|-------|-----------|------|-----|-----------|------|---------------|---------------------------------|----------|--|
| RSF | Metal Oxide | 12 | 0.5W | Code | Tol | Value | Code | Description | Size | Quantity | Four characters with the multiplier used as the decimal holder. 0.22 ohm = R220 33.2 ohm = 33R2 10.2 Kohm = 10K2 1 Mohm = 1M00 |
| RSMF | Mini | 1 | 1W | F | 1% | E96 | T | Tape and Reel | RSMF12 | 5,000 | |
| PRSF ⁽¹⁾ | Panasert | 2 | 2W | G | 2% | E24 | | | RSF12, RSF1 | 2,500 | |
| PRSM ⁽¹⁾ | Panasert Mini | 3 | 3W | J | 5% | | | | PRSM2 | | |
| | | 5 | 5W | | | | | | RSF2, RSMF3 | 1,000 | |
| | | | | | | | | | RSF3, RSMF5 | 1,000 | |
| | | | | | | | T | Tape and Reel | RSF5 | 500 (*) | |
| | | | | | | | A | Ammo | RSMF12 | 5,000 | |
| | | | | | | | | | RSF12; RSMF1 | 2,000 | |
| | | | | | | | | | RSF1, RSF2, RSMF2, PRSM2, RSMF3 | 1,000 | |
| | | | | | | | B | Bulk | RSF3, RSF5, RSMF5 | 500 (*) | |
| | | | | | | | | | All Sizes | 1,000 | |

(*) 1,000 pieces MOQ

(1) For packaging information see Radial Leaded Packaging Spec page