

RMCF/RMCP Series

General Purpose Thick Film Standard Power and High Power Chip Resistor

Stackpole Electronics, Inc.

Resistive Product Solutions

Features:

- RMCF – standard power ratings
- RMCP – high power ratings
- Nickel Barrier terminations standard
- Power derating from 100% at 70°C to zero at +155°C
- RoHS compliant



| Electrical Specifications | | | | | | | | |
|---------------------------|---------------|-----------------------------|-----------------------------|--------------------------|-----------------|--|--|---|
| Type / Code | Old Type Code | 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% |
| RMCF0201 | 1/20 | 0.05W | 25V | 50V | 1 Amp | ± 400 ppm/°C ± 200 ppm/°C | 1 - 9.76 10 - 10M | 1 - 9.1 10 - 10M |
| RMCF0402 | 1/16S | 0.063W | 50V | 100V | 1 Amp | ± 300 ppm/°C ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 0.2 - 0.59 0.604 - 9.76 10 - 1M 1.02M - 10M | 0.2 - 0.56 0.62 - 9.1 10 - 1M 1.1M - 20M |
| RMCF0603 | 1/16 | 0.1W | 50V | 100V | 1 Amp | ± 600 ppm/°C ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 0.1 - 0.976 1 - 9.76 10 - 1M 1.02M - 10M | 0.1 - 0.91 1 - 20M - - |
| RMCF0805 | 1/10 | 0.125W | 150V | 300V | 2 Amp | ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 0.1 - 9.76 10 - 1M 1.02M - 10M | 0.1 - 20M - - |
| RMCF1206 | 1/8 | 0.25W | 200V | 400V | 2 Amp | ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 0.1 - 9.76 10 - 1M 1.02M - 10M | 0.1 - 20M - - |
| RMCF1210 | 1/4 | 0.33W(3) | 200V | 400V | 3 Amp | ± 200 ppm/°C ± 400 ppm/°C ± 200 ppm/°C ± 100 ppm/°C | 0.1 - 0.976 1 - 9.76 - 10 - 10M | 0.1 - 0.91 1 - 9.1 10 - 20M - |
| RMCF2010 | 1/2 | 0.75W | 200V | 400V | 3 Amp | ± 200 ppm/°C ± 400 ppm/°C ± 200 ppm/°C ± 100 ppm/°C | 0.1 - 0.976 1 - 9.76 - 10 - 10M | 0.1 - 0.91 1 - 9.1 10 - 10M - |
| RMCF2512 | 1 | 1W | 200V | 400V | 3 Amp | ± 200 ppm/°C ± 400 ppm/°C ± 200 ppm/°C ± 100 ppm/°C | 0.1 - 0.976 1 - 9.76 - 10 - 10M | 0.1 - 0.91 1 - 9.1 10 - 10M - |
| RMCP0402 | 1/16S | 0.1W | 50V | 100V | 1 Amp | ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 1 - 9.76 10 - 1M 1.02M - 10M | 1 - 9.76 10 - 1M 1.02M - 10M |
| RMCP0603 | 1/16 | 0.125W | 50V | 100V | 1 Amp | ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 1 - 9.76 10 - 1M 1.02M - 10M | 1 - 9.76 10 - 1M 1.02M - 10M |
| RMCP0805 | 1/10 | 0.25W | 150V | 300V | 2 Amp | ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 1 - 9.76 10 - 1M 1.02M - 10M | 1 - 9.76 10 - 1M 1.02M - 10M |
| RMCP1206 | 1/8 | 0.33W | 200V | 400V | 2 Amp | ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 1 - 9.76 10 - 1M 1.02M - 10M | 1 - 9.76 10 - 1M 1.02M - 10M |
| RMCP1210 | 1/4 | 0.5W | 200V | 400V | 3 Amp | ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 1 - 9.76 10 - 1M 1.02M - 10M | 1 - 9.76 10 - 1M 1.02M - 10M |
| RMCP2010 | 1/2 | 1W | 200V | 400V | 3 Amp | ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 1 - 9.76 10 - 1M 1.02M - 10M | 1 - 9.76 10 - 1M 1.02M - 10M |
| RMCP2512 | 1 | 2W | 200V | 400V | 3 Amp | ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C | 1 - 9.76 10 - 1M 1.02M - 10M | 1 - 9.76 10 - 1M 1.02M - 10M |

(1) Lesser of √PR or maximum working voltage.

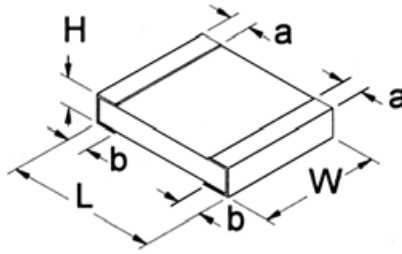
(2) Contact factory for extended ohmic values.

(3) Power rating is 0.5W for ohmic values below 1Ω

RMCF/RMCP Series

General Purpose Thick Film Standard Power
and High Power Chip Resistor

Stackpole Electronics, Inc.
Resistive Product Solutions



Mechanical Specifications

| Type / Code | L Body Length | W Body Width | H Body Height | a Top Termination | b Bottom Termination | Unit |
|----------------------|------------------------------|---|-------------------------------|------------------------------|------------------------------|--------------|
| RMCF0201 | 0.024 ± 0.001 0.60 ± 0.03 | 0.012 ± 0.001 0.30 ± 0.03 | 0.009 ± 0.0004 0.23 ± 0.01 | 0.006 ± 0.002 0.15 ± 0.05 | 0.006 ± 0.002 0.15 ± 0.05 | inches mm |
| RMCF0402 RMCP0402 | 0.039 ± 0.004 1.00 ± 0.10 | 0.020 ± 0.002 0.50 ± 0.05 | 0.012 ± 0.004 0.30 ± 0.10 | 0.008 ± 0.004 0.20 ± 0.10 | 0.010 ± 0.006 0.25 ± 0.15 | inches mm |
| RMCF0603 RMCP0603 | 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 |
| RMCF0805 RMCP0805 | 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 |
| RMCF1206 RMCP1206 | 0.126 ± 0.010 3.20 ± 0.25 | 0.063 ± 0.006 1.60 ± 0.15 | 0.022 ± 0.006 0.55 ± 0.15 | 0.020 ± 0.012 0.50 ± 0.30 | 0.020 ± 0.012 0.50 ± 0.30 | inches mm |
| RMCF1210 RMCP1210 | 0.126 ± 0.010 3.20 ± 0.25 | 0.098 ± 0.010 2.50 ± 0.25 | 0.022 ± 0.006 0.55 ± 0.15 | 0.020 ± 0.012 0.50 ± 0.30 | 0.020 ± 0.012 0.50 ± 0.30 | inches mm |
| RMCF2010 RMCP2010 | 0.197 ± 0.008 5.00 ± 0.20 | 0.098 ± 0.008 2.50 ± 0.20 | 0.022 ± 0.006 0.55 ± 0.15 | 0.024 ± 0.012 0.60 ± 0.30 | 0.024 ± 0.014 0.60 ± 0.35 | inches mm |
| RMCF2512 RMCP2512 | 0.248 ± 0.008 6.30 ± 0.20 | 0.126 ± 0.010 3.20 ± 0.25 | 0.022 ± 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)

RMCF/RMCP Series

General Purpose Thick Film Standard Power and High Power Chip Resistor

Stackpole Electronics, Inc.

Resistive Product Solutions

How to Order - RMCF

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| 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 | Value | Code | Description | Size | Quantity | Four characters with the multiplier used as the decimal holder. 0.1 ohm = R100 4.70 ohm = 4R70 10.0 Kohm = 10K0 1 Mohm = 1M00 Zero ohm jumper = 0R00 |
| | | 0402 | 0.063W | F | 1% | E96, E24 | T | 7" Reel - Paper Tape | 0201, 0402 | 10,000 | |
| | | 0603 | 0.1W | J | 5% | E24 | T | 7" Reel - Plastic Tape | 0603, 0805, 1206 | 5,000 | |
| | | 0805 | 0.125W | Z | jumper | | G | 10" Reel - Paper Tape | 0603, 0805, 1206 | 10,000 | |
| | | 1206 | 0.25W | | | | B | Bulk | 0603, 0805, 1206 | 1,000 | |
| | | 1210 | 0.33W | | | | | | | | |
| | | 2010 | 0.75W | | | | | | | | |
| | | 2512 | 1W | | | | | | | | |

How to Order - RMCP

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R | M | C | P | 0 | 6 | 0 | 3 | J | T | 4 | K | 7 | 0 |

| Product Series | | Size | Power Rating | Tolerance | | | Packaging | | | | Resistance Value |
|----------------|------------|------|--------------|-----------|-----|----------|-----------|---------------------|------------------------|----------|--|
| RMCP | High Power | 0402 | 0.1W | Code | Tol | Value | Code | Description | Size | Quantity | Four characters with the multiplier used as the decimal holder. 1 ohm = 1R00 10 Kohm = 10K0 1 Mohm = 1M00 |
| | | 0603 | 0.125W | F | 1% | E96, E24 | T | 7" Reel Paper Tape | 0402 | 10,000 | |
| | | 0805 | 0.25W | J | 5% | E24 | T | 7" Reel Paper Tape | 0603, 0805, 1206, 1210 | 5,000 | |
| | | 1206 | 0.33W | | | | G | 10" Reel Paper Tape | 2010, 2512 | 4,000 | |
| | | 1210 | 0.5W | | | | | | 0603, 0805, 1206, 1210 | 10,000 | |
| | | 2010 | 1W | | | | | | | | |
| | | 2512 | 2W | | | | | | | | |

Legacy Part Number (before January 3, 2011):

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

| SEI Type | | Code | | | Nominal Resistance | Tolerance | | Packaging | | | | |
|-------------|-------------|-------------|---------|------|--------------------|-----------|--------|------------------------|-----------|-----------------------|-------------|------|
| RMCP | | 0603 | | | 4.7K | 5% | | R | | | | |
| Type | Description | Code | Wattage | Size | Tolerance | | Values | | SEI Types | Pkg Qty | Description | Code |
| RMCP | High Power | 0402 | 0.1W | 0402 | 1% | E96, E24 | | 0402 | 10,000 | 7" reel - paper tape | R | |
| | | 0603 | 0.125W | 0603 | 5% | E24 | | 0603, 0805, 1206, 1210 | 10,000 | 10" reel - paper tape | G | |
| | | 0805 | 0.25W | 0805 | | | | 0603, 0805, 1206, 1210 | 5,000 | 7" reel - paper tape | R | |
| | | 1206 | 0.33W | 1206 | | | | 2010, 2512 | 4,000 | | | |
| | | 1210 | 0.5W | 1210 | | | | | | | | |
| | | 2010 | 1W | 2010 | | | | | | | | |
| | | 2512 | 2W | 2512 | | | | | | | | |