

270 Series

Vitreous Enamel Power



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.

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 available
- “Fast on” option – see terminal 538, <http://www.ohmite.com/techdata/terminals.pdf>

SERIES SPECIFICATIONS

| Series | Wattage | Ohms | Core Code | Voltage | Std. Terminal |
|--------|---------|-----------|-----------|---------|---------------|
| L12 | 12 | 0.1-51K | D | 565 | 57 |
| L25 | 25 | 0.15-100K | K | 625 | 40 |
| L50 | 50 | 0.38-260K | K | 1625 | 40 |
| L100 | 100 | 0.23-101K | M | 2845 | 40 |
| L175 | 175 | 0.13-101K | P | 3595 | 46 |
| L225 | 225 | 0.16-129K | P | 4595 | 46 |
| L500 | 500 | 0.38-218K | S | 4970 | 45 |
| L1000 | 1000 | 0.69-392K | 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

CHARACTERISTICS

| Coating | Lead free vitreous enamel. Large models (500 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. | | | | | | | | | | |
| 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) | | | | | | | | | | |
| Max. amps | use the formula $\sqrt{P/R}$ | | | | | | | | | | |
| Power limitations for high resistance values | When resistance exceeds the resistance values listed, derate the Power Rating by 25% to improve reliability. <i>No power derating necessary for ratings higher than 100W.</i> | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>Power rating</th> <th>Resistance value</th> </tr> </thead> <tbody> <tr> <td>12W</td> <td>3,900Ω</td> </tr> <tr> <td>25W</td> <td>12,000Ω</td> </tr> <tr> <td>50W</td> <td>35,000Ω</td> </tr> <tr> <td>100W</td> <td>75,000Ω</td> </tr> </tbody> </table> | Power rating | Resistance value | 12W | 3,900Ω | 25W | 12,000Ω | 50W | 35,000Ω | 100W | 75,000Ω |
| Power rating | Resistance value | | | | | | | | | | |
| 12W | 3,900Ω | | | | | | | | | | |
| 25W | 12,000Ω | | | | | | | | | | |
| 50W | 35,000Ω | | | | | | | | | | |
| 100W | 75,000Ω | | | | | | | | | | |

Mounting Hardware see <http://www.ohmite.com/techdata/lug-mounting.php>

(continued)

270 Series

Vitreous Enamel Power

DIMENSIONS

in./mm



| Series | Wattage | L | | D | | C | Core Code* | Std. Term.** |
|--------|---------|------|-------|-------|------|--------------|------------|--------------|
| L12 | 12 | 1.75 | 44.4 | 0.313 | 7.94 | 0.188 / 4.76 | D | 57 |
| L25 | 25 | 2.0 | 50.8 | 0.562 | 14.3 | 0.313 / 7.94 | K | 40 |
| L50 | 50 | 4.0 | 101.6 | 0.562 | 14.3 | 0.313 / 7.94 | K | 40 |
| L100 | 100 | 6.5 | 165.1 | 0.750 | 19.1 | 0.50 / 12.7 | M | 40 |
| L175 | 175 | 8.5 | 215.9 | 1.125 | 28.6 | 0.75 / 19.1 | P | 46 |
| L225 | 225 | 10.5 | 266.7 | 1.125 | 28.6 | 0.75 / 19.1 | P | 46 |
| L500 | 500 | 12.0 | 304.8 | 2.50 | 63.5 | 1.75 / 44.5 | S | 45 |
| L1000 | 1000 | 20.0 | 508.0 | 2.50 | 63.5 | 1.75 / 44.5 | S | 45 |

* <http://www.ohmite.com/techdata/200-210-270-custom.pdf>

** <http://www.ohmite.com/techdata/terminals.pdf>

ORDERING INFORMATION

Standard

| | | |
|--|--|---|
| F = Fast on (optional) | Non-inductive Blank = Standard N = Non-inductive | RoHS Compliant |
| L | 25 | J 100 E |
| Series | Wattage | Tolerance |
| Coating Blank = Vitreous C = Centohm S = Silicone | | J = 5% K = 10% |
| | | Ohms 1R0 = 1Ω 250 = 250Ω 1K0 = 1,000Ω 25K = 25,000Ω 25K5 = 25,500Ω |

Made-to-order

| | | |
|--|---|--|
| Non-inductive Blank = Standard N = Non-inductive | Core Diameter See "Core and Terminal Selection" | RoHS Compliant |
| 270 | 50 | K 405 R 00 J E |
| Coating 270 = Vitreous 470 = Silicone Ceramic | Wattage | Ohms |
| | | R500 = 0.500Ω 1R00 = 1Ω 250R = 250Ω 1K00 = 1,000Ω 25K0 = 25,000Ω 25K5 = 25,500Ω |
| | Terminal Type See "Resistor Terminals for Tubular Cores" | Tolerance J = 5% K = 10% |

See website for custom core and terminal info

Standard part numbers for 270 series

| Ohmic value | 12 Watt | | Ohmic value | 12 Watt | | Wattage | | | | | | | Wattage | | | | | | | | | | |
|-------------|---------|-----------|-------------|---------|----------|------------------------|------|----|-----|-----|-----|-----|---------|------------------------|-------|----|-----|-----|-----|-----|------|---|---|
| | ✓ | | | ✓ | | Part No. Prefix Suffix | 25 | 50 | 100 | 175 | 225 | 500 | 1000 | Part No. Prefix Suffix | 25 | 50 | 100 | 175 | 225 | 500 | 1000 | | |
| 0.51 | ✓ | L12JKR51E | 180 | ✓ | L12J180E | 1 | 1R0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 2,500 | 2K5E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1 | ✓ | L12J1R0E | 270 | ✓ | L12J270E | 2 | 2R0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 3,000 | 3K0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 3.3 | ✓ | L12J3R3E | 330 | ✓ | L12J330E | 3 | 3R0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 3,500 | 3K5E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4.7 | ✓ | L12J4R7E | 390 | ✓ | L12J390E | 4 | 4R0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 4,000 | 4K0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10 | ✓ | L12J10RE | 470 | ✓ | L12J470E | 5 | 5R0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 5,000 | 5K0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12 | ✓ | L12J12RE | 560 | ✓ | L12J560E | 10 | 10RE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 6,000 | 6K0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15 | ✓ | L12J15RE | 1000 | ✓ | L12J1K0E | 15 | 15RE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 7,500 | 7K5E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 22 | ✓ | L12J22RE | 1200 | ✓ | L12J1K2E | 25 | 25RE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10,000 | 10KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 27 | ✓ | L12J27RE | 1500 | ✓ | L12J1K5E | 50 | 50RE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 12,000 | 12KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 33 | ✓ | L12J33RE | 2200 | ✓ | L12J2K2E | 75 | 75RE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 15,000 | 15KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 47 | ✓ | L12J47RE | 2700 | ✓ | L12J2K7E | 100 | 100E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 20,000 | 20KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 68 | ✓ | L12J68RE | 4700 | ✓ | L12J4K7E | 125 | 125E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 25,000 | 25KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 82 | ✓ | L12J82RE | 10000 | ✓ | L12J10KE | 150 | 150E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 30,000 | 30KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 100 | ✓ | L12J100E | 18000 | ✓ | L12J18KE | 200 | 200E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 35,000 | 35KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 150 | ✓ | L12J150E | 22000 | ✓ | L12J22KE | 250 | 250E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 40,000 | 40KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | 51000 | ✓ | L12J51KE | 500 | 500E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 50,000 | 50KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | 750 | 750E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 60,000 | 60KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | 800 | 800E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 75,000 | 75KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | 1,000 | 1K0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 100,000 | 100KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | 1,500 | 1K5E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 150,000 | 150KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | 2,000 | 2K0E | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 200,000 | 200KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | | | | | | | | | 250,000 | 250KE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

✓ = Standard values; check availability using the worldwide inventory search at www.ohmite.com

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