

RMCF Series

General Purpose Thick Film Chip Resistor

Stackpole Electronics, Inc.
Resistive Product Solutions

- Features:
- Nickel Barrier terminations standard
 - Power derating from 100% at 70°C to zero at +155°C
 - Zero ohm available (max resistance 0.05Ω)
 - RoHS compliant



| Electrical Specifications | | | | | | | | |
|---------------------------|--------------|-----------------------------|-----------------------------|--------------------------|-----------------|--|--|---|
| Type / Code | Package Type | Power Rating (Watts) @ 70°C | Maximum Working Voltage (1) | Maximum Overload Voltage | Maximum Current | Resistance Temperature Coefficient | Ohmic Range (Ω) and Tolerance (2) | |
| | | | | | | | 1% | 5% |
| RMCF 1/20 | 0201 | 0.05W | 25V | 50V | 1 Amp | ± 600 ppm/°C ± 300 ppm/°C | 1 - 24.9 25 - 10M | 1 - 24.9 25 - 10M |
| RMCF 1/16S | 0402 | 0.063W | 50V | 100V | 1 Amp | ± 500 ppm/°C ± 200 ppm/°C ± 100 ppm/°C | 1 - 9.76 10 - 97.6 100 - 1M | 1 - 9.1 10 - 91 100 - 1M |
| RMCF 1/16 | 0603 | 0.1W | 50V | 100V | 1 Amp | ± 600 ppm/°C ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 0.1 - 0.499 0.5 - 32.4 33.2 - 1M 1.1M - 10M | 0.1 - 0.499 0.5 - 20M - - |
| RMCF 1/10 | 0805 | 0.125W | 150V | 300V | 2 Amp | ± 500 ppm/°C ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 0.1 - 0.976 1 - 32.4 33.2 - 1M 1.1M - 22.1M | 0.1 - 0.910 1 - 22M - - |
| RMCF 1/8 | 1206 | 0.25W | 200V | 400V | 2 Amp | ± 500 ppm/°C ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 0.1 - 0.976 1 - 32.4 33.2 - 1M 1.1M - 10M | 0.1 - 0.910 1 - 22M - - |
| RMCF 1/4 | 1210 | 0.33W(3) | 200V | 400V | 3 Amp | ± 400 ppm/°C ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 0.1 - 9.76 10 - 32.4 33.2 - 1M 1.1M - 10M | 0.1 - 9.1 - - 10 - 20M |
| RMCF 1/2 | 2010 | 0.75W(3) | 200V | 400V | 3 Amp | ± 500 ppm/°C ± 400 ppm/°C ± 200 ppm/°C ± 100 ppm/°C | 0.1 - 0.499 0.5 - 9.76 - 10 - 10M | 0.1 - 0.499 0.5 - 9.1 10 - 10M - |
| RMCF 1 | 2512 | 1W | 200V | 400V | 3 Amp | ± 500 ppm/°C ± 400 ppm/°C ± 200 ppm/°C ± 100 ppm/°C | 0.1 - 0.499 0.5 - 9.76 - 10 - 10M | 0.1 - 0.499 0.5 - 9.1 10 - 10M - |

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

(2) Contact factory for extended ohmic values.

(3) Power rating is 0.500W for ohmic values below 1Ω



| Mechanical Specifications | | | | | | |
|---------------------------|------------------------------|---|------------------------------|------------------------------|------------------------------|--------------|
| Type / Code | L Body Length | W Body Width | H Body Height | a Top Termination | b Bottom Termination | Units |
| RMCF 1/20 | 0.024 ± 0.001 0.60 ± 0.03 | 0.011 ± 0.001 0.30 ± 0.03 | 0.010 ± 0.002 0.25 ± 0.05 | 0.005 ± 0.01 0.12 ± 0.3 | 0.006 ± 0.002 0.15 ± 0.05 | inches mm |
| RMCF 1/16S | 0.039 ± 0.004 1.00 ± 0.10 | 0.020 ± 0.002 0.50 ± 0.05 | 0.011 ± 0.004 0.30 ± 0.10 | 0.008 ± 0.004 0.20 ± 0.10 | 0.010 ± 0.004 0.25 ± 0.10 | inches mm |
| RMCF 1/16 | 0.061 ± 0.006 1.55 ± 0.15 | 0.031 + 0.006 / - 0.004 0.80 + 0.15 / - 0.10 | 0.018 ± 0.004 0.45 ± 0.10 | 0.012 ± 0.008 0.30 ± 0.20 | 0.012 ± 0.008 0.30 ± 0.20 | inches mm |
| RMCF 1/10 | 0.079 ± 0.008 2.00 ± 0.20 | 0.049 ± 0.004 1.25 ± 0.10 | 0.020 ± 0.006 0.50 ± 0.15 | 0.014 ± 0.010 0.35 ± 0.25 | 0.014 ± 0.010 0.35 ± 0.25 | inches mm |
| RMCF 1/8 | 0.126 ± 0.008 3.20 ± 0.20 | 0.063 ± 0.006 1.60 ± 0.15 | 0.021 ± 0.006 0.55 ± 0.15 | 0.020 ± 0.012 0.50 ± 0.30 | 0.020 ± 0.012 0.50 ± 0.30 | inches mm |
| RMCF 1/4 | 0.126 ± 0.010 3.20 ± 0.25 | 0.098 ± 0.008 2.50 ± 0.20 | 0.021 ± 0.006 0.55 ± 0.15 | 0.020 ± 0.012 0.50 ± 0.30 | 0.020 ± 0.012 0.50 ± 0.30 | inches mm |
| RMCF 1/2 | 0.197 ± 0.008 5.00 ± 0.20 | 0.098 ± 0.008 2.5 ± 0.20 | 0.021 ± 0.006 0.55 ± 0.15 | 0.024 ± 0.012 0.60 ± 0.30 | 0.024 ± 0.014 0.60 ± 0.35 | inches mm |
| RMCF 1 | 0.248 ± 0.008 6.30 ± 0.20 | 0.126 ± 0.008 3.20 ± 0.20 | 0.021 ± 0.006 0.55 ± 0.15 | 0.024 ± 0.012 0.60 ± 0.30 | 0.024 ± 0.014 0.60 ± 0.35 | inches mm |

| Performance Characteristics | | |
|---------------------------------|---|----------------------------------|
| Test | Test Conditions (JIS C 5202) | Test Results |
| Short Time Overload | 2.5x rated voltage for 5 seconds | ± (2% + 0.1Ω) |
| Dielectric Withstanding Voltage | 100 VAC, 1 minute | ± (1% + 0.05Ω) |
| Resistance to Soldering Heat | 260°C ±5°C, for 10 sec. ±0.5 sec. (Solder Bath) | ± 1% |
| Solderability | 235°C ±5°C, for 2 sec. ±0.5 sec. (Colophonium flux) | 95% coverage, minimum |
| Temperature Cycle | -65°C: 30 min. 25°C: 2 to 3 min. 155°C: 30 min. 25°C: 2 to 3 min. (5 Cycles) | ±(1% + 0.05Ω) Jumper (<0.05Ω) |
| Endurance (Damp load) | 40°C ± 2°C, 90% RH, Rated Load 90 min. On, 30 min. Off for 1,000 hrs. -0hrs./+48hrs. | ±(3% + 0.1Ω) Jumper (<0.05Ω) |
| Endurance (Rated load) | 70°C ± 2°C, Rated Load 90 min. On, 30 min. Off for 1,000 hrs. -0hrs./+48hrs. | ±(3% + 0.1Ω) Jumper (<0.05Ω) |
| Voltage Coefficient | 1/10 rated voltage for 3 sec. max. then rated voltage for 3 sec. max. | ±100 (ppm/V) |
| Robustness of Termination | Bend of 3mm for 5 ± 1 sec. | ± (1% + 0.05 Ohm) |

Operating Temperature Range: -55°C to +125°C (0201 size)
-55°C to +155°C (all others)

How to Order

| SEI Type | | Code | | | Nominal Resistance | Tolerance | | Packaging | | | |
|----------|-------------|-------|---------|------|--------------------|-----------|----------|-----------------|---------|------------------------|------|
| RMC | | 1/16 | | | 4.7K | 5% | | R | | | |
| Type | Description | Code | Wattage | Size | Tolerance | | Values | SEI Types | Pkg Qty | Description | Code |
| RMC | Standard | 1/20 | 0.05W | 0201 | 1% | | E96, E24 | 1/20 | 15,000 | 7" reel - paper tape | R |
| RMCF | RoHS | 1/16S | 0.063W | 0402 | 5% | | E24 | 1/16S | 10,000 | 10" reel - paper tape | G |
| | | 1/16 | 0.1W | 0603 | | | | 1/16, 1/10, 1/8 | 10,000 | 7" reel - paper tape | R |
| | | 1/10 | 0.125W | 0805 | | | | | 5,000 | bulk | A |
| | | 1/8 | 0.25W | 1206 | | | | 1,000 | | | |
| | | 1/4 | 0.33W | 1210 | | | | 1/4, 1/2, 1 | 4,000 | 7" reel - plastic tape | R |
| | | 1/2 | 0.75W | 2010 | | | | | | | |
| | | 1 | 1W | 2512 | | | | | | | |

New part number format starting January 3rd, 2011:

How to Order

| | | | | | | | | | | | | | |
|----------------|---------------------------|------|--------|-----------|-----|-----------|------------------------|------------------|----------|---|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R | M | C | F | 0 | 6 | 0 | 3 | J | T | 4 | K | 7 | 0 |
| Product Series | | Size | Power | Tolerance | | Packaging | | | | Resistance Value | | | |
| RMCF | Thick Film Chip Resistors | 0201 | 0.05W | Code | Tol | Code | Description | Size | Quantity | Four characters with the multiplier used as the decimal holder. | | | |
| | | 0402 | 0.063W | F | 1% | T | 7" reel - paper tape | 0201 | 15,000 | 0.1 ohm = R100 | | | |
| | | 0603 | 0.1W | J | 5% | | 7" reel - plastic tape | 0402 | 10,000 | 4.70 ohm = 4R70 | | | |
| | | 0805 | 0.125W | | | | | 0603, 0805, 1206 | 5,000 | 10.0 Kohm = 10K0 | | | |
| | | 1206 | 0.25W | | | G | 10" reel - paper tape | 1210, 2010, 2512 | 4,000 | 1 Mohm = 1M00 | | | |
| | | 1210 | 0.33W | | | B | Bulk | 0603, 0805, 1206 | 1,000 | Zero ohm jumper = 0R00 | | | |
| | | 2010 | 0.75W | | | | | | | | | | |
| | | 2512 | 1W | | | | | | | | | | |