

# RMCS0805FT511R Datasheet

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|                              |  |
|------------------------------|--|
| DiGi Electronics Part Number | RMCS0805FT511R-DG  |
| Manufacturer                 | <a href="#">Stackpole Electronics Inc</a>  |
| Manufacturer Product Number  | RMCS0805FT511R   |
| Description                  | RES 511 OHM 1% 1/8W 0805   |
| Detailed Description         | 511 Ohms $\pm$ 1% 0.125W, 1/8W Chip Resistor 0805 (2012 Metric) Anti-Sulfur Thick Film |

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## Purchase and inquiry

Manufacturer Product Number:

RMCS0805FT511R

Series:

RMCS

Resistance:

511 Ohms

Power (Watts):

0.125W, 1/8W

Features:

Anti-Sulfur

Operating Temperature:

-55°C ~ 155°C

Supplier Device Package:

0805

Height - Seated (Max):

0.024" (0.60mm)

Failure Rate:

-

Manufacturer:

Stackpole Electronics Inc

Product Status:

Active

Tolerance:

±1%

Composition:

Thick Film

Temperature Coefficient:

±100ppm/°C

Package / Case:

0805 (2012 Metric)

Size / Dimension:

0.079" L x 0.049" W (2.00mm x 1.25mm)

Number of Terminations:

2

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8533.21.0030

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

# RMCS Series

## Sulfur Resistant Thick Film Chip Resistor

Stackpole Electronics, Inc.  
Resistive Product Solutions

### Features:

- Inner terminations engineered to deter sulfur contamination
- Non-standard resistance values available
- Zero ohm available (max. resistance 0.05Ω)
- “-HP” denotes high power
- RoHS compliant, REACH compliant, and halogen free



| Electrical Specifications |                         |  |   |                            |              |                               |         |    |
|---------------------------|-------------------------|--|---|----------------------------|--------------|-------------------------------|---------|----|
| Type/Code                 | Power Rating (W) @ 70°C | Maximum Working Voltage (V) <sup>(1)</sup> | Maximum Overload Voltage (V) <sup>(2)</sup> | Maximum Current Jumper (A) | TCR (ppm/°C) | Ohmic Range (Ω) and Tolerance |         |    |
|                           |                         |  |   |                            |              | 0.5%                          | 1%      | 5% |
| RMCS0201                  | 0.05                    | 25   | 50  | 1                          | ±200         | -                             | 1 - 10M |    |
| RMCS0402                  | 0.063                   | 50   | 100   | 1                          | ±200         | 1 - 9.76                      |         |    |
|                           |                         |  |   |                            | ±100         | 10 - 1M                       |         |    |
|                           |                         |  |   |                            | ±200         | 1.02M - 10M                   |         |    |
| RMCS0603                  | 0.1                     | 75   | 150   | 1                          | ±200         | 1 - 9.76                      |         |    |
|                           |                         |  |   |                            | ±100         | 10 - 1M                       |         |    |
|                           |                         |  |   |                            | ±200         | 1.02M - 10M                   |         |    |
| RMCS0805                  | 0.125                   | 150  | 300   | 2                          | ±200         | 1 - 9.76                      |         |    |
|                           |                         |  |   |                            | ±100         | 10 - 1M                       |         |    |
|                           |                         |  |   |                            | ±200         | 1.02M - 10M                   |         |    |
| RMCS1206                  | 0.25                    | 200  | 400   | 2                          | ±200         | 1 - 9.76                      |         |    |
|                           |                         |  |   |                            | ±100         | 10 - 1M                       |         |    |
|                           |                         |  |   |                            | ±200         | 1.02M - 10M                   |         |    |
| RMCS1210                  | 0.33                    | 200  | 400   | 2.5                        | ±200         | 1 - 9.76                      |         |    |
|                           |                         |  |   |                            | ±100         | 10 - 1M                       |         |    |
|                           |                         |  |   |                            | ±200         | 1.02M - 10M                   |         |    |
| RMCS2010                  | 0.75                    | 200  | 400   | 3.5                        | ±200         | 1 - 9.76                      |         |    |
|                           |                         |  |   |                            | ±100         | 10 - 1M                       |         |    |
|                           |                         |  |   |                            | ±200         | 1.02M - 10M                   |         |    |
| RMCS2512                  | 1                       | 250  | 500   | 4                          | ±200         | 1 - 9.76                      |         |    |
|                           |                         |  |   |                            | ±100         | 10 - 1M                       |         |    |
|                           |                         |  |   |                            | ±200         | 1.02M - 10M                   |         |    |

(1) Lesser of  $\sqrt{P \cdot R}$  or maximum working voltage, whichever is lower.

(2)  $2.5 \cdot \sqrt{P \cdot R}$  or Max. Overload Voltage listed above, whichever is lower.

| Electrical Specifications – High Power |                         |  |   |              |                               |          |  |
|--|-------------------------|--|---|--------------|-------------------------------|----------|--|
| Type/Code                              | Power Rating (W) @ 70°C | Maximum Working Voltage (V) <sup>(1)</sup> | Maximum Overload Voltage (V) <sup>(2)</sup> | TCR (ppm/°C) | Ohmic Range (Ω) and Tolerance |          |  |
|  |                         |  |   |              | 0.5% <sup>(3)</sup>           | 1%, 5%   |  |
| RMCS0201-HP                            | 0.083                   | 25   | 50  | ±200         | -                             | 10 - 1M  |  |
| RMCS0402-HP                            | 0.1                     | 50   | 100   | ±200         | -                             | 1 - 9.76 |  |
|  |                         |  |   | ±100         | 10 - 1M                       | 10 - 1M  |  |
| RMCS0603-HP                            | 0.25                    | 75   | 150   | ±200         | -                             | 1 - 9.76 |  |
|  |                         |  |   | ±100         | 10 - 1M                       | 10 - 1M  |  |
| RMCS0805-HP                            | 0.33                    | 150  | 300   | ±200         | -                             | 1 - 9.76 |  |
|  |                         |  |   | ±100         | 10 - 1M                       | 10 - 1M  |  |
| RMCS1206-HP                            | 0.5                     | 200  | 400   | ±200         | -                             | 1 - 9.76 |  |
|  |                         |  |   | ±100         | 10 - 1M                       | 10 - 1M  |  |
| RMCS1210-HP                            | 0.75                    | 200  | 400   | ±200         | -                             | 1 - 9.76 |  |
|  |                         |  |   | ±100         | 10 - 1M                       | 10 - 1M  |  |
| RMCS2010-HP                            | 1                       | 200  | 400   | ±200         | -                             | 1 - 9.76 |  |
|  |                         |  |   | ±100         | 10 - 1M                       | 10 - 1M  |  |
| RMCS2512-HP                            | 2                       | 200  | 400   | ±400         | -                             | 1 - 9.76 |  |
|  |                         |  |   | ±100         | 10 - 1M                       | 10 - 10M |  |

(1) Lesser of  $\sqrt{P \cdot R}$  or maximum working voltage, whichever is lower.

(2)  $2.5 \cdot \sqrt{P \cdot R}$  or Max. Overload Voltage listed above, whichever is lower.

(3) 0.5% tolerance for 0603 and 0805 requires lower power rating. Contact Stackpole for details.

**Mechanical Specifications**



| Type/Code   | Typical Unit Wt. (mg) | L<br>Body Length             | W<br>Body Width              | H<br>Body Height             | a<br>Top Termination         | b<br>Bottom Termination      | Unit         |
|-------------|-----------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| RMCS0201    | 0.15                  | 0.024 ± 0.001<br>0.60 ± 0.03 | 0.012 ± 0.001<br>0.30 ± 0.03 | 0.009 ± 0.001<br>0.23 ± 0.03 | 0.006 ± 0.002<br>0.15 ± 0.05 | 0.006 ± 0.002<br>0.15 ± 0.05 | inches<br>mm |
| RMCS0402    | 0.62                  | 0.039 ± 0.006<br>1.00 ± 0.15 | 0.020 ± 0.002<br>0.50 ± 0.05 | 0.014 ± 0.004<br>0.35 ± 0.10 | 0.008 ± 0.006<br>0.20 ± 0.15 | 0.008 ± 0.006<br>0.20 ± 0.15 | inches<br>mm |
| RMCS0603    | 2.0                   | 0.063 ± 0.008<br>1.60 ± 0.20 | 0.031 ± 0.004<br>0.80 ± 0.10 | 0.018 ± 0.006<br>0.45 ± 0.15 | 0.012 ± 0.008<br>0.30 ± 0.20 | 0.012 ± 0.008<br>0.30 ± 0.20 | inches<br>mm |
| RMCS0805    | 4.4                   | 0.079 ± 0.008<br>2.00 ± 0.20 | 0.049 ± 0.006<br>1.25 ± 0.15 | 0.020 ± 0.006<br>0.50 ± 0.15 | 0.014 ± 0.008<br>0.35 ± 0.20 | 0.016 ± 0.008<br>0.40 ± 0.20 | inches<br>mm |
| RMCS1206    | 8.9                   | 0.122 ± 0.006<br>3.10 ± 0.15 | 0.061 ± 0.010<br>1.55 ± 0.25 | 0.022 ± 0.006<br>0.55 ± 0.15 | 0.020 ± 0.012<br>0.50 ± 0.30 | 0.020 ± 0.008<br>0.50 ± 0.20 | inches<br>mm |
| RMCS1210    | 16.0                  | 0.122 ± 0.006<br>3.10 ± 0.15 | 0.102 ± 0.012<br>2.60 ± 0.30 | 0.022 ± 0.006<br>0.55 ± 0.15 | 0.020 ± 0.010<br>0.50 ± 0.25 | 0.020 ± 0.008<br>0.50 ± 0.20 | inches<br>mm |
| RMCS2010    | 24.2                  | 0.197 ± 0.008<br>5.00 ± 0.20 | 0.098 ± 0.008<br>2.50 ± 0.20 | 0.022 ± 0.004<br>0.55 ± 0.10 | 0.024 ± 0.010<br>0.60 ± 0.25 | 0.020 ± 0.012<br>0.50 ± 0.30 | inches<br>mm |
| RMCS2512    | 39.4                  | 0.248 ± 0.008<br>6.30 ± 0.20 | 0.124 ± 0.008<br>3.15 ± 0.20 | 0.022 ± 0.006<br>0.55 ± 0.15 | 0.024 ± 0.010<br>0.60 ± 0.25 | 0.022 ± 0.010<br>0.55 ± 0.25 | inches<br>mm |
| RMCS2512-HP | 39.4                  | 0.248 ± 0.008<br>6.30 ± 0.20 | 0.126 ± 0.008<br>3.20 ± 0.20 | 0.024 ± 0.008<br>0.60 ± 0.20 | 0.024 ± 0.012<br>0.60 ± 0.30 | 0.024 ± 0.012<br>0.60 ± 0.30 | inches<br>mm |

**Performance Characteristics**

| Test                         | Test Method                               | Test Specification   |                  |         | Test Condition  |
|------------------------------|---|--|------------------|---------|---|
|                              |   | ±1% and below  | ±5%              | Jumper  |   |
| Short Time Overload          | JIS-C-5201-1 4.13<br>IEC-60115-1 4.13     | ± (1% + 0.05Ω)   | ± (2% + 0.05Ω)   | < 50mΩ  | RCWV*2.5 or Max. Overload Voltage whichever is lower for 5 seconds,<br>2 seconds for high power series. |
| Insulation Resistance        | JIS-C-5201-1 4.6<br>IEC-60115-1 4.6       | ≥10G   |                  |         | Max. Overload Voltage for 1 minute  |
| Endurance                    | JIS-C-5201-1 4.25<br>IEC-60115-1 4.25.1   | ± (2% + 0.1Ω)  | ± (3% + 0.1Ω)    | < 100mΩ | 70 ± 2°C, RCWV for 1000 hours with<br>1.5 hours "ON" and 0.5 hour "OFF"                                 |
| Damp Heat with Load          | JIS-C-5201-1 4.24<br>IEC-60115-1 4.24     | ± (2% + 0.1Ω)  | ± (3% + 0.1Ω)    | < 100mΩ | 40 ± 2°C, 90~95% R.H., RCWV for 1000 hours<br>with 1.5 hours "ON" and 0.5 hour "OFF"                    |
| Dry Heat                     | JIS-C-5201-1 4.23<br>IEC-60115-1 4.23.2   | ± (1% + 0.05Ω)   | ± (1.5% + 0.1Ω)  | < 50mΩ  | At +125/+155°C for 1000 hours   |
| Bending Strength             | JIS-C-5201-1 4.33<br>IEC-60115-1 4.33     | ± (1% + 0.05Ω)   | ± (1% + 0.05Ω)   | < 50mΩ  | Bending once for 5 seconds<br>2010, 2512 sizes: 2 mm / Other sizes: 3 mm                                |
| Solderability                | JIS-C-5201-1 4.17<br>IEC-60115-1 4.17     | 95% minimum coverage                                       |                  |         | 245 ± 5°C for 3 seconds   |
| Resistance to Soldering Heat | JIS-C-5201-1 4.18<br>IEC-60115-1 4.18     | ± (0.5% + 0.05Ω)   | ± (1% + 0.05Ω)   | < 50mΩ  | 260 ± 5°C for 10 seconds  |
| Voltage Proof                | JIS-C-5201-1 4.7<br>IEC-60115-1 4.7       | No breakdown or flashover                                  |                  |         | 1.42 times Max. Operating Voltage for 1 minute  |
| Leaching                     | JIS-C-5201-1 4.18<br>IEC-60068-2-58 8.2.1 | Individual leaching area ≤ 5%<br>Total leaching area ≤ 10% |                  |         | 260 ± 5°C for 30 seconds  |
| Rapid change of Temperature  | JIS-C-5201-1 4.19<br>IEC-60115-1 4.19     | ± (0.5% + 0.05Ω)   | ± (1% + 0.05Ω)   | < 50mΩ  | -55 to +125°C/+155°C, 5 cycles  |
| Sulfur Test                  | ASTM-B-809-95                             | ± (0.5% + 0.05Ω)   | ± (0.5% + 0.05Ω) | < 50mΩ  | H2S, 50 ± 2°C, 91~93% R.H.,<br>no power rating for 1000 hours   |

RCWV (Rated Continuous Working Voltage) = √(P\*R) or Max. Operating Voltage, whichever is lower.  
Recommended storage temperature: 15 ~ 28°C. Humidity < 80% R.H.  
Operating temperature range is -55 to +155°C

**RMCS Series**  
Sulfur Resistant Thick Film Chip Resistor

**Stackpole Electronics, Inc.**  
Resistive Product Solutions

Power Derating Curve:



**Packaging Specifications – Paper Tape**



| Type/Code | L                            | M                            | W                            | E                                    | F                            | Unit         |
|-----------|------------------------------|------------------------------|------------------------------|--------------------------------------|------------------------------|--------------|
| RMCS0201  | 0.015 ± 0.002<br>0.38 ± 0.05 | 0.027 ± 0.002<br>0.68 ± 0.05 | 0.315 ± 0.008<br>8.00 ± 0.20 | 0.069 ± 0.004<br>1.75 ± 0.10         | 0.138 ± 0.002<br>3.50 ± 0.05 | inches<br>mm |
| RMCS0402  | 0.026 ± 0.006<br>0.65 ± 0.15 | 0.045 ± 0.006<br>1.15 ± 0.15 | 0.315 ± 0.008<br>8.00 ± 0.20 | 0.069 ± 0.004<br>1.75 ± 0.10         | 0.138 ± 0.002<br>3.50 ± 0.05 | inches<br>mm |
| RMCS0603  | 0.043 ± 0.010<br>1.10 ± 0.25 | 0.075 ± 0.010<br>1.90 ± 0.25 | 0.315 ± 0.008<br>8.00 ± 0.20 | 0.069 ± 0.004<br>1.75 ± 0.10         | 0.138 ± 0.002<br>3.50 ± 0.05 | inches<br>mm |
| RMCS0805  | 0.063 ± 0.010<br>1.60 ± 0.25 | 0.094 ± 0.010<br>2.40 ± 0.25 | 0.315 ± 0.008<br>8.00 ± 0.20 | 0.069 ± 0.004<br>1.75 ± 0.10         | 0.138 ± 0.002<br>3.50 ± 0.05 | inches<br>mm |
| RMCS1206  | 0.075 ± 0.008<br>1.90 ± 0.20 | 0.138 ± 0.008<br>3.50 ± 0.20 | 0.315 ± 0.008<br>8.00 ± 0.20 | 0.069 ± 0.004<br>1.75 ± 0.10         | 0.138 ± 0.002<br>3.50 ± 0.05 | inches<br>mm |
| RMCS1210  | 0.110 ± 0.010<br>2.80 ± 0.25 | 0.138 ± 0.008<br>3.50 ± 0.20 | 0.315 ± 0.008<br>8.00 ± 0.20 | 0.069 ± 0.004<br>1.75 ± 0.10         | 0.138 ± 0.002<br>3.50 ± 0.05 | inches<br>mm |
| Type/Code | P <sub>0</sub>               | P <sub>1</sub>               | P <sub>2</sub>               | ØD <sub>0</sub>                      | K1                           | Unit         |
| RMCS0201  | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.059 +0.004 / -0<br>1.50 +0.10 / -0 | 0.017 ± 0.008<br>0.42 ± 0.20 | inches<br>mm |
| RMCS0402  | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.059 +0.004 / -0<br>1.50 +0.10 / -0 | 0.018 ± 0.008<br>0.45 ± 0.20 | inches<br>mm |
| RMCS0603  | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.059 +0.004 / -0<br>1.50 +0.10 / -0 | 0.028 ± 0.008<br>0.70 ± 0.20 | inches<br>mm |
| RMCS0805  | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.059 +0.004 / -0<br>1.50 +0.10 / -0 | 0.033 ± 0.008<br>0.85 ± 0.20 | inches<br>mm |
| RMCS1206  | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.059 +0.004 / -0<br>1.50 +0.10 / -0 | 0.033 ± 0.008<br>0.85 ± 0.20 | inches<br>mm |
| RMCS1210  | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.059 +0.004 / -0<br>1.50 +0.10 / -0 | 0.030 ± 0.008<br>0.75 ± 0.20 | inches<br>mm |

**Packaging Specifications – Plastic Tape**



| Type/Code | L             | M             | W             | E                 | F             | Unit   |
|-----------|---------------|---------------|---------------|-------------------|---------------|--------|
| RMCS2010  | 0.110 ± 0.008 | 0.217 ± 0.008 | 0.472 ± 0.012 | 0.069 ± 0.004     | 0.217 ± 0.002 | inches |
|           | 2.80 ± 0.20   | 5.50 ± 0.20   | 12.00 ± 0.30  | 1.75 ± 0.10       | 5.50 ± 0.05   | mm     |
| RMCS2512  | 0.138 ± 0.008 | 0.264 ± 0.008 | 0.472 ± 0.012 | 0.069 ± 0.004     | 0.217 ± 0.002 | inches |
|           | 3.50 ± 0.20   | 6.70 ± 0.20   | 12.00 ± 0.30  | 1.75 ± 0.10       | 5.50 ± 0.05   | mm     |
| Type/Code | P0            | P1            | P2            | ∅D0               | K2            | Unit   |
| RMCS2010  | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.059 +0.004 / -0 | 0.047 - 0     | inches |
|           | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 1.50 +0.10 / -0   | 1.20 - 0      | mm     |
| RMCS2512  | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.059 +0.004 / -0 | 0.047 - 0     | inches |
|           | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 1.50 +0.10 / -0   | 1.20 - 0      | mm     |

**Recommended Pad Layout**



| Type/Code | a     | b     | c     | Unit   |
|-----------|-------|-------|-------|--------|
| RMCS0201  | 0.012 | 0.010 | 0.012 | inches |
|           | 0.30  | 0.25  | 0.30  | mm     |
| RMCS0402  | 0.024 | 0.020 | 0.028 | inches |
|           | 0.60  | 0.50  | 0.70  | mm     |
| RMCS0603  | 0.035 | 0.031 | 0.039 | inches |
|           | 0.90  | 0.80  | 1.00  | mm     |
| RMCS0805  | 0.051 | 0.031 | 0.055 | inches |
|           | 1.30  | 0.80  | 1.40  | mm     |
| RMCS1206  | 0.087 | 0.039 | 0.067 | inches |
|           | 2.20  | 1.00  | 1.70  | mm     |
| RMCS1210  | 0.079 | 0.035 | 0.110 | inches |
|           | 2.00  | 0.90  | 2.80  | mm     |
| RMCS2010  | 0.150 | 0.035 | 0.110 | inches |
|           | 3.80  | 0.90  | 2.80  | mm     |
| RMCS2512  | 0.193 | 0.063 | 0.138 | inches |
|           | 4.90  | 1.60  | 3.50  | mm     |

### Recommended Solder Profile

This information is intended as a reference for solder profiles for Stackpole resistive components. These profiles should be compatible with most soldering processes. These are only recommendations. Actual numbers will depend on board density, geometry, packages used, etc., especially those cells labeled with “\*”.

### 100% Matte Tin / RoHS Compliant Terminations

Soldering iron recommended temperatures: 330 to 350°C with minimum duration.  
Maximum number of reflow cycles: 3.

| Wave Soldering     |            |             |            |
|--------------------|------------|-------------|------------|
| Description        | Maximum    | Recommended | Minimum    |
| Preheat Time       | 80 seconds | 70 seconds  | 60 seconds |
| Temperature Diff.  | 140°C      | 120°C       | 100°C      |
| Solder Temp.       | 260°C      | 250°C       | 240°C      |
| Dwell Time at Max. | 10 seconds | 5 seconds   | *          |
| Ramp DN (°C/sec)   | N/A        | N/A         | N/A        |

Temperature Diff. = Difference between final preheat stage and soldering stage.

| Convection IR Reflow |             |             |            |
|----------------------|-------------|-------------|------------|
| Description          | Maximum     | Recommended | Minimum    |
| Ramp Up (°C/sec)     | 3°C/sec     | 2°C/sec     | *          |
| Dwell Time > 217°C   | 150 seconds | 90 seconds  | 60 seconds |
| Solder Temp.         | 260°C       | 245°C       | *          |
| Dwell Time at Max.   | 30 seconds  | 15 seconds  | 10 seconds |
| Ramp DN (°C/sec)     | 6°C/sec     | 3°C/sec     | *          |



**Part Marking Instructions**

**E96 and E24 Values for 0805-2512 (1% tolerances)**

The nominal resistance is marked on the surface of the overcoating with the use of **four character markings**.

- 1. Values <100Ω will use "R" as the decimal holder.



1.21Ω



100Ω

**E24 Values for 0805-2512 (5% tolerance)**

The nominal resistance is marked on the surface of the overcoating with the use of **three character markings**.

- 1. Values between 1Ω and 9.1Ω will use "R" as the decimal holder.



1Ω



1.2 KΩ

**E24 Values for 0603 (5% tolerance)**

The nominal resistance is marked on the surface of the overcoating with the use of **three character markings**.

- 1. Values between 1Ω and 9.1Ω will use "R" as the decimal holder.
- 2. Values ≥10Ω will use no decimal holder.



6.8Ω



10Ω

**E96 Values for 0603 size (1% tolerances)**

A two character 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 from "Y" - "F" represents a specific multiplier.



10.5Ω

| Alpha Character = Multiplier |             |
|------------------------------|-------------|
| Y = 0.1                      | C = 1000    |
| X = 1                        | D = 10000   |
| A = 10                       | E = 100000  |
| B = 100                      | F = 1000000 |

| Chip Marking | Value                 |
|--------------|-----------------------|
| 01B =        | 10.0 x 100 = 1 KΩ     |
| 25C =        | 17.8 x 1000 = 17.8 KΩ |
| 93D =        | 90.9 x 10000 = 909 KΩ |

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

Note: 0201, and 0402 sizes are unmarked.

# RMCS Series

## Sulfur Resistant Thick Film Chip Resistor

Stackpole Electronics, Inc.  
Resistive Product Solutions

### 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) |
| RMCS                    | Sulfur Resistant Thick Film Chip Resistor | SMD                        | YES(1)                         | 100% Matte Sn over Ni             | Always   | Always                                |

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

### “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

|                |                  |                  |       |           |      |        |           |      |                      |                  |            |   |                 |                  |             |            |
|----------------|------------------|------------------|-------|-----------|------|--------|-----------|------|----------------------|------------------|------------|---|-----------------|------------------|-------------|------------|
| R              | M                | C                | S     | 0         | 6    | 0      | 3         | J    | T                    | 4                | K          | 7   | 0               | -                | H           | P          |
| Product Series |                  | Power Rating (W) |       | Tolerance |      |        | Packaging |      |                      | Resistance Value |            |   | Special         |                  |             |            |
| RMCS           | Sulfur Resistant | Size             | RMCS  | -HP       | Code | Tol    | Value     | Code | Description          | Size             | Quantity   | Four characters with the multiplier used as the decimal holder. |                 | Code             | Description |            |
|                |                  | 0201             | 0.05  | 0.083     | D    | 0.5%   | E96       | T    | 7" Reel Paper Tape   | 0201, 0402       | 10000      | 1 ohm = 1R00  |                 | blank            | Standard    |            |
|                |                  | 0402             | 0.063 | 0.1       | F    | 1%     | E96, E24  |      |                      | 0603, 0805       | 1206, 1210 | 5000  | 100 Kohm = 100K |                  | -HP         | High Power |
|                |                  | 0603             | 0.1   | 0.25      | J    | 5%     | E24       |      | 7" Reel Plastic Tape | 2010, 2512       |            |   | 4000            | 1.02 Mohm = 1M02 |             |            |
|                |                  | 0805             | 0.125 | 0.33      | Z    | Jumper |           |      |                      |                  |            | Zero ohm jumper = 0R00  |                 |                  |             |            |
|                |                  | 1206             | 0.25  | 0.5       |      |        |           |      |                      |                  |            |   |                 |                  |             |            |
|                |                  | 1210             | 0.33  | 0.75      |      |        |           |      |                      |                  |            |   |                 |                  |             |            |
|                |                  | 2010             | 0.75  | 1         |      |        |           |      |                      |                  |            |   |                 |                  |             |            |
|                |                  | 2512             | 1     | 2         |      |        |           |      |                      |                  |            |   |                 |                  |             |            |

## OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we stricly control the quality of products and services. Welcome your RFQ to

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