

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 capability.

## FEATURES

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

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

## SPECIFICATIONS

### Material

**Housing:** Metal, anodized aluminum.

**Internal Coating:** Silicone.

**Core:** Ceramic.

**Terminals:** Solder-coated axial.

**Derating:** Linearly from 100% @ +25°C to 0% @ +275°C.

### Electrical

**Tolerance:**  $\pm 1\%$  and  $\pm 5\%$  (other tolerances available).

**Power rating:** 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.

### Maximum ohmic values:

See chart.

**Overload:** 5 times rated wattage for 5 seconds.

### Temperature coefficient:

Under 1Ω:  $\pm 90$  ppm/°C  
1 to 9.99Ω:  $\pm 50$  ppm/°C  
10Ω and over:  $\pm 20$  ppm/°C.

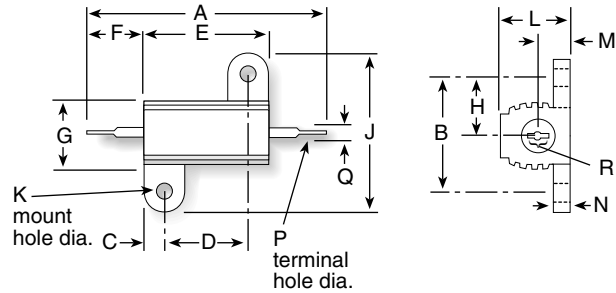
### Dielectric withstanding voltage:

5W and 10W rating, 1000 VAC;  
25 and 50W ratings, 2250 VAC.



# 89 Series

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



| 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

|                                           | 5 watt        | 10 watt       | 25 watt       | 50 watt       |
|-------------------------------------------|---------------|---------------|---------------|---------------|
| Series (Industrial)                       | 805           | 810           | 825           | 850           |
| <b>Dimensions</b>                         |               |               |               |               |
| Dim. A (in. $\pm 0.062$ / mm $\pm 1.57$ ) | 1.125 / 28.59 | 1.375 / 34.93 | 1.938 / 49.23 | 2.781 / 70.64 |
| Dim. B (in. $\pm 0.010$ / mm $\pm 0.25$ ) | 0.490 / 12.45 | 0.625 / 15.88 | 0.781 / 19.84 | 0.844 / 21.44 |
| Dim. C (in. $\pm 0.031$ / mm $\pm 0.79$ ) | 0.078 / 1.98  | 0.094 / 2.39  | 0.172 / 4.37  | 0.188 / 4.78  |
| Dim. D (in. $\pm 0.010$ / mm $\pm 0.25$ ) | 0.444 / 11.28 | 0.562 / 14.28 | 0.719 / 18.26 | 1.562 / 39.68 |
| Dim. E (in. $\pm 0.062$ / mm $\pm 1.57$ ) | 0.600 / 15.24 | 0.750 / 19.05 | 1.062 / 26.98 | 1.938 / 49.23 |
| Dim. F (in. $\pm 0.062$ / mm $\pm 1.57$ ) | 0.266 / 6.76  | 0.312 / 7.93  | 0.438 / 11.13 | 0.438 / 11.13 |
| Dim. G (in. $\pm 0.062$ / mm $\pm 1.57$ ) | 0.334 / 8.48  | 0.438 / 11.13 | 0.531 / 13.49 | 0.594 / 15.09 |
| Dim. H (in. $\pm 0.031$ / mm $\pm 0.79$ ) | 0.245 / 6.22  | 0.312 / 7.93  | 0.391 / 9.93  | 0.422 / 10.72 |
| Dim. J (in. $\pm 0.031$ / mm $\pm 0.79$ ) | 0.646 / 16.41 | 0.812 / 20.63 | 1.094 / 27.79 | 1.156 / 29.36 |
| Dim. K (in. $\pm 0.005$ / mm $\pm 0.13$ ) | 0.093 / 2.36  | 0.094 / 2.39  | 0.125 / 3.18  | 0.125 / 3.18  |
| Dim. L (in. $\pm 0.031$ / mm $\pm 0.79$ ) | 0.320 / 8.13  | 0.406 / 10.31 | 0.562 / 14.28 | 0.625 / 15.88 |
| Dim. M (in. $\pm 0.062$ / mm $\pm 1.57$ ) | 0.133 / 3.38  | 0.203 / 5.16  | 0.281 / 7.14  | 0.312 / 7.92  |
| Dim. N (in. $\pm 0.031$ / mm $\pm 0.79$ ) | 0.065 / 1.65  | 0.094 / 2.39  | 0.094 / 2.39  | 0.094 / 2.39  |
| Dim. P (in. $\pm 0.005$ / mm $\pm 0.13$ ) | 0.050 / 1.27  | 0.085 / 2.16  | 0.085 / 2.16  | 0.085 / 2.16  |
| Q min AWG                                 | 16            | 12            | 12            | 12            |
| Dim. R (in., min/mm, min)                 | 0.085/ 2.16   | 0.140/ 3.56   | 0.140/ 3.56   | 0.140/ 3.56   |

## ORDERING INFORMATION

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

**805NF5R0E**

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

## STANDARD PART NUMBERS

| Wattage     |          |      |      |      |      | Wattage     |          |      |      |      |      | Wattage     |          |      |      |      |      |
|-------------|----------|------|------|------|------|-------------|----------|------|------|------|------|-------------|----------|------|------|------|------|
| Ohmic value | Part No. | 5    | 10   | 25   | 50   | Ohmic value | Part No. | 5    | 10   | 25   | 50   | Ohmic value | Part No. | 5    | 10   | 25   | 50   |
| Prefix ▶    | Suffix ▼ | 805F | 810F | 825F | 850F | Prefix ▶    | Suffix ▼ | 805F | 810F | 825F | 850F | Prefix ▶    | Suffix ▼ | 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   |      |      | ✱    |      |

✓ = 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.

Check product availability at [www.ohmite.com](http://www.ohmite.com)

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