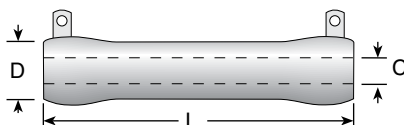


# 270 Series

## Vitreous Enamel Power



See page 36  
for mounting  
hardware

### FEATURES

- Terminals suitable for soldering or bolt connection.
- High wattage applications.
- Rugged lead free vitreous enamel coating.
- Flame resistant coating.
- All-welded construction.
- RoHS compliant product available. Add "E" suffix to part number to specify.

### SPECIFICATIONS

#### Material

**Coating:** Lead free vitreous enamel. Very large models (750 watts and up) are supplied in Silicone Ceramic. Also available in low-cost Centohm coating; Consult factory.

**Core:** Tubular ceramic.

**Terminals:** Solder coated radial lug. RoHS solder composition is 96% Sn, 3.5% Ag, 0.5% Cu

**Derating:** Linearly from 100% @ +25°C to 0% @ +350°C.

#### Electrical

##### Tolerance:

±5% 1Ω and over (J)  
±10% under 1Ω (K)

**Power rating:** Based on 25°C free air rating.

**Overload:** 10 times rated wattage for 5 seconds.

##### Temperature coefficient:

1 to 20Ω: ±400 ppm/°C.  
Above 20Ω: ±260 ppm/°C

##### Dielectric withstanding voltage:

1000 VAC: 12 to 100 watt rating.  
3000 VAC: 175 to 225 watt rating (Measured from terminal to mounting bracket)

**To calculate max. amps:** use the formula  $\sqrt{P/R}$

| Series | Wattage | Ohms      | Dimensions (in. / mm) |              |              | Core Code | Voltage | Standard Terminal |
|--------|---------|-----------|-----------------------|--------------|--------------|-----------|---------|-------------------|
|        |         |           | L                     | D            | C            |           |         |                   |
| L12    | 12      | 0.1-51K   | 1.75 / 44.4           | 0.313 / 7.94 | 0.188 / 4.76 | D         | 565     | 57                |
| L25    | 25      | 0.15-100K | 2.0 / 50.8            | 0.562 / 14.3 | 0.313 / 7.94 | K         | 625     | 40                |
| L50    | 50      | 0.38-260K | 4.0 / 101.6           | 0.562 / 14.3 | 0.313 / 7.94 | K         | 1625    | 40                |
| L100   | 100     | 0.23-101K | 6.5 / 165.1           | 0.750 / 19.1 | 0.50 / 12.7  | M         | 2845    | 40                |
| L175   | 175     | 0.13-101K | 8.5 / 215.9           | 1.125 / 28.6 | 0.75 / 19.1  | P         | 3595    | 46                |
| L225   | 225     | 0.16-129K | 10.5 / 266.7          | 1.125 / 28.6 | 0.75 / 19.1  | P         | 4595    | 46                |
| L500   | 500     | 0.38-218K | 12.0 / 304.8          | 2.50 / 63.5  | 1.75 / 44.5  | S         | 4970    | 45                |
| L1000  | 1000    | 0.69-392K | 20.0 / 508.0          | 2.50 / 63.5  | 1.75 / 44.5  | S         | 8900    | 45                |

Non-Inductive versions available; Other sizes available; Also available in low cost Centohm or Silicone coating; Consult Ohmite.  
\* Maximum Voltage is based on Ohm's Law  $[V=\sqrt{P \cdot R}]$  as limited by the resistance value of specified product

Select 270 Type fixed resistors for applications requiring wattage ratings from 12 to 1000 watts.

The 270 Type resistors are equipped with lug terminals suitable for soldering or sturdy bolt connection. When secure mounting is required, the hollow core of these resistors permit fastening with spring-type brackets, thru bolts or thru bolts with slotted-steel brackets.

Suitable for rugged applications, the 270 Type resistors feature all-welded construction and durable lead free vitreous enamel coating. Mounting brackets not included with resistors.

### ORDERING INFO

| Series           | Non-inductive<br>Blank = Standard<br>N = Non-inductive | RoHS Compliant  |
|------------------|--------------------------------------------------------|-----------------|
| L                | 25                                                     | J               |
| Coating          | Wattage                                                | Tolerance       |
| Blank = Vitreous | Blank = Standard                                       | J = 5%          |
| C = Centohm      |                                                        | K = 10%         |
| S = Silicone     |                                                        |                 |
|                  |                                                        | Ohms            |
|                  |                                                        | 1R0 = 1 Ω       |
|                  |                                                        | 250 = 250 Ω     |
|                  |                                                        | 1K0 = 1,000 Ω   |
|                  |                                                        | 25K = 25,000 Ω  |
|                  |                                                        | 25K5 = 25,500 Ω |

### MADE-TO-ORDER PARTS

| Non-inductive<br>Blank = Standard<br>N = Non-inductive | Core Diameter<br>See "Core and<br>Terminal Selection" | RoHS Compliant                                |
|--------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------|
| 270                                                    | 50                                                    | K                                             |
| Coating                                                | Wattage                                               | Ohms                                          |
| 270 = Vitreous                                         | Blank = Standard                                      | R500 = 0.500 Ω                                |
| 470 = Silicone Ceramic                                 |                                                       | 1R00 = 1 Ω                                    |
|                                                        |                                                       | 250R = 250 Ω                                  |
|                                                        |                                                       | 1K00 = 1,000 Ω                                |
|                                                        |                                                       | 25K0 = 25,000 Ω                               |
|                                                        |                                                       | 25K5 = 25,500 Ω                               |
|                                                        |                                                       | Tolerance                                     |
|                                                        |                                                       | J = 5%                                        |
|                                                        |                                                       | K = 10%                                       |
|                                                        |                                                       | Terminal Type                                 |
|                                                        |                                                       | See "Resistor Terminals<br>for Tubular Cores" |

See website for  
custom core and  
terminal info

**Power limitations for high resistance values:** When resistance exceeds the resistance values listed, derate the Power Rating by 25% to improve reliability:

| Power rating | Resistance value | No power derating necessary for ratings higher than 100W. |
|--------------|------------------|-----------------------------------------------------------|
| 12W          | 3,900Ω           |                                                           |
| 25W          | 12,000Ω          |                                                           |
| 50W          | 35,000Ω          |                                                           |
| 100W         | 75,000Ω          |                                                           |

### STANDARD PART NUMBERS FOR 270 SERIES

| Ohmic value |             |             |            | Wattage     |      |    |     |     |     |     |      |
|-------------|-------------|-------------|------------|-------------|------|----|-----|-----|-----|-----|------|
| Ohmic value | 12 Watt     | Ohmic value | 12 Watt    | Ohmic value | 25   | 50 | 100 | 175 | 225 | 500 | 1000 |
| 0.51        | ✓ L12JKR51E | 180         | ✓ L12J180E | 1           | 1R0E | ✓  | ✓   | ✓   | ✓   |     |      |
| 1           | ✓ L12J1R0E  | 270         | ✓ L12J270E | 2           | 2R0E | ✓  | ✓   | ✓   | ✓   |     |      |
| 3.3         | ✓ L12J3R3E  | 330         | ✓ L12J330E | 3           | 3R0E | ✓  | ✓   | ✓   | ✓   |     |      |
| 4.7         | ✓ L12J4R7E  | 390         | ✓ L12J390E | 4           | 4R0E | ✓  | ✓   | ✓   | ✓   |     |      |
| 10          | ✓ L12J10RE  | 470         | ✓ L12J470E | 5           | 5R0E | ✓  | ✓   | ✓   | ✓   |     |      |
| 12          | ✓ L12J12RE  | 560         | ✓ L12J560E | 10          | 10RE | ✓  | ✓   | ✓   | ✓   |     |      |
| 15          | ✓ L12J15RE  | 1000        | ✓ L12J1K0E | 15          | 15RE | ✓  |     |     |     |     |      |
| 22          | ✓ L12J22RE  | 1200        | ✓ L12J1K2E | 25          | 25RE | ✓  | ✓   | ✓   | ✓   |     |      |
| 27          | ✓ L12J27RE  | 1500        | ✓ L12J1K5E | 50          | 50RE | ✓  | ✓   | ✓   | ✓   |     |      |
| 33          | ✓ L12J33RE  | 2200        | ✓ L12J2K2E | 75          | 75RE | ✓  | ✓   | ✓   | ✓   |     |      |
| 47          | ✓ L12J47RE  | 2700        | ✓ L12J2K7E | 100         | 100E | ✓  | ✓   | ✓   | ✓   |     |      |
| 68          | ✓ L12J68RE  | 4700        | ✓ L12J4K7E | 125         | 125E |    | ✓   | ✓   |     |     |      |
| 82          | ✓ L12J82RE  | 10000       | ✓ L12J10KE | 150         | 150E | ✓  | ✓   | ✓   | ✓   |     |      |
| 100         | ✓ L12J100E  | 18000       | ✓ L12J18KE | 200         | 200E | ✓  | ✓   |     |     |     |      |
| 150         | ✓ L12J150E  | 22000       | ✓ L12J22KE | 250         | 250E | ✓  | ✓   | ✓   | ✓   |     |      |
|             |             | 51000       | ✓ L12J51KE | 500         | 500E | ✓  | ✓   | ✓   | ✓   |     |      |
|             |             |             |            | 750         | 750E | ✓  | ✓   | ✓   | ✓   |     |      |
|             |             |             |            | 800         | 800E | ✓  | ✓   |     |     |     |      |
|             |             |             |            | 1,000       | 1K0E | ✓  | ✓   | ✓   | ✓   |     |      |
|             |             |             |            | 1,500       | 1K5E | ✓  | ✓   |     | ✓   |     |      |
|             |             |             |            | 2,000       | 2K0E | ✓  | ✓   | ✓   | ✓   |     |      |

✓ = Standard values; check availability using the worldwide inventory search at [www.ohmite.com](http://www.ohmite.com)

Red outlined values supplied in Silicone-Ceramic coatings instead of vitreous enamel.

| Ohmic value |                        |    |    | Wattage |     |     |     |      |
|-------------|------------------------|----|----|---------|-----|-----|-----|------|
| Ohmic value | Part No. Prefix Suffix | 25 | 50 | 100     | 175 | 225 | 500 | 1000 |
| 2,500       | 2K5E                   | ✓  | ✓  | ✓       |     | ✓   |     |      |
| 3,000       | 3K0E                   | ✓  | ✓  | ✓       | ✓   | ✓   |     |      |
| 3,500       | 3K5E                   | ✓  |    |         |     |     |     |      |
| 4,000       | 4K0E                   | ✓  | ✓  |         |     |     |     |      |
| 5,000       | 5K0E                   | ✓  | ✓  | ✓       | ✓   | ✓   |     |      |
| 6,000       | 6K0E                   | ✓  |    |         |     |     |     |      |
| 7,500       | 7K5E                   | ✓  | ✓  | ✓       |     |     | ✓   |      |
| 10,000      | 10KE                   | ✓  | ✓  | ✓       | ✓   | ✓   |     |      |
| 12,000      | 12KE                   | ✓  |    |         |     |     |     |      |
| 15,000      | 15KE                   | ✓  | ✓  | ✓       |     |     | ✓   |      |
| 20,000      | 20KE                   | ✓  | ✓  | ✓       |     |     | ✓   |      |
| 25,000      | 25KE                   | ✓  |    |         |     |     | ✓   |      |
| 30,000      | 30KE                   |    |    |         |     |     | ✓   |      |
| 35,000      | 35KE                   |    | ✓  |         |     |     |     |      |
| 40,000      | 40KE                   | ✓  |    |         |     |     | ✓   |      |
| 50,000      | 50KE                   | ✓  | ✓  | ✓       |     |     | ✓   |      |
| 60,000      | 60KE                   |    |    |         |     |     | ✓   |      |
| 75,000      | 75KE                   |    | ✓  |         |     |     | ✓   |      |
| 100,000     | 100KE                  | ✓  |    | ✓       | ✓   | ✓   | ✓   |      |
| 150,000     | 150KE                  | ✓  |    |         |     |     |     |      |
| 200,000     | 200KE                  |    | ✓  |         |     |     |     |      |
| 250,000     | 250KE                  |    | ✓  |         |     |     |     |      |

✓ = Standard values; check availability using the worldwide inventory search at [www.ohmite.com](http://www.ohmite.com)

Red outlined values supplied in Silicone-Ceramic coatings instead of vitreous enamel.