

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 | 0.010-75K | 520 |
| 850 | 50 | 0.005-100K | 1170 |

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

CHARACTERISTICS

| | |
|--|--|
| Housing | Metal, anodized aluminum |
| Internal Coating | Silicone |
| Core | Ceramic |
| Terminals | Solder-coated axial |
| Derating | Linearly from 100% @ +25°C to 0% @ +275°C. |
| 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 1 Ω : ± 90 ppm/°C; 1 to 9.99 Ω : ± 50 ppm/°C; 10 Ω and over: ± 20 ppm/°C. |
| Dielectric withstanding voltage | 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 max. | B max. | C max. | D max. | E max. | F ±.3mm | G ±.3mm | H max. | J max. | K max. | L ±.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. Prefix | 5 | 10 | 25 | | 50 | Part No. Prefix | 5 | 10 | | 25 | 50 | Part No. Prefix | 5 | 10 | 25 |
| 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

| | | |
|------------------|-----------|---------------|
| 805NF5R0E | | |
| Series | Tolerance | Ohms |
| 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 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.