

# 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

|                                        |                                                                                                                                                                                                                                                          |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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 1 $\Omega$ : $\pm 90$ ppm/°C; 1 to 9.99 $\Omega$ : $\pm 50$ ppm/°C; 10 $\Omega$ 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 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: 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.