

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
 - AEC-Q200 Compliant (except RMCP0201)
 - RoHS compliant and halogen-free



Electrical Specifications - RMCF

| 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% |
| RMCF01005 | 0.03W | 15V | 30V | 0.5 Amp | -200/+600 ppm/°C | 1 - 9.76 | |
| | | | | | ± 250 ppm/°C | 10 - 1M | |
| RMCF0201 | 0.05W | 25V | 50V | 1 Amp | ± 400 ppm/°C | 1 - 9.76 | |
| | | | | | ± 200 ppm/°C | 10 - 10M | |
| RMCF0402 | 0.063W | 50V | 100V | 1 Amp | ± 300 ppm/°C | 0.2 - 0.392 | |
| | | | | | ± 250 ppm/°C | 0.4 - 0.59 | |
| | | | | | ± 200 ppm/°C | 0.604 - 9.76 | |
| | | | | | ± 100 ppm/°C | 10 - 1M | |
| | | | | | ± 200 ppm/°C | 1.02M - 10M | 1.1M - 20M |
| RMCF0603 | 0.1W | 75V | 150V | 1 Amp | ± 500 ppm/°C | 0.1 - 0.499 | |
| | | | | | ± 400 ppm/°C | 0.5 - 0.976 | |
| | | | | | ± 200 ppm/°C | 1 - 9.76 | 1 - 20M |
| | | | | | ± 100 ppm/°C | 10 - 1M | - |
| | | | | | ± 200 ppm/°C | 1.02M - 10M | - |
| RMCF0805 | 0.125W | 150V | 300V | 2 Amp | ± 200 ppm/°C | 0.1 - 9.76 | 0.1 - 20M |
| | | | | | ± 100 ppm/°C | 10 - 1M | - |
| | | | | | ± 200 ppm/°C | 1.02M - 10M | - |
| RMCF1206 | 0.25W | 200V | 400V | 2 Amp | ± 200 ppm/°C | 0.1 - 9.76 | 0.1 - 20M |
| | | | | | ± 100 ppm/°C | 10 - 1M | - |
| | | | | | ± 200 ppm/°C | 1.02M - 10M | - |
| RMCF1210 | 0.33W ⁽³⁾ | 200V | 400V | 3 Amp | ± 200 ppm/°C | 0.1 - 0.976 | |
| | | | | | ± 400 ppm/°C | 1 - 9.76 | |
| | | | | | ± 200 ppm/°C | - | 10 - 20M |
| | | | | | ± 100 ppm/°C | 10 - 10M | - |
| RMCF2010 | 0.75W | 200V | 400V | 3 Amp | ± 200 ppm/°C | 0.1 - 0.976 | |
| | | | | | ± 400 ppm/°C | 1 - 9.76 | |
| | | | | | ± 200 ppm/°C | - | 10 - 10M |
| | | | | | ± 100 ppm/°C | 10 - 10M | - |
| RMCF2512 | 1W | 200V | 400V | 3 Amp | ± 200 ppm/°C | 0.1 - 0.976 | |
| | | | | | ± 400 ppm/°C | 1 - 9.76 | |
| | | | | | ± 200 ppm/°C | - | 10 - 10M |
| | | | | | ± 100 ppm/°C | 10 - 10M | - |

Notes: (1) Lesser of $\sqrt{P \cdot R}$ or maximum working voltage
 (2) Contact factory for extended ohmic values
 (3) Power rating is 0.5W for ohmic values 1KΩ and below

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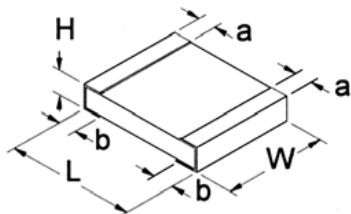
Electrical Specifications - RMCP

| 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% | |
| RMCP0201 | 0.063W | 25V | 50V | 1 Amp | -200/+400 ppm/°C | 1 - 9.76 | |
| | | | | | ± 200 ppm/°C | 10 - 1M | |
| RMCP0402 | 0.125W | 50V | 100V | 1.5 Amp | ± 200 ppm/°C | 1 - 9.76 | |
| | | | | | ± 100 ppm/°C | 10 - 1M | |
| RMCP0603 | 0.25W | 75V | 150V | 2 Amp | ± 200 ppm/°C | 1 - 9.76 | |
| | | | | | ± 100 ppm/°C | 10 - 1M | |
| RMCP0805 | 0.33W | 150V | 300V | 2.5 Amp | ± 200 ppm/°C | 1 - 9.76 | |
| | | | | | ± 100 ppm/°C | 10 - 1M | |
| RMCP1206 | 0.33W | 200V | 400V | 3.5 Amp | ± 200 ppm/°C | 1 - 9.76 | |
| | | | | | ± 100 ppm/°C | 10 - 1M | |
| RMCP1210 | 0.5W | 200V | 400V | 5 Amp | ± 200 ppm/°C | 1 - 9.76 | |
| | | | | | ± 100 ppm/°C | 10 - 1M | |
| RMCP2010 | 1W | 200V | 400V | 6 Amp | ± 200 ppm/°C | 1 - 9.76 | |
| | | | | | ± 100 ppm/°C | 10 - 1M | |
| RMCP2512 | 2W | 250V | 500V | 7 Amp | ± 200 ppm/°C | 1 - 9.76 | |
| | | | | | ± 100 ppm/°C | 10 - 1M | |

Notes: (1) Lesser of $\sqrt{P \cdot R}$ or maximum working voltage

(2) Contact factory for extended ohmic values

Mechanical Specifications



| Type / Code | Average Unit Weight (mg) | L Body Length | W Body Width | H Body Height | a Top Termination | b Bottom Termination | Unit |
|----------------------|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------|
| RMCF01005 | 0.07 | 0.016 ± 0.0008 0.40 ± 0.02 | 0.008 ± 0.0008 0.20 ± 0.02 | 0.005 ± 0.0008 0.13 ± 0.02 | 0.004 ± 0.0012 0.10 ± 0.03 | 0.004 ± 0.0012 0.10 ± 0.03 | inches mm |
| RMCF0201 RMCP0201 | 0.16 | 0.024 ± 0.0012 0.60 ± 0.03 | 0.012 ± 0.0012 0.30 ± 0.03 | 0.009 ± 0.0012 0.23 ± 0.03 | 0.006 ± 0.002 0.15 ± 0.05 | 0.006 ± 0.002 0.15 ± 0.05 | inches mm |
| RMCF0402 RMCP0402 | 0.57 0.62 | 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 | 1.88 2.04 | 0.061 ± 0.006 1.55 ± 0.15 | 0.031 ± 0.006 0.80 ± 0.15 | 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 | 5.00 4.37 | 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 | 8.86 8.95 | 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 | 15.55 15.96 | 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 | 23.56 24.24 | 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 | 40.02 39.45 | 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 |

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| Performance Characteristics | | |
|---------------------------------|---|---|
| Test | Test Specifications | Test Conditions (JIS-C 5202) |
| Short Time Overload | $\pm(2\%+0.1\Omega)$ | 2.5x rated voltage for 5 seconds |
| Dielectric Withstanding Voltage | No flashover or breakdown | 100 VAC, 1 minute |
| Resistance to Soldering Heat | $\pm 1\%$ | 260°C $\pm 5^\circ\text{C}$, for 10 seconds ± 0.5 seconds (Solder Bath) |
| Solderability | 95% coverage, minimum | 235°C $\pm 5^\circ\text{C}$, for 2 seconds ± 0.5 seconds (Colophonium flux) |
| Temperature Cycle | $\pm(1\%+0.05\Omega)$ Jumper ($<0.05\Omega$) | -65°C: 30 minutes 25°C: 2 to 3 minutes 155°C: 30 minutes 25°C: 2 to 3 minutes (5 Cycles) |
| Endurance (Damp load) | $\pm(3\%+0.1\Omega)$ Jumper ($<0.05\Omega$) | 40°C $\pm 2^\circ\text{C}$, 90% RH, Rated Load 90 minutes On, 30 minutes Off for 1,000 hours -0 hour/+48hours |
| Endurance (Rated load) | $\pm(3\%+0.1\Omega)$ Jumper ($<0.05\Omega$) | 70°C $\pm 2^\circ\text{C}$, Rated Load 90 minutes On, 30 minutes Off for 1,000 hours -0 hour/+48hours |
| Voltage Coefficient | ± 100 (ppm/V) | 1/10 rated voltage for 3 seconds max. then rated voltage for 3 seconds max. |
| Robustness of Termination | $\pm(1\%+0.05 \text{ Ohm})$ | Bend of 3mm for 5 ± 1 seconds |

Operating Temperature Range: -55°C to +125°C (01005 size)
-55°C to +155°C (all others)

Power Derating Curve:



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Recommended Pad Layout



| Type / Code | A | B | C | Unit |
|-------------|-------|-------|-------|--------|
| 01005 | 0.008 | 0.020 | 0.008 | inches |
| | 0.20 | 0.50 | 0.20 | mm |
| 0201 | 0.012 | 0.039 | 0.016 | inches |
| | 0.30 | 1.00 | 0.40 | mm |
| 0402 | 0.020 | 0.059 | 0.024 | inches |
| | 0.50 | 1.50 | 0.60 | mm |
| 0603 | 0.031 | 0.083 | 0.035 | inches |
| | 0.80 | 2.10 | 0.90 | mm |
| 0805 | 0.047 | 0.118 | 0.051 | inches |
| | 1.20 | 3.00 | 1.30 | mm |
| 1206 | 0.087 | 0.165 | 0.063 | inches |
| | 2.20 | 4.20 | 1.60 | mm |
| 1210 | 0.087 | 0.165 | 0.110 | inches |
| | 2.20 | 4.20 | 2.80 | mm |
| 2010 | 0.138 | 0.240 | 0.110 | inches |
| | 3.50 | 6.10 | 2.80 | mm |
| 2512 | 0.193 | 0.315 | 0.138 | inches |
| | 4.90 | 8.00 | 3.50 | mm |

Packaging (EIA Standard RS-481)

Packaging Specifications

Nominal dimensions:
Inches (mm)



| Reel Type / Tape | Wa | M | A | B | C | D | Unit |
|--------------------------|---------------|----------------|---------------|---------------|---------------|---------------|--------|
| 7" reel for 8mm tape | 0.354 ± 0.020 | 7.008 ± 0.079 | 0.079 ± 0.020 | 0.531 ± 0.020 | 0.827 ± 0.020 | 2.362 ± 0.039 | inches |
| | 9.00 ± 0.50 | 178.00 ± 2.00 | 2.00 ± 0.50 | 13.50 ± 0.50 | 21.00 ± 0.50 | 60.00 ± 1.00 | mm |
| 10" reel for 8mm tape | 0.394 ± 0.020 | 10.000 ± 0.079 | 0.079 ± 0.020 | 0.531 ± 0.020 | 0.827 ± 0.020 | 3.937 ± 0.039 | inches |
| | 10.00 ± 0.50 | 254.00 ± 2.00 | 2.00 ± 0.50 | 13.50 ± 0.50 | 21.00 ± 0.50 | 100.00 ± 1.00 | mm |

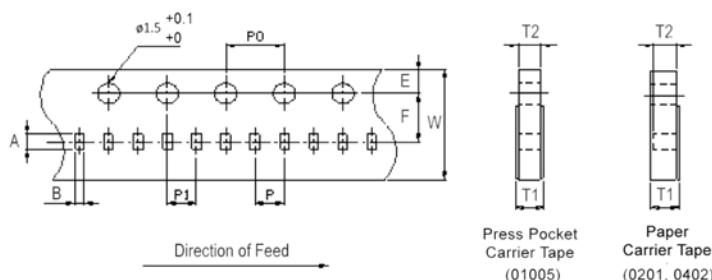
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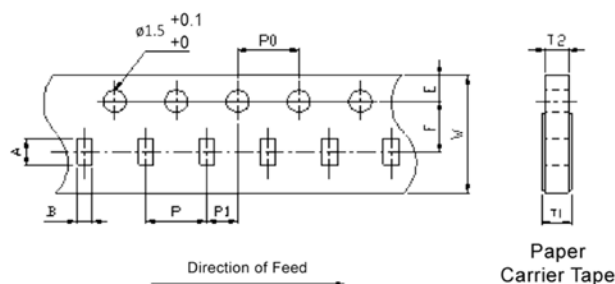
Taping Specifications - 01005, 0201, 0402



| Type | 7" Reel Quantity | Typical Full Reel Weight (g) | Tape Width | A | B | W | E | F | Unit |
|-----------|------------------|------------------------------|---------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| RMCF01005 | 20,000 | 127.3 ± 12.0 | 0.315 8.00 | 0.018 ± 0.001 0.45 ± 0.02 | 0.010 ± 0.001 0.25 ± 0.02 | 0.315 ± 0.012 8.00 ± 0.30 | 0.069 ± 0.004 1.75 ± 0.10 | 0.138 ± 0.002 3.50 ± 0.05 | inches mm |
| RMCF0201 | 10,000 | 97.2 ± 9.0 | 0.315 8.00 | 0.027 ± 0.002 0.68 ± 0.05 | 0.015 ± 0.001 0.38 ± 0.03 | 0.315 ± 0.004 8.00 ± 0.10 | 0.069 ± 0.004 1.75 ± 0.10 | 0.138 ± 0.002 3.50 ± 0.05 | inches mm |
| RMCF0402 | 10,000 | 94.5 ± 9.0 | 0.315 8.00 | 0.045 ± 0.002 1.15 ± 0.05 | 0.026 ± 0.002 0.65 ± 0.05 | 0.315 ± 0.008 8.00 ± 0.20 | 0.069 ± 0.004 1.75 ± 0.10 | 0.138 ± 0.002 3.50 ± 0.05 | inches mm |

| Type | T1 | T2 | P | P0 | P1 | Unit |
|-----------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| RMCF01005 | 0.012 ± 0.001 0.31 ± 0.03 | 0.007 ± 0.001 0.17 ± 0.03 | 0.079 ± 0.002 2.00 ± 0.05 | 0.157 ± 0.002 4.00 ± 0.05 | 0.079 ± 0.002 2.00 ± 0.05 | inches mm |
| RMCF0201 | 0.017 ± 0.004 0.42 ± 0.10 | 0.011 ± 0.001 0.28 ± 0.02 | 0.079 ± 0.002 2.00 ± 0.05 | 0.157 ± 0.002 4.00 ± 0.05 | 0.079 ± 0.002 2.00 ± 0.05 | inches mm |
| RMCF0402 | 0.016 ± 0.008 0.40 ± 0.20 | 0.016 ± 0.002 0.40 ± 0.05 | 0.079 ± 0.004 2.00 ± 0.10 | 0.157 ± 0.002 4.00 ± 0.05 | 0.079 ± 0.002 2.00 ± 0.05 | inches mm |

Taping Specifications - 0603, 0805, 1206, 1210



| Type | 7" Reel Quantity ⁽¹⁾ | Typical Full Reel Weight (g) | Tape Width | A | B | W | E | F | Unit |
|----------|---------------------------------|------------------------------|---------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| RMCF0603 | 5000 | 118.3 ± 11.0 | 0.315 8.00 | 0.071 ± 0.004 1.80 ± 0.10 | 0.039 ± 0.004 1.00 ± 0.10 | 0.315 ± 0.008 8.00 ± 0.20 | 0.069 ± 0.004 1.75 ± 0.10 | 0.138 ± 0.002 3.50 ± 0.05 | inches mm |
| RMCF0805 | 5000 | 139.2 ± 13.0 | 0.315 8.00 | 0.091 ± 0.004 2.30 ± 0.10 | 0.061 ± 0.004 1.55 ± 0.10 | 0.315 ± 0.008 8.00 ± 0.20 | 0.069 ± 0.004 1.75 ± 0.10 | 0.138 ± 0.002 3.50 ± 0.05 | inches mm |
| RMCF1206 | 5000 | 151.4 ± 15.0 | 0.315 8.00 | 0.138 ± 0.008 3.50 ± 0.20 | 0.075 ± 0.008 1.90 ± 0.20 | 0.315 ± 0.008 8.00 ± 0.20 | 0.069 ± 0.004 1.75 ± 0.10 | 0.138 ± 0.002 3.50 ± 0.05 | inches mm |
| RMCF1210 | 4000 | 175.7 ± 17.0 | 0.315 8.00 | 0.138 ± 0.008 3.50 ± 0.20 | 0.110 ± 0.008 2.80 ± 0.20 | 0.315 ± 0.008 8.00 ± 0.20 | 0.069 ± 0.004 1.75 ± 0.10 | 0.138 ± 0.002 3.50 ± 0.05 | inches mm |

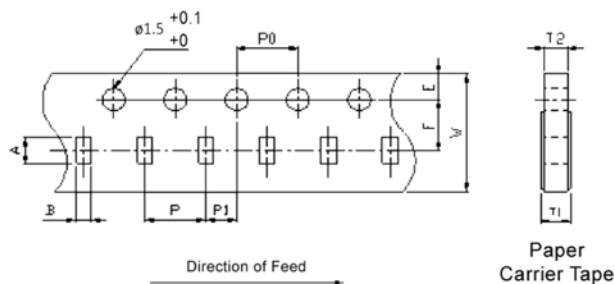
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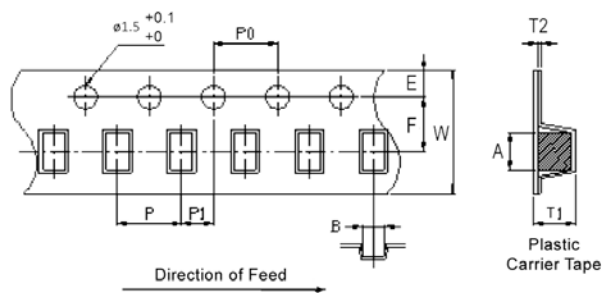
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Taping Specifications - 0603, 0805, 1206, 1210 (cont.)



| Type | T1 | T2 | P | P0 | P1 | Unit |
|----------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| RMCF0603 | 0.024 ± 0.008 0.60 ± 0.20 | 0.024 ± 0.004 0.60 ± 0.10 | 0.157 ± 0.004 4.00 ± 0.10 | 0.157 ± 0.002 4.00 ± 0.05 | 0.079 ± 0.002 2.00 ± 0.05 | inches mm |
| RMCF0805 | 0.030 ± 0.008 0.75 ± 0.20 | 0.030 ± 0.004 0.75 ± 0.10 | 0.157 ± 0.004 4.00 ± 0.10 | 0.157 ± 0.002 4.00 ± 0.05 | 0.079 ± 0.002 2.00 ± 0.05 | inches mm |
| RMCF1206 | 0.030 ± 0.008 0.75 ± 0.20 | 0.030 ± 0.004 0.75 ± 0.10 | 0.157 ± 0.004 4.00 ± 0.10 | 0.157 ± 0.002 4.00 ± 0.05 | 0.079 ± 0.002 2.00 ± 0.05 | inches mm |
| RMCF1210 | 0.030 ± 0.008 0.75 ± 0.20 | 0.030 ± 0.004 0.75 ± 0.10 | 0.157 ± 0.004 4.00 ± 0.10 | 0.157 ± 0.002 4.00 ± 0.05 | 0.079 ± 0.002 2.00 ± 0.05 | inches mm |

Taping Specifications (2010, 2512)



| Type | 7" Reel Quantity | Typical Full Reel Weight (g) | Tape Width | A | B | W | E | F | Unit |
|----------|------------------|------------------------------|----------------|------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|--------------|
| RMCF2010 | 4,000 | 183.1 ± 18.0 | 0.472 12.00 | 0.217 ± 0.008 5.50 ± 0.20 | 0.110 ± 0.008 2.80 ± 0.20 | 0.472 ± 0.008 12.00 ± 0.20 | 0.069 ± 0.004 1.75 ± 0.10 | 0.217 ± 0.002 5.50 ± 0.05 | inches mm |
| RMCF2512 | 4,000 | 255.3 ± 25.0 | 0.472 12.00 | 0.264 ± 0.008 6.70 ± 0.20 | 0.134 ± 0.008 3.40 ± 0.20 | 0.472 ± 0.008 12.00 ± 0.20 | 0.069 ± 0.004 1.75 ± 0.10 | 0.217 ± 0.002 5.50 ± 0.05 | inches mm |

| Type | T1 | T2 | P | P0 | P1 | Unit |
|----------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| RMCF2010 | 0.043 ± 0.006 1.10 ± 0.15 | 0.009 ± 0.006 0.23 ± 0.15 | 0.157 ± 0.004 4.00 ± 0.10 | 0.157 ± 0.002 4.00 ± 0.05 | 0.079 ± 0.002 2.00 ± 0.05 | inches mm |
| RMCF2512 | 0.043 ± 0.006 1.10 ± 0.15 | 0.009 ± 0.006 0.23 ± 0.15 | 0.157 ± 0.004 4.00 ± 0.10 | 0.157 ± 0.002 4.00 ± 0.05 | 0.079 ± 0.002 2.00 ± 0.05 | inches mm |

Note: Plastic carrier tape used for 2010 and 2512 sizes.

Single Pulse Power



| Size | Time (s) | | | | | Unit |
|----------|----------|-------|------|-----|-----|-------|
| | 0.0001 | 0.001 | 0.01 | 0.1 | 1 | |
| RMCF0402 | 60 | 18 | 6.3 | 2.2 | 0.7 | Watts |
| RMCF0603 | 70 | 21.5 | 7.6 | 2.8 | 1 | Watts |
| RMCF0805 | 94 | 34 | 12 | 4.4 | 1.6 | Watts |
| RMCF1206 | 120 | 43 | 15 | 5.6 | 2 | Watts |
| RMCF1210 | 240 | 86 | 31 | 11 | 4 | Watts |
| RMCF2010 | 210 | 96 | 41 | 18 | 8 | Watts |
| RMCF2512 | 800 | 300 | 110 | 42 | 16 | Watts |

The data provided are for reference only. They are typical performance for this product but are not guaranteed. The actual pulse handling of each individual resistor may vary depending on a variety of factors including resistance tolerance and resistance value. Stackpole Electronics, Inc. assumes no liability for the use of this information. Customers should validate the performance of these products in their applications. Contact Stackpole marketing to discuss specific pulse application requirements.

Temperature Measurement of Resistor Surface

Description: The resistor surface generated temperature variation after applied rated voltage.
Products and power:

| Stackpole P/N | RMCF0201 | RMCF0402 | RMCF0603 | RMCF0805 | RMCF1206 | RMCF1210 | RMCF2010 | RMCF2512 |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| R-V | 15K | 40.2K | 57.6K | 180K | 182K | 100K | 100K | 75K |
| Rated Power | 1/20W | 1/16W | 1/10W | 1/8W | 1/4W | 1/2W | 3/4W | 1W |
| Maximum Rated Voltage | 25V | 50V | 75V | 150V | 200V | 200V | 200V | 200V |

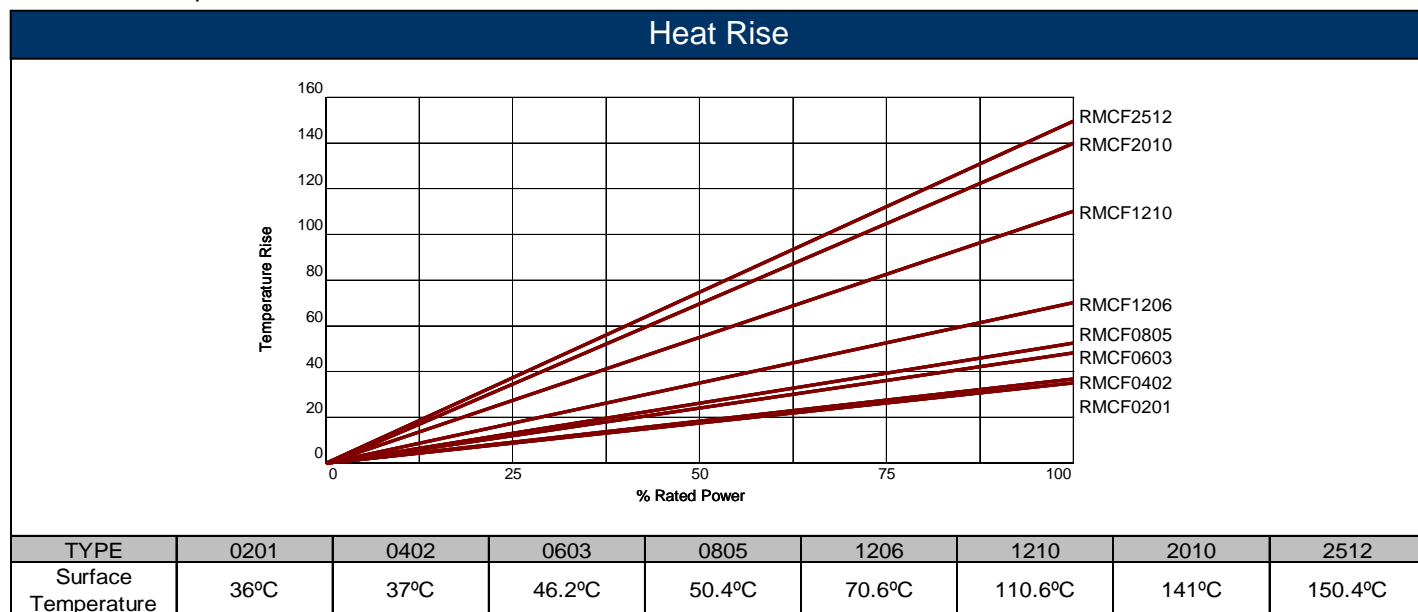
Test method: Measure component surface temperature directly after the temperature stabilizes.

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Test result: As per table below:



Part Marking Specifications



1% Marking
The nominal resistance is marked on the surface of the overcoating with the use of 4 digit markings. 0201 and 0402 are not marked.



5% Marking
The nominal resistance is marked on the surface of the overcoating with the use of 3 digit markings. 0201 and 0402 are not marked.

For shared E24/E96 values, 1% tolerance product may be marked with three digit marking instead of the standard four digit marking for all other E96 values. All E24 values available in 1% tolerance are also marked with three digit marking.

Mark Instructions for 0603 1% Chip Resistors (per EIA-J)

A two-digit number is assigned to each standard R-Value (E96) as shown in the chart below. This is followed by one alpha character which is used as a multiplier. Each letter "Y" – "F" represents a specific multiplier as follows:

| | | |
|---------|---------------|---------------|
| Y = 0.1 | B = 100 | E = 100,000 |
| X = 1 | C = 1,000 | F = 1,000,000 |
| A = 10 | D(d) = 10,000 | |

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EXAMPLE:

| Chip Marking | Explanation | Value |
|--------------|------------------------------|---------------------------|
| 01B | 01 means 10.0 and B = 100 | 10.0 x 100 = 1 K ohm |
| 25C | 25 means 17.8 and C = 1,000 | 17.8 x 1,000 = 17.8 K ohm |
| 93D | 93 means 90.9 and D = 10,000 | 90.9 x 10,000 = 909 K ohm |

| E96 | | | | | | | | | | | |
|------|----|------|----|------|----|------|----|------|----|------|----|
| 1% | # | 1% | # | 1% | # | 1% | # | 1% | # | 1% | # |
| 10.0 | 01 | 14.7 | 17 | 21.5 | 33 | 31.6 | 49 | 46.4 | 65 | 68.1 | 81 |
| 10.2 | 02 | 15.0 | 18 | 22.1 | 34 | 32.4 | 50 | 47.5 | 66 | 69.8 | 82 |
| 10.5 | 03 | 15.4 | 19 | 22.6 | 35 | 33.2 | 51 | 48.7 | 67 | 71.5 | 83 |
| 10.7 | 04 | 15.8 | 20 | 23.2 | 36 | 34.0 | 52 | 49.9 | 68 | 73.2 | 84 |
| 11.0 | 05 | 16.2 | 21 | 23.7 | 37 | 34.8 | 53 | 51.1 | 69 | 75.0 | 85 |
| 11.3 | 06 | 16.5 | 22 | 24.3 | 38 | 35.7 | 54 | 52.3 | 70 | 76.8 | 86 |
| 11.5 | 07 | 16.9 | 23 | 24.9 | 39 | 36.5 | 55 | 53.6 | 71 | 78.7 | 87 |
| 11.8 | 08 | 17.4 | 24 | 25.5 | 40 | 37.4 | 56 | 54.9 | 72 | 80.6 | 88 |
| 12.1 | 09 | 17.8 | 25 | 26.1 | 41 | 38.3 | 57 | 56.2 | 73 | 82.5 | 89 |
| 12.4 | 10 | 18.2 | 26 | 26.7 | 42 | 39.2 | 58 | 57.6 | 74 | 84.5 | 90 |
| 12.7 | 11 | 18.7 | 27 | 27.4 | 43 | 40.2 | 59 | 59.0 | 75 | 86.6 | 91 |
| 13.0 | 12 | 19.1 | 28 | 28.0 | 44 | 41.2 | 60 | 60.4 | 76 | 88.7 | 92 |
| 13.3 | 13 | 19.6 | 29 | 28.7 | 45 | 42.2 | 61 | 61.9 | 77 | 90.9 | 93 |
| 13.7 | 14 | 20.0 | 30 | 29.4 | 46 | 43.2 | 62 | 63.4 | 78 | 93.1 | 94 |
| 14.0 | 15 | 20.5 | 31 | 30.1 | 47 | 44.2 | 63 | 64.9 | 79 | 95.3 | 95 |
| 14.3 | 16 | 21.0 | 32 | 30.9 | 48 | 45.3 | 64 | 66.5 | 80 | 97.6 | 96 |

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 3). 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 as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

| 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) |
| RMCF | General Purpose Thick Film Surface Mount Chip Resistor | SMD | YES(1) | 100% Matte Sn over Ni | Jan-04 (Japan) Jan-05 (Taiwan, China) | 04/01 05/01 |
| RMCP | General Purpose High Power Thick Film Chip Resistor | SMD | YES(1) | 100% Matte Sn over Ni | Always | Always |

Note (1): RoHS Compliant by means of exemption 7c-l.

RMCF/RMCP Series

General Purpose Thick Film Standard Power and High Power Chip Resistor

Stackpole Electronics, Inc.

Resistive Product Solutions

“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 eastern 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 - 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 | | Tolerance | | Packaging | | | Resistance Value | | |
|----------------|---------------------------|-------|--------------|-----------|--------|-----------|------|------------------------|------------------|----------|---|
| Code | Description | Size | Power Rating | Code | Tol | Value | Code | Description | Size | Quantity | |
| RMCF | Thick Film Chip Resistors | 01005 | 0.03W | F | 1% | E96, E24 | T | 7" Reel - Paper Tape | 01005 | 20,000 | 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 |
| | | 0201 | 0.05W | J | 5% | E24 | | | 0201, 0402 | 10,000 | |
| | | 0402 | 0.063W | Z | Jumper | | | | 0603, 0805, 1206 | 5,000 | |
| | | 0603 | 0.1W | | | | | | 1210 | 4,000 | |
| | | 0805 | 0.125W | | | | | 7" Reel - Plastic Tape | 2010, 2512 | 4,000 | |
| | | 1206 | 0.25W | | | | G | 10" Reel - Paper Tape | 0603, 0805, 1206 | 10,000 | |
| | | 1210 | 0.33W(*) | | | | | | | | |
| | | 2010 | 0.75W | | | | | | | | |
| | | 2512 | 1W | | | | | | | | |

(*) Power rating is 0.5W for Ohmic values below 1KΩ

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 | | Tolerance | | Packaging | | | Resistance Value | | |
|----------------|-------------|------|--------------|-----------|--------|-----------|------|---------------------|------------------|----------|--|
| Code | Description | Size | Power Rating | Code | Tol | Value | Code | Description | Size | Quantity | |
| RMCP | High Power | 0201 | 0.063W | F | 1% | E96, E24 | T | 7" Reel Paper Tape | 0201, 0402 | 10,000 | Four characters with the multiplier used as the decimal holder. 1 ohm = 1R00 10 Kohm = 10K0 1 Mohm = 1M00 |
| | | 0402 | 0.125W | J | 5% | E24 | | | 0603, 0805 | 5,000 | |
| | | 0603 | 0.25W | Z | Jumper | | | | 1206, 1210 | 5,000 | |
| | | 0805 | 0.33W | | | | | | 2010, 2512 | 4,000 | |
| | | 1206 | 0.33W | | | | G | 10" Reel Paper Tape | 0603, 0805 | 10,000 | |
| | | 1210 | 0.5W | | | | | | 1206, 1210 | 10,000 | |
| | | 2010 | 1W | | | | | | 2010 | 8,000 | |
| | | 2512 | 2W | | | | | | | | |