

# RESISTOR WIREWOUND CHASSIS MOUNT

## RWC SERIES



### KEY FEATURES

- Resistances from 0.005 to 250kOhms
- Tolerance to  $\pm 0.01\%$
- High Temperature:  $-55^{\circ}\text{C}$  to  $+275^{\circ}\text{C}$
- Low TCR:  $\pm 20\text{ppm}/^{\circ}\text{C}$
- Power Rating 5 to 300 Watts
- Excellent Pulse Handling
- Non-Inductive windings available
- Four Terminal Versions Available (Call Factory)

### APPLICATIONS

- Motor Control
- Braking Systems
- Welding
- X-Ray

### PRODUCT SUMMARY

| PRODUCT SERIES (RWC) | RESISTANCE RANGE ( $\Omega$ ) <sup>1</sup> | POWER RATING (W @ 25°C) |                   |                 | DIELECTRIC STRENGTH | TEMPERATURE COEFFICIENT  | TEMPERATURE RANGE                               |
|----------------------|--|-------------------------|-------------------|-----------------|---------------------|--|---|
|                      |  | FREE AIR                | COMMERCIAL        | MIL             |                     |  |   |
| G1                   | 0.01 to 22K                                | 4.5                     | 7.5 <sup>a</sup>  | 5 <sup>a</sup>  | 1500 VAC            | <ul style="list-style-type: none"> <li>◆ <math>&gt;10\Omega</math>: <math>\pm 20\text{ppm}/^{\circ}\text{C}</math></li> <li>◆ <math>1\Omega</math> to <math>10\Omega</math>: <math>\pm 50\text{ppm}/^{\circ}\text{C}</math></li> <li>◆ <math>&lt;1\Omega</math>: Call Factory</li> </ul> | $-55^{\circ}\text{C}$ to $+275^{\circ}\text{C}$ |
| G2                   | 0.01 to 47K                                | 7.5                     | 12.5 <sup>a</sup> | 10 <sup>a</sup> | 1500 VAC            |  |   |
| G3                   | 0.01 to 90K                                | 12                      | 25 <sup>b</sup>   | 20 <sup>b</sup> | 2500 VAC            |  |   |
| G4                   | 0.01 to 250K                               | 20                      | 50 <sup>c</sup>   | 30 <sup>c</sup> | 3500 VAC            |  |   |

**TOLERANCE:**  $\pm 0.01$  to  $\pm 10\%$  (1% Standard)

- <sup>1</sup> For non-inductive windings, divide maximum resistance by 2
- <sup>a</sup> Heatsink required: 0.040 [1.0] Aluminum Plate, 129 in<sup>2</sup> [832 cm<sup>2</sup>] or equiv.
- <sup>b</sup> Heatsink required: 0.040 [1.0] Aluminum Plate, 167 in<sup>2</sup> [1077 cm<sup>2</sup>] or equiv.
- <sup>c</sup> Heatsink required: 0.059 [1.5] Aluminum Plate, 291 in<sup>2</sup> [1877 cm<sup>2</sup>] or equiv.
- <sup>d</sup> Heatsink required: 0.125 [3.2] Aluminum Plate, 294in<sup>2</sup> [1896cm<sup>2</sup>] or equiv.
- <sup>e</sup> Heatsink required: 0.125 [3.2] Aluminum Plate, 895 in<sup>2</sup> [5780 cm<sup>2</sup>] or equiv.

### AVAILABLE OPTIONS (Consult Factory)

- Special Testing Requirements
- Special Pulse Requirements

### HOW TO ORDER

| RWC                               | N                                 | G1   | U   | 003K8   | F   | S        |
|-----------------------------------|-----------------------------------|--|---|---|---|----------|
| RESISTOR WIRE-WOUND CHASSIS MOUNT | WINDINGS                          | PACKAGE CODE, WATTS (COMMERCIAL), RESISTANCE   | TEMPERATURE COEFFICIENT OF RESISTANCE (TCR)   | RESISTANCE  | TOLERANCE   | PACKING  |
|                                   | S = Standard<br>N = Non-Inductive | G1, 7.5W, [0.01 to 22k] $\Omega$<br>G2, 12.5W, [0.01 to 47k] $\Omega$<br>G3, 25.0W, [0.01 to 90k] $\Omega$<br>G4, 50.0W, [0.01 to 250k] $\Omega$ | U = $\pm 20\text{ppm}/^{\circ}\text{C}$<br>Q = $\pm 50\text{ppm}/^{\circ}\text{C}$<br>Z = Special | 038R0 = 38 $\Omega$<br>003K8 = 3.8K $\Omega$<br>038K0 = 38.0K $\Omega$<br>380K0 = 380.0K $\Omega$<br>003M8 = 3.8M $\Omega$<br>Letter denotes decimal place.<br>R = decimal., "K" $10^3$ , "M" $10^6$<br>Remaining 4 digits are significant or placeholders. | T = $\pm 0.01\%$<br>Q = $\pm 0.02\%$<br>A = $\pm 0.05\%$<br>B = $\pm 0.1\%$<br>F = $\pm 1.0\%$<br>J = $\pm 5.0\%$<br>K = $\pm 10.0\%$ | S = Bulk |

**For Tin/Lead coated leads, add "- Pb" to part number.**

Standard Termination Finish: Matte Tin (Sn)

Example P/N: RWCNG1U003K8FS is Resistor Wirewound Chassis Mount, Non-Inductive, 7.5W,  $\pm 20\text{ppm}/^{\circ}\text{C}$ , 3.8K $\Omega$ ,  $\pm 1.0\%$ , bulk



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### MECHANICAL CHARACTERISTICS



| Package Code                     |  | G1             | G2             | G3             | G4             |
|----------------------------------|--|----------------|----------------|----------------|----------------|
| Dimensions<br>Inches [mm]        | <b>A</b> (Tolerances)<br>±0.005 [±0.13 mm] | 0.444 [11.28]  | 0.562 [14.27]  | 0.719 [18.26]  | 1.563 [39.70]  |
|                                  | <b>B</b> (Tolerances)<br>±0.005 [±0.13 mm] | 0.490 [12.45]  | 0.625 [15.88]  | 0.781 [19.84]  | 0.844 [21.44]  |
|                                  | <b>C</b> (Tolerances)<br>±0.031 [±0.79 mm] | 0.600 [15.24]  | 0.750 [19.05]  | 1.062 [26.97]  | 1.968 [49.99]  |
|                                  | <b>D</b> (Tolerances)<br>±0.062 [±1.57 mm] | 1.125 [28.58]  | 1.320 [33.53]  | 1.870 [47.50]  | 2.760 [70.10]  |
|                                  | <b>E</b> (Tolerances)<br>±0.015 [±0.38 mm] | 0.334 [8.48]   | 0.430 [10.92]  | 0.530 [13.46]  | 0.615 [15.62]  |
|                                  | <b>F</b> (Tolerances)<br>±0.015 [±0.38 mm] | 0.646 [16.41]  | 0.800 [20.32]  | 1.080 [27.43]  | 1.140 [28.96]  |
|                                  | <b>G</b> (Tolerances)<br>±0.015 [±0.38 mm] | 0.320 [8.13]   | 0.400 [10.16]  | 0.560 [14.22]  | 0.615 [15.62]  |
|                                  | <b>H</b> (Tolerances)<br>±0.010 [±0.25 mm] | 0.065 [1.65]   | 0.075 [1.91]   | 0.085 [2.16]   | 0.085 [2.16]   |
|                                  | <b>J</b> (Tolerances)<br>±0.010 [±0.25 mm] | 0.140 [3.56]   | 0.190 [4.83]   | 0.260 [6.60]   | 0.300 [7.62]   |
|                                  | <b>K</b> (Tolerances)<br>±0.010 [±0.25 mm] | 0.078 [1.98]   | 0.093 [2.36]   | 0.172 [4.37]   | 0.196 [4.98]   |
|                                  | <b>L</b> (Tolerances)<br>±0.005 [±0.13 mm] | 0.093 [2.36]   | 0.093 [2.36]   | 0.125 [3.18]   | 0.125 [3.18]   |
|                                  | <b>M</b> (Tolerances)<br>±0.015 [±0.38 mm] | 0.078 [1.98]   | 0.102 [2.60]   | 0.125 [3.18]   | 0.125 [3.18]   |
|                                  | <b>N</b> (Tolerances)<br>±0.006 [±0.15 mm] | 0.050 [1.27]   | 0.080 [2.03]   | 0.080 [2.03]   | 0.080 [2.03]   |
|                                  | <b>O</b> (Tolerances)<br>±0.062 [±1.57 mm] | 0.266 [6.76]   | 0.312 [7.93]   | 0.438 [11.13]  | 0.438 [11.13]  |
|                                  | <b>P</b> (Tolerances)<br>±0.031 [±0.79 mm] | 0.245 [6.22]   | 0.312 [7.92]   | 0.391 [9.93]   | 0.422 [10.72]  |
|                                  | <b>Q</b> (Tolerances)<br>±0.002 [±0.05 mm] | 0.051 [1.30]   | 0.098 [2.49]   | 0.098 [2.49]   | 0.098 [2.49]   |
|                                  | <b>R</b> (Tolerances)<br>±0.031 [±0.79 mm] | 0.085 [2.16]   | 0.160 [4.06]   | 0.185 [4.70]   | 0.185 [4.70]   |
| <b>MIL-R-39009 / MIL-R-18546</b> |  | RER-60 / RE-60 | RER-65 / RE-65 | RER-70 / RE-70 | RER-75 / RE-75 |



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## ENVIRONMENTAL PERFORMANCE

| Environmental Performance (MIL-STD 202) | $\Delta R$                 |
|---|----------------------------|
| Vibration                               | $\pm 0.1 \% + 0.05 \Omega$ |
| Load Life                               | $\pm 1\% + 0.05 \Omega$    |
| Moisture Resistance                     | $\pm 0.2 \% + 0.05 \Omega$ |
| Dielectric                              | $\pm 0.2 \% + 0.05 \Omega$ |
| Storage                                 | $\pm 0.2 \% + 0.05 \Omega$ |
| Shock                                   | $\pm 0.1 \% + 0.05 \Omega$ |
| Thermal Shock                           | $\pm 0.2 \% + 0.05 \Omega$ |
| 5X Overload (5s)                        | $\pm 0.2 \% + 0.05 \Omega$ |

### CONSTRUCTION NOTES:

- ◆ Centerless ground ceramic core
- ◆ Tinned copper or copperweld leads
- ◆ All welded terminations
- ◆ High Temperature epoxy molding compound
- ◆ Anodized aluminum housing

Moisture Sensitivity Level: MSL-1



This datasheet is subject to change without notice.





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