

- 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<br>± 300 ppm/°C                                 | 1 - 24.9<br>25 - 10M                                 | 1 - 24.9<br>25 - 10M                      |
| RMCF 1/16S                | 0402         | 0.063W                      | 50V                         | 100V                     | 1 Amp           | ± 500 ppm/°C<br>± 200 ppm/°C<br>± 100 ppm/°C                 | 1 - 9.76<br>10 - 97.6<br>100 - 1M                    | 1 - 9.1<br>10 - 91<br>100 - 1M            |
| RMCF 1/16                 | 0603         | 0.1W                        | 50V                         | 100V                     | 1 Amp           | ± 600 ppm/°C<br>± 200 ppm/°C<br>± 100 ppm/°C<br>± 200 ppm/°C | 0.1 - 0.499<br>0.5 - 32.4<br>33.2 - 1M<br>1.1M - 10M | 0.1 - 0.499<br>0.5 - 20M<br>-<br>-        |
| RMCF 1/10                 | 0805         | 0.125W                      | 150V                        | 300V                     | 2 Amp           | ± 500 ppm/°C<br>± 200 ppm/°C<br>± 100 ppm/°C<br>± 200 ppm/°C | 0.1 - 0.976<br>1 - 32.4<br>33.2 - 1M<br>1.1M - 22.1M | 0.1 - 0.910<br>1 - 22M<br>-<br>-          |
| RMCF 1/8                  | 1206         | 0.25W                       | 200V                        | 400V                     | 2 Amp           | ± 500 ppm/°C<br>± 200 ppm/°C<br>± 100 ppm/°C<br>± 200 ppm/°C | 0.1 - 0.976<br>1 - 32.4<br>33.2 - 1M<br>1.1M - 10M   | 0.1 - 0.910<br>1 - 22M<br>-<br>-          |
| RMCF 1/4                  | 1210         | 0.33W(3)                    | 200V                        | 400V                     | 3 Amp           | ± 400 ppm/°C<br>± 200 ppm/°C<br>± 100 ppm/°C<br>± 200 ppm/°C | 0.1 - 9.76<br>10 - 32.4<br>33.2 - 1M<br>1.1M - 10M   | 0.1 - 9.1<br>-<br>-<br>10 - 20M           |
| RMCF 1/2                  | 2010         | 0.75W(3)                    | 200V                        | 400V                     | 3 Amp           | ± 500 ppm/°C<br>± 400 ppm/°C<br>± 200 ppm/°C<br>± 100 ppm/°C | 0.1 - 0.499<br>0.5 - 9.76<br>-<br>10 - 10M           | 0.1 - 0.499<br>0.5 - 9.1<br>10 - 10M<br>- |
| RMCF 1                    | 2512         | 1W                          | 200V                        | 400V                     | 3 Amp           | ± 500 ppm/°C<br>± 400 ppm/°C<br>± 200 ppm/°C<br>± 100 ppm/°C | 0.1 - 0.499<br>0.5 - 9.76<br>-<br>10 - 10M           | 0.1 - 0.499<br>0.5 - 9.1<br>10 - 10M<br>- |

(1) Lesser of √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<br>Body Length             | W<br>Body Width                                 | H<br>Body Height             | a<br>Top Termination         | b<br>Bottom Termination      | Units        |
| RMCF 1/20                 | 0.024 ± 0.001<br>0.60 ± 0.03 | 0.011 ± 0.001<br>0.30 ± 0.03                    | 0.010 ± 0.002<br>0.25 ± 0.05 | 0.005 ± 0.01<br>0.12 ± 0.3   | 0.006 ± 0.002<br>0.15 ± 0.05 | inches<br>mm |
| RMCF 1/16S                | 0.039 ± 0.004<br>1.00 ± 0.10 | 0.020 ± 0.002<br>0.50 ± 0.05                    | 0.011 ± 0.004<br>0.30 ± 0.10 | 0.008 ± 0.004<br>0.20 ± 0.10 | 0.010 ± 0.004<br>0.25 ± 0.10 | inches<br>mm |
| RMCF 1/16                 | 0.061 ± 0.006<br>1.55 ± 0.15 | 0.031 + 0.006 / - 0.004<br>0.80 + 0.15 / - 0.10 | 0.018 ± 0.004<br>0.45 ± 0.10 | 0.012 ± 0.008<br>0.30 ± 0.20 | 0.012 ± 0.008<br>0.30 ± 0.20 | inches<br>mm |
| RMCF 1/10                 | 0.079 ± 0.008<br>2.00 ± 0.20 | 0.049 ± 0.004<br>1.25 ± 0.10                    | 0.020 ± 0.006<br>0.50 ± 0.15 | 0.014 ± 0.010<br>0.35 ± 0.25 | 0.014 ± 0.010<br>0.35 ± 0.25 | inches<br>mm |
| RMCF 1/8                  | 0.126 ± 0.008<br>3.20 ± 0.20 | 0.063 ± 0.006<br>1.60 ± 0.15                    | 0.021 ± 0.006<br>0.55 ± 0.15 | 0.020 ± 0.012<br>0.50 ± 0.30 | 0.020 ± 0.012<br>0.50 ± 0.30 | inches<br>mm |
| RMCF 1/4                  | 0.126 ± 0.010<br>3.20 ± 0.25 | 0.098 ± 0.008<br>2.50 ± 0.20                    | 0.021 ± 0.006<br>0.55 ± 0.15 | 0.020 ± 0.012<br>0.50 ± 0.30 | 0.020 ± 0.012<br>0.50 ± 0.30 | inches<br>mm |
| RMCF 1/2                  | 0.197 ± 0.008<br>5.00 ± 0.20 | 0.098 ± 0.008<br>2.5 ± 0.20                     | 0.021 ± 0.006<br>0.55 ± 0.15 | 0.024 ± 0.012<br>0.60 ± 0.30 | 0.024 ± 0.014<br>0.60 ± 0.35 | inches<br>mm |
| RMCF 1                    | 0.248 ± 0.008<br>6.30 ± 0.20 | 0.126 ± 0.008<br>3.20 ± 0.20                    | 0.021 ± 0.006<br>0.55 ± 0.15 | 0.024 ± 0.012<br>0.60 ± 0.30 | 0.024 ± 0.014<br>0.60 ± 0.35 | inches<br>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.<br>155°C: 30 min. 25°C: 2 to 3 min.<br>(5 Cycles)      | ±(1% + 0.05Ω)<br>Jumper (<0.05Ω) |
| Endurance (Damp load)           | 40°C ± 2°C, 90% RH, Rated Load<br>90 min. On, 30 min. Off for 1,000 hrs. -0hrs./+48hrs. | ±(3% + 0.1Ω)<br>Jumper (<0.05Ω)  |
| Endurance (Rated load)          | 70°C ± 2°C, Rated Load<br>90 min. On, 30 min. Off for 1,000 hrs. -0hrs./+48hrs.         | ±(3% + 0.1Ω)<br>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  |                        |      |
|          |             | 1/16  | 0.1W    | 0603 |                    |           |          | 1/16, 1/10, 1/8 | 10,000  | 10" reel - paper tape  | G    |
|          |             | 1/10  | 0.125W  | 0805 |                    |           |          |                 | 5,000   | 7" reel - paper tape   | R    |
|          |             | 1/8   | 0.25W   | 1206 |                    |           |          |                 | 1,000   | bulk                   | A    |
|          |             | 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 3<sup>rd</sup>, 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%  |           |                        | 0402             | 10,000   | 4.70 ohm = 4R70   |    |    |    |
|                |                           | 0805 | 0.125W |           |     |           | 7" reel - plastic tape | 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     |           |     |           |                        |                  |          |   |    |    |    |