

# 89 Series

## Metal-Mite® Aluminum Housed Axial Terminal Wirewound, 1% Tolerance



The 89 Series is a high-performance axial type resistor. These molded-construction metal-housed resistors are available in higher power ratings than standard axial resistors and are better suited to withstanding vibration, shock and harsh environmental conditions.

The 89 Series Metal-Mite® resistors are aluminum housed to maintain high stability during operation and to permit secure mounting to chassis surfaces.

The metal housing also provides heat-sinking capabilities.

### FEATURES

- High Stability:  $\pm 0.5\%$   $\Delta R$
- High power to size ratio
- Metal housing allows chassis mounting and provides heat sink capability

### SERIES SPECIFICATIONS

| Series | Wattage | Ohms       | Voltage |
|--------|---------|------------|---------|
| 805    | 5       | 0.10-25K   | 210     |
| 810    | 10      | 0.10-50K   | 320     |
| 825    | 25      | 0.005-75K  | 520     |
| 850    | 50      | 0.005-100K | 1170    |

Non-Inductive versions available. Insert "N" before tolerance code.  
Example: 850NF560

### CHARACTERISTICS

|                                        |                                                                                                                                                                                                                                                          |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Housing</b>                         | Metal, anodized aluminum                                                                                                                                                                                                                                 |
| <b>Internal Coating</b>                | Silicone                                                                                                                                                                                                                                                 |
| <b>Core</b>                            | Ceramic                                                                                                                                                                                                                                                  |
| <b>Terminals</b>                       | Solder-coated axial                                                                                                                                                                                                                                      |
| <b>Derating</b>                        | Linearly from 100% @ +25°C to 0% @ +275°C.                                                                                                                                                                                                               |
| <b>Tolerance</b>                       | $\pm 1\%$ and $\pm 5\%$ (other tolerances available).                                                                                                                                                                                                    |
| <b>Power rating</b>                    | Rating is based on chassis mounting area and temperature stability. Proper heat sink as follows: 5W and 10W units, 4" x 6" x 2" x .040" Aluminum chassis; 25W units, 5" x 7" x 2" x .040" Aluminum chassis; 50W units, 12" x 12" x .059" Aluminum panel. |
| <b>Maximum ohmic values</b>            | See chart.                                                                                                                                                                                                                                               |
| <b>Overload</b>                        | 5 times rated wattage for 5 seconds.                                                                                                                                                                                                                     |
| <b>Temperature coefficient</b>         | Under 1Ω: $\pm 90$ ppm/°C; 1 to 9.99Ω: $\pm 50$ ppm/°C; 10Ω and over: $\pm 20$ ppm/°C.                                                                                                                                                                   |
| <b>Dielectric withstanding voltage</b> | 5W and 10W rating, 1000 VAC; 25 and 50W ratings, 2250 VAC.                                                                                                                                                                                               |

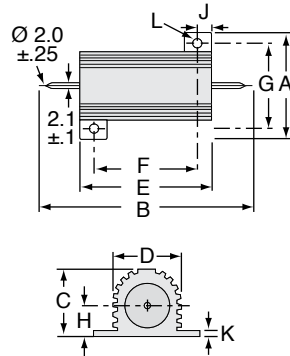
(continued)

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### DIMENSIONS

(in./mm)



Dimensions have changed  
as of August 2015

|     | A<br>max.    | B<br>max.    | C<br>max.    | D<br>max.    | E<br>max.    | F<br>±.3mm   | G<br>±.3mm   | H<br>max.   | J<br>max.   | K<br>max.   | L<br>±.25mm |
|-----|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|
| 805 | 0.65" / 16.5 | 1.18" / 30.0 | 0.35" / 8.8  | 0.33" / 8.5  | 0.63" / 15.9 | 0.44" / 11.3 | 0.49" / 12.4 | 0.18" / 4.5 | 0.09" / 2.4 | 0.07" / 1.8 | 0.09" / 2.4 |
| 810 | 0.83" / 21.0 | 1.44" / 36.5 | 0.43" / 11.0 | 0.44" / 11.2 | 0.78" / 19.9 | 0.56" / 14.3 | 0.63" / 15.9 | 0.22" / 5.5 | 0.11" / 2.8 | 0.07" / 1.8 | 0.09" / 2.4 |
| 825 | 1.10" / 28.0 | 2.01" / 51.0 | 0.58" / 14.8 | 0.56" / 14.2 | 1.07" / 27.3 | 0.72" / 18.3 | 0.78" / 19.8 | 0.30" / 7.7 | 0.20" / 5.2 | 0.10" / 2.6 | 0.13" / 3.2 |
| 850 | 1.10" / 28.0 | 2.85" / 72.5 | 0.58" / 14.8 | 0.56" / 14.2 | 1.93" / 49.1 | 1.56" / 39.7 | 0.84" / 21.4 | 0.33" / 8.4 | 0.20" / 5.2 | 0.10" / 2.6 | 0.13" / 3.2 |

### ORDERING INFORMATION

| Ohmic value | Wattage                          |      |      |      |      | Ohmic value | Wattage                          |      |      |      |      | Ohmic value | Wattage                          |      |      |      |      |
|-------------|----------------------------------|------|------|------|------|-------------|----------------------------------|------|------|------|------|-------------|----------------------------------|------|------|------|------|
|             | Part No.<br>Prefix ▶<br>Suffix ▼ | 5    | 10   | 25   | 50   |             | Part No.<br>Prefix ▶<br>Suffix ▼ | 5    | 10   | 25   | 50   |             | Part No.<br>Prefix ▶<br>Suffix ▼ | 5    | 10   | 25   | 50   |
|             |                                  | 805F | 810F | 825F | 850F |             |                                  | 805F | 810F | 825F | 850F |             |                                  | 805F | 810F | 825F | 850F |
| 0.005       | —R005                            |      |      | ✓    | ✓    | 20          | —20R                             | ✓    | ✓    |      |      | 1,500       | —1K5                             | ✓    | ✓    | ✓    | ✓    |
| 0.010       | —R010                            |      |      | ✓    | ✓    | 25          | —25R                             | ✓    | ✓    | ✓    | ✓    | 2,000       | —2K0                             | ✓    | ✓    | ✓    | ✓    |
| 0.025       | —R025                            |      |      | ✓    | ✓    | 30          | —30R                             | ✱    | ✱    |      |      | 2,500       | —2K5                             | ✓    | ✓    | ✓    | ✓    |
| 0.1         | —R10                             |      |      | ✓    | ✓    | 40          | —40R                             | ✓    | ✓    |      |      | 3,000       | —3K0                             | ✓    | ✓    | ✓    | ✓    |
| 0.3         | —R30                             |      |      | ✓    | ✱    | 50          | —50R                             | ✓    | ✓    | ✓    | ✓    | 3,500       | —3K5                             | ✓    | ✓    | ✓    | ✓    |
| 0.5         | —R50                             |      |      | ✓    | ✱    | 75          | —75R                             | ✓    | ✱    | ✓    | ✓    | 4,000       | —4K0                             | ✓    | ✓    | ✓    | ✓    |
| 0.7         | —R70                             |      |      | ✓    | ✱    | 100         | —100                             | ✓    | ✓    | ✓    | ✓    | 4,500       | —4K5                             | ✱    | ✱    | ✱    | ✱    |
| 1.0         | —1R0                             | ✓    | ✓    | ✓    | ✓    | 150         | —150                             | ✓    | ✓    | ✓    | ✓    | 5,000       | —5K0                             | ✓    | ✓    | ✓    | ✓    |
| 1.5         | —1R5                             | ✱    | ✓    | ✓    | ✓    | 200         | —200                             | ✱    | ✓    | ✓    | ✓    | 6,000       | —6K0                             | ✓    | ✱    | ✱    | ✓    |
| 2.0         | —2R0                             | ✱    | ✓    | ✓    | ✓    | 250         | —250                             | ✓    | ✓    | ✓    | ✓    | 10,000      | —10K                             | ✓    | ✓    | ✓    | ✓    |
| 3.0         | —3R0                             | ✓    | ✓    | ✓    | ✓    | 300         | —300                             | ✓    | ✱    |      |      | 15,000      | —15K                             | ✓    | ✓    | ✱    | ✱    |
| 4.0         | —4R0                             | ✱    | ✓    |      |      | 400         | —400                             | ✱    | ✱    |      |      | 20,000      | —20K                             | ✱    | ✱    | ✱    | ✱    |
| 5.0         | —5R0                             | ✓    | ✓    | ✓    | ✓    | 500         | —500                             | ✓    | ✱    | ✓    | ✓    | 25,000      | —25K                             | ✓    | ✱    | ✱    | ✱    |
| 10.0        | —10R                             | ✓    | ✓    | ✓    | ✓    | 750         | —750                             | ✱    | ✓    | ✓    | ✓    | 50,000      | —50K                             |      | ✱    | ✱    |      |
| 15.0        | —15R                             | ✓    | ✓    | ✓    | ✓    | 1,000       | —1K0                             | ✱    | ✓    | ✓    | ✓    | 75,000      | —75K                             |      |      | ✱    |      |
|             |                                  |      |      |      |      |             |                                  |      |      |      |      | 100,000     | —100K                            |      |      |      |      |

Non-Inductive Winding  
Optional (blank = std. winding) RoHS Compliant

805 N F 5 R 0 E

Series: 805 = 5 Watt, 810 = 10 watt, 825 = 25 watt, 850 = 50 watt  
Tolerance: F = 1%, J = 5%  
Ohms: R005 = 0.005Ω, R10 = 0.1Ω, 1R0 = 1.0Ω, 250 = 250Ω, 1K0 = 1,000Ω, 1K5 = 1,500Ω, 25K = 25,000Ω

✓ = Standard values

✦ = Non-standard values subject to minimum handling charge per item

Shaded values involve very fine resistance wire and should not be used in critical applications without burn-in and/or thermal cycling.

As of September 2006,  
the 89 Series is no longer  
offered as Mil. Spec.