

**Features:**

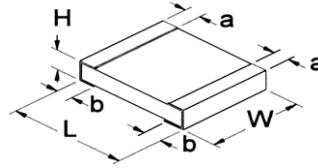
- Precision performance
- High stability
- Tolerances as low as 0.1%
- Temperature coefficient of resistance as low as  $\pm 50$  ppm/ $^{\circ}\text{C}$
- RoHS compliant, REACH compliant, and halogen free
- 0402 and 0603 sizes are AEC-Q200 compliant



| Electrical Specifications |                                                |                                                  |                                    |                                   |                                        |             |          |
|---------------------------|------------------------------------------------|--------------------------------------------------|------------------------------------|-----------------------------------|----------------------------------------|-------------|----------|
| Type/Code                 | Power Rating<br>(W)<br>@ 70 $^{\circ}\text{C}$ | Maximum<br>Working<br>Voltage (V) <sup>(1)</sup> | Maximum<br>Overload<br>Voltage (V) | TCR<br>(ppm/ $^{\circ}\text{C}$ ) | Ohmic Range ( $\Omega$ ) and Tolerance |             |          |
|                           |                                                |                                                  |                                    |                                   | 0.1%                                   | 0.5%        | 1%       |
| RGC0201                   | 0.05                                           | 25                                               | 50                                 | $\pm 200$                         | -                                      | 10 - 10M    | -        |
| RGC0402                   | 0.063                                          | 50                                               | 100                                | $\pm 50$                          | -                                      | 100 - 1M    |          |
|                           |                                                |                                                  |                                    | $\pm 100$                         | -                                      | 10 - 1M     | 1 - 1M   |
|                           |                                                |                                                  |                                    | $\pm 200$                         | -                                      | 1.02M - 10M | -        |
| RGC0603                   | 0.1                                            | 75                                               | 150                                | $\pm 50$                          | 10 - 1M                                | 10 - 10M    |          |
|                           |                                                |                                                  |                                    | $\pm 100$                         | 10 - 1M                                |             | 1 - 10M  |
|                           |                                                |                                                  |                                    | $\pm 200$                         | -                                      | 1.02M - 10M | -        |
| RGC0805                   | 0.125                                          | 150                                              | 300                                | $\pm 50$                          | 10 - 1M                                | 10 - 10M    |          |
|                           |                                                |                                                  |                                    | $\pm 100$                         | 10 - 1M                                |             | 1 - 10M  |
|                           |                                                |                                                  |                                    | $\pm 200$                         | -                                      | 1.02M - 10M | -        |
| RGC1206                   | 0.25                                           | 200                                              | 400                                | $\pm 50$                          | 10 - 1M                                | 10 - 10M    |          |
|                           |                                                |                                                  |                                    | $\pm 100$                         | 10 - 1M                                |             | 1 - 10M  |
|                           |                                                |                                                  |                                    | $\pm 200$                         | -                                      | 1.02M - 10M | -        |
| RGC1210                   | 0.25                                           | 200                                              | 400                                | $\pm 100$                         | -                                      | -           | 1 - 9.76 |
|                           |                                                |                                                  |                                    | $\pm 50$                          | 10 - 1M                                | 10 - 10M    |          |
|                           | 0.33                                           | 200                                              | 400                                | $\pm 100$                         | 10 - 1M                                |             | 10 - 10M |
|                           |                                                |                                                  |                                    | $\pm 200$                         | -                                      | 1.02M - 10M | -        |
| RGC2010                   | 0.75                                           | 200                                              | 400                                | $\pm 50$                          | 10 - 1M                                | 10 - 10M    |          |
|                           |                                                |                                                  |                                    | $\pm 100$                         | 10 - 1M                                |             | 1 - 10M  |
|                           |                                                |                                                  |                                    | $\pm 200$                         | -                                      | 1.02M - 10M | -        |
| RGC2512                   | 1                                              | 200                                              | 400                                | $\pm 100$                         | -                                      | -           | 1 - 9.76 |
|                           |                                                | 250                                              | 500                                | $\pm 50$                          | 10 - 1M                                | 10 - 10M    |          |
|                           |                                                |                                                  |                                    | $\pm 100$                         | 10 - 1M                                |             | 10 - 10M |
|                           |                                                |                                                  |                                    | $\pm 200$                         | -                                      | 1.02M - 10M | -        |

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

## Mechanical Specifications



| Type/Code | Typical Unit Weight (mg) | L<br>Body Length             | W<br>Body Width              | H<br>Body Height             | a<br>Top Termination         | b<br>Bottom Termination      | Unit         |
|-----------|--------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| RGC0201   | 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 |
| RGC0402   | 0.62                     | 0.039 ± 0.004<br>1.00 ± 0.10 | 0.020 ± 0.002<br>0.50 ± 0.05 | 0.012 ± 0.004<br>0.30 ± 0.10 | 0.008 ± 0.004<br>0.20 ± 0.10 | 0.010 ± 0.006<br>0.25 ± 0.15 | inches<br>mm |
| RGC0603   | 2.0                      | 0.063 ± 0.004<br>1.60 ± 0.10 | 0.031 ± 0.004<br>0.80 ± 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 |
| RGC0805   | 4.4                      | 0.079 ± 0.004<br>2.00 ± 0.10 | 0.049 ± 0.004<br>1.25 ± 0.10 | 0.020 ± 0.004<br>0.50 ± 0.10 | 0.016 ± 0.010<br>0.40 ± 0.25 | 0.016 ± 0.008<br>0.40 ± 0.20 | inches<br>mm |
| RGC1206   | 8.9                      | 0.122 ± 0.006<br>3.10 ± 0.15 | 0.061 ± 0.004<br>1.55 ± 0.10 | 0.024 ± 0.006<br>0.60 ± 0.15 | 0.020 ± 0.010<br>0.50 ± 0.25 | 0.020 ± 0.012<br>0.50 ± 0.30 | inches<br>mm |
| RGC1210   | 16.0                     | 0.126 ± 0.010<br>3.20 ± 0.25 | 0.102 ± 0.006<br>2.60 ± 0.15 | 0.022 ± 0.004<br>0.55 ± 0.10 | 0.020 ± 0.010<br>0.50 ± 0.25 | 0.020 ± 0.008<br>0.50 ± 0.20 | inches<br>mm |
| RGC2010   | 24.2                     | 0.197 ± 0.008<br>5.00 ± 0.20 | 0.098 ± 0.006<br>2.50 ± 0.15 | 0.022 ± 0.004<br>0.55 ± 0.10 | 0.024 ± 0.010<br>0.60 ± 0.25 | 0.024 ± 0.012<br>0.60 ± 0.30 | inches<br>mm |
| RGC2512   | 39.4                     | 0.250 ± 0.008<br>6.35 ± 0.20 | 0.124 ± 0.008<br>3.15 ± 0.20 | 0.022 ± 0.004<br>0.55 ± 0.10 | 0.024 ± 0.010<br>0.60 ± 0.25 | 0.024 ± 0.012<br>0.60 ± 0.30 | inches<br>mm |

## Performance Characteristics

| Test                                  | Test Method                             | Test Specification        | Test Condition                                                                                         |
|---------------------------------------|-----------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------|
| Temperature Coefficient of Resistance | JIS-C-5201-1 4.8<br>IEC-60115-1 4.8     | As specified.             | -55 +125°C, 25°C is the reference temperature                                                          |
| Short Time Overload                   | JIS-C-5201-1 4.13<br>IEC-60115-1 4.13   | ±(1% + 0.05Ω)             | 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 | ±(1% + 0.1Ω)              | 70 ± 2°C, RCWV for 1000 hours with 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   | ±(1% + 0.1Ω)              | 40 ± 2°C, 90 ~ 95% R.H., RCWV for 1000 hours with 1.5 hour "ON" and 0.5 hour "OFF"                     |
| Dry Heat                              | JIS-C-5201-1 4.23<br>IEC-60115-1 4.23.2 | ±(1% + 0.05Ω)             | at +125 / +155°C for 1000 hours                                                                        |
| Bending Strength                      | JIS-C-5201-1 4.33<br>IEC-60115-1 4.33   | ±(1% + 0.05Ω)             | 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)           | 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                                                         |

### Performance Characteristics (cont.)

| Test                        | Test Method                               | Test Specification                                                     | Test Condition                   |
|-----------------------------|-------------------------------------------|------------------------------------------------------------------------|----------------------------------|
| Leaching                    | JIS-C-5201-1 4.18<br>IEC-60068-2-58 8.2.1 | Individual leaching area $\leq 5\%$<br>Total leaching area $\leq 10\%$ | 260 $\pm$ 5°C for 30 seconds     |
| Rapid Change of Temperature | JIS-C-5201-1 4.19<br>IEC-60115-1 4.19     | $\pm(0.5\% + 0.05\Omega)$                                              | -55 to +125°C / +155°C, 5 cycles |

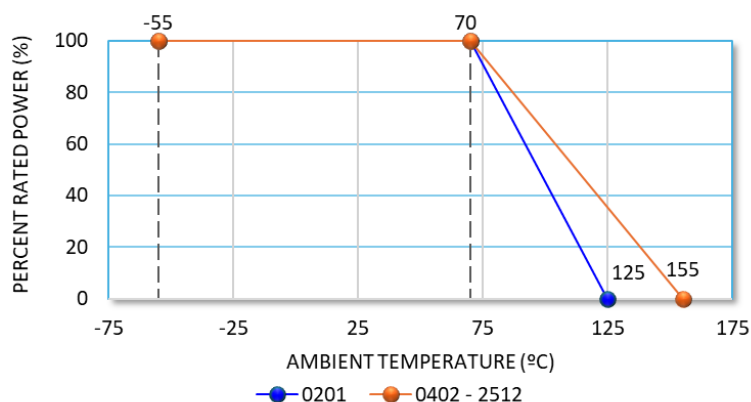
RCWV (Rated Continuous Working Voltage) =  $\sqrt{P \cdot R}$  or max. operating voltage whichever is lower

Recommended storage temperature is 25  $\pm$  3°C; humidity < 80% RH

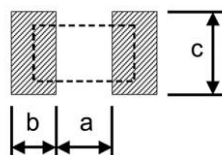
Operating temperature range for 0201 is -55 to +125°C

Operating temperature range for 0402 - 2512 is -55 to 155°C

Power Derating Chart:



### Recommended Pad Layout



| Type/Code | a             | b             | c             | Unit         |
|-----------|---------------|---------------|---------------|--------------|
| RGC0201   | 0.012<br>0.30 | 0.010<br>0.25 | 0.012<br>0.30 | inches<br>mm |
| RGC0402   | 0.020<br>0.50 | 0.018<br>0.45 | 0.024<br>0.60 | inches<br>mm |
| RGC0603   | 0.035<br>0.90 | 0.024<br>0.60 | 0.035<br>0.90 | inches<br>mm |
| RGC0805   | 0.047<br>1.20 | 0.028<br>0.70 | 0.051<br>1.30 | inches<br>mm |
| RGC1206   | 0.079<br>2.00 | 0.035<br>0.90 | 0.063<br>1.60 | inches<br>mm |
| RGC1210   | 0.079<br>2.00 | 0.035<br>0.90 | 0.110<br>2.80 | inches<br>mm |
| RGC2010   | 0.150<br>3.80 | 0.035<br>0.90 | 0.110<br>2.80 | inches<br>mm |
| RGC2512   | 0.193<br>4.90 | 0.063<br>1.60 | 0.138<br>3.50 | inches<br>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 “\*”.

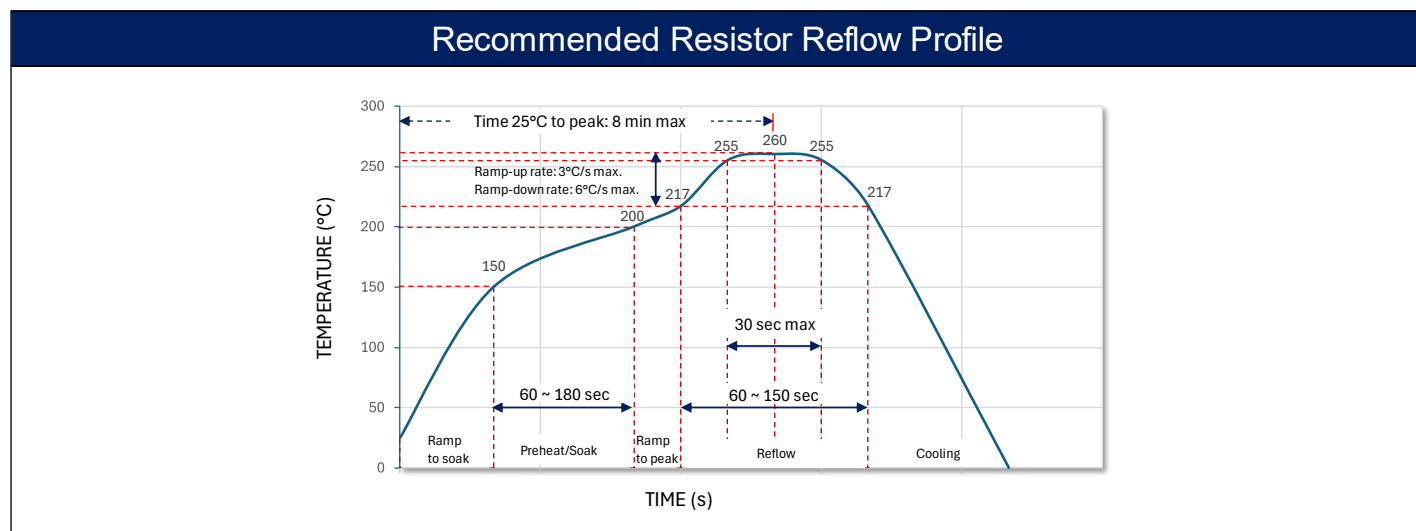
## 100% Matte Tin / RoHS Compliant Terminations

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

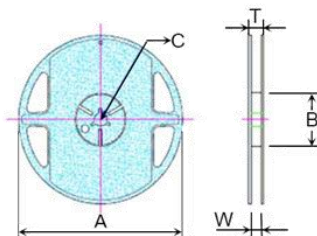
| Wave Soldering     |            |             |            |
|--------------------|------------|-------------|------------|
| Description        | Maximum    | Recommended | Minimum    |
| Preheat Time       | 80 seconds | 70 seconds  | 60 seconds |
| Temperature Diff.  | 140°C      | 120°C       | 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     | *          |

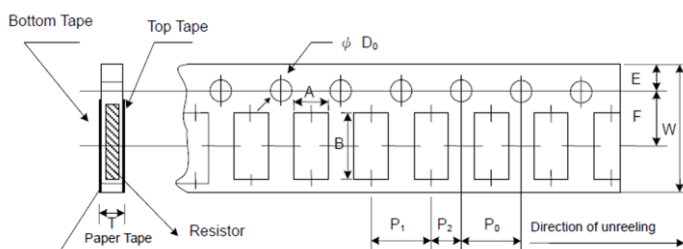


### Reel Specifications



| Type/Code | Packaging Description | Tape Width | Reel Diameter | A                 | B                 | C                 | W                 | T                 | Unit   |
|-----------|-----------------------|------------|---------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------|
| RGC0201   | Paper                 | 8 mm       | 7 inches      | $7.028 \pm 0.059$ | $2.362 \pm 0.039$ | $0.512 \pm 0.008$ | $0.354 \pm 0.020$ | $0.492 \pm 0.020$ | inches |
| RGC0402   |                       |            |               | $178.50 \pm 1.50$ | $60.00 \pm 1.00$  | $13.00 \pm 0.20$  | $9.00 \pm 0.50$   | $12.50 \pm 0.50$  | mm     |
| RGC0603   | Paper                 | 8 mm       | 7 inches      | $7.028 \pm 0.059$ | $2.362 \pm 0.039$ | $0.512 \pm 0.008$ | $0.354 \pm 0.020$ | $0.492 \pm 0.020$ | inches |
| RGC0805   |                       |            |               | $178.50 \pm 1.50$ | $60.00 \pm 1.00$  | $13.00 \pm 0.20$  | $9.00 \pm 0.50$   | $12.50 \pm 0.50$  | mm     |
| RGC1206   | Paper                 | 8 mm       | 7 inches      | $7.028 \pm 0.059$ | $2.362 \pm 0.039$ | $0.512 \pm 0.008$ | $0.354 \pm 0.020$ | $0.492 \pm 0.020$ | inches |
| RGC1210   |                       |            |               | $178.50 \pm 1.50$ | $60.00 \pm 1.00$  | $13.00 \pm 0.20$  | $9.00 \pm 0.50$   | $12.50 \pm 0.50$  | mm     |
| RGC2010   | Plastic               | 12 mm      | 7 inches      | $7.028 \pm 0.059$ | $2.362 \pm 0.039$ | $0.512 \pm 0.020$ | $0.512 \pm 0.020$ | $0.610 \pm 0.020$ | inches |
| RGC2512   |                       |            |               | $178.50 \pm 1.50$ | $60.00 \pm 1.00$  | $13.00 \pm 0.50$  | $13.00 \pm 0.50$  | $15.50 \pm 0.50$  | mm     |

### Packaging Specifications - Paper Tape

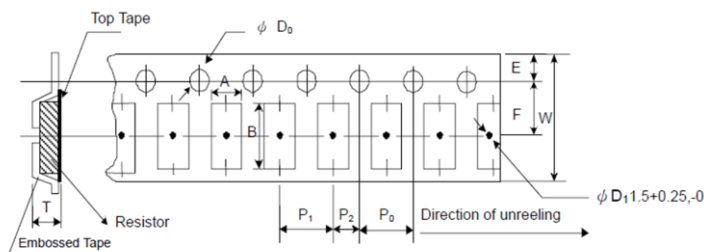


| Type/Code | A                                    | B                                    | W                                    | E                                    | F                                    | Unit         |
|-----------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------|
| RGC0201   | $0.015 \pm 0.002$<br>$0.38 \pm 0.05$ | $0.027 \pm 0.002$<br>$0.68 \pm 0.05$ | $0.315 \pm 0.008$<br>$8.00 \pm 0.20$ | $0.069 \pm 0.004$<br>$1.75 \pm 0.10$ | $0.138 \pm 0.002$<br>$3.50 \pm 0.05$ | inches<br>mm |
| RGC0402   | $0.026 \pm 0.004$<br>$0.65 \pm 0.10$ | $0.045 \pm 0.004$<br>$1.15 \pm 0.10$ | $0.315 \pm 0.008$<br>$8.00 \pm 0.20$ | $0.069 \pm 0.004$<br>$1.75 \pm 0.10$ | $0.138 \pm 0.002$<br>$3.50 \pm 0.05$ | inches<br>mm |
| RGC0603   | $0.043 \pm 0.004$<br>$1.10 \pm 0.10$ | $0.075 \pm 0.004$<br>$1.90 \pm 0.10$ | $0.315 \pm 0.008$<br>$8.00 \pm 0.20$ | $0.069 \pm 0.004$<br>$1.75 \pm 0.10$ | $0.138 \pm 0.002$<br>$3.50 \pm 0.05$ | inches<br>mm |
| RGC0805   | $0.063 \pm 0.004$<br>$1.60 \pm 0.10$ | $0.094 \pm 0.008$<br>$2.40 \pm 0.20$ | $0.315 \pm 0.008$<br>$8.00 \pm 0.20$ | $0.069 \pm 0.004$<br>$1.75 \pm 0.10$ | $0.138 \pm 0.002$<br>$3.50 \pm 0.05$ | inches<br>mm |
| RGC1206   | $0.075 \pm 0.004$<br>$1.90 \pm 0.10$ | $0.138 \pm 0.008$<br>$3.50 \pm 0.20$ | $0.315 \pm 0.008$<br>$8.00 \pm 0.20$ | $0.069 \pm 0.004$<br>$1.75 \pm 0.10$ | $0.138 \pm 0.002$<br>$3.50 \pm 0.05$ | inches<br>mm |

### Packaging Specifications - Paper Tape (cont.)

| Type/Code | P0                           | P1                           | P2                           | D0                           | T                            | Unit         |
|-----------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| RGC0201   | 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<br>1.50 ± 0.10 | 0.017 ± 0.008<br>0.42 ± 0.20 | inches<br>mm |
| RGC0402   | 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<br>1.50 ± 0.10 | 0.018 ± 0.004<br>0.45 ± 0.10 | inches<br>mm |
| RGC0603   | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.157 ± 0.002<br>4.00 ± 0.05 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.059 ± 0.004<br>1.50 ± 0.10 | 0.028 ± 0.004<br>0.70 ± 0.10 | inches<br>mm |
| RGC0805   | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.157 ± 0.002<br>4.00 ± 0.05 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.059 ± 0.004<br>1.50 ± 0.10 | 0.033 ± 0.004<br>0.85 ± 0.10 | inches<br>mm |
| RGC1206   | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.157 ± 0.002<br>4.00 ± 0.05 | 0.079 ± 0.002<br>2.00 ± 0.05 | 0.059 ± 0.004<br>1.50 ± 0.10 | 0.033 ± 0.004<br>0.85 ± 0.10 | inches<br>mm |

### Packaging Specifications - Plastic Tape



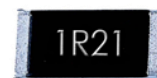
| Type/Code | A                            | B                            | W                             | E                            | F                            | Unit         |
|-----------|------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|--------------|
| RGC2010   | 0.110 ± 0.004<br>2.80 ± 0.10 | 0.217 ± 0.004<br>5.50 ± 0.10 | 0.472 ± 0.012<br>12.00 ± 0.30 | 0.069 ± 0.004<br>1.75 ± 0.10 | 0.217 ± 0.002<br>5.50 ± 0.05 | inches<br>mm |
| RGC2512   | 0.138 ± 0.004<br>3.50 ± 0.10 | 0.264 ± 0.004<br>6.70 ± 0.10 | 0.472 ± 0.012<br>12.00 ± 0.30 | 0.069 ± 0.004<br>1.75 ± 0.10 | 0.217 ± 0.002<br>5.50 ± 0.05 | inches<br>mm |
| Type/Code | P0                           | P1                           | P2                            | D0                           | T                            | Unit         |
| RGC2010   | 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<br>1.50 ± 0.10 | 0.047 ± 0.000<br>1.20 ± 0.00 | inches<br>mm |
| RGC2512   | 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<br>1.50 ± 0.10 | 0.047 ± 0.000<br>1.20 ± 0.00 | inches<br>mm |

## Part Marking Instructions

### E96 and E24 Values For Sizes 0805 to 2512

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

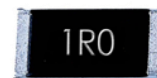


1MΩ

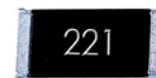
### E24 Values For Size 0603

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
3. Values that are both E24 and E96 follow E96 marking rules.



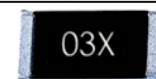
1Ω



220Ω

### E96 Values For Size 0603

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: Sizes 0201 and 0402 are unmarked.

## 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) |
| RGC                     | Precision Thick Film Chip Resistor | SMD                        | YES(1)                         | 100% Matte Sn over Ni             | Jul-04                                             | 04/27                                 |

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 G C 0 6 0 3 F T C 4 K 7 0 |                           |      |       |           |      |          |           |                      |            |          |      |     |                                                                 |
|-----------------------------|---------------------------|------|-------|-----------|------|----------|-----------|----------------------|------------|----------|------|-----|-----------------------------------------------------------------|
| Product Series              |                           | Size |       | Tolerance |      |          | Packaging |                      |            |          | TCR  |     | Resistance Value                                                |
| RGC                         | Semi-Precision Thick Film | Code | W     | Code      | Tol  | Value    | Code      | Description          | Size       | Quantity | Code | ppm | Four characters with the multiplier used as the decimal holder. |
|                             |                           | 0201 | 0.05  | B         | 0.1% | E24, E96 | T         | 7" Reel Paper Tape   | 0201, 0402 | 10000    | C    | 50  | 100 ohm = 100R                                                  |
|                             |                           | 0402 | 0.063 | D         | 0.5% |          |           |                      | 0603, 0805 | 5000     | D    | 100 | 10.5 Kohm = 10K5                                                |
|                             |                           | 0603 | 0.1   | F         | 1%   |          |           |                      | 1206, 1210 |          | L    | 200 | 1 Mohm = 1M00                                                   |
|                             |                           | 0805 | 0.125 |           |      |          |           | 7" Reel Plastic Tape | 2010, 2512 | 4000     |      |     |                                                                 |
|                             |                           | 1206 | 0.25  |           |      |          |           |                      |            |          |      |     |                                                                 |
|                             |                           | 1210 | 0.25  |           |      |          |           |                      |            |          |      |     |                                                                 |
|                             |                           | 1210 | 0.33  |           |      |          |           |                      |            |          |      |     |                                                                 |
|                             |                           | 2010 | 0.75  |           |      |          |           |                      |            |          |      |     |                                                                 |
|                             |                           | 2512 | 1     |           |      |          |           |                      |            |          |      |     |                                                                 |