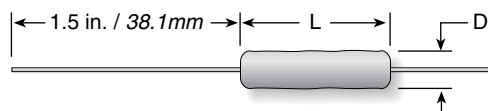


# 20 Series

## Vitreous Enamel Conformal Axial Terminal Wirewound, 5% Tolerance Standard



| Series | Wattage | Ohms     | Dimensions (in. / mm) |              | Max. Volt. ** | Lead ga. |
|--------|---------|----------|-----------------------|--------------|---------------|----------|
|        |         |          | Length*               | Diam.*       |               |          |
| 21     | 1       | 1.0-3.0K | 0.421 / 10.7          | 0.156 / 4.0  | 75            | 24       |
| 22     | 2       | 1.0-3.0K | 0.421 / 10.7          | 0.219 / 5.6  | 65            | 20       |
| 23     | 3       | 0.1-10K  | 0.515 / 13.1          | 0.220 / 5.6  | 135           | 20       |
| 25     | 5       | 0.1-28K  | 1.015 / 25.8          | 0.276 / 7.0  | 330           | 20       |
| 27     | 7       | 0.1-25K  | 1.265 / 32.1          | 0.394 / 10.0 | 450           | 20       |
| 20     | 10      | 0.1-100K | 1.859 / 47.2          | 0.394 / 10.0 | 720           | 20       |

12.5 watt size available on special order

\*For units below 1Ω, add 15% to body diameter, 10% to body length.

\*\*Maximum Voltage is based on Ohm's Law  $[V=\sqrt{P \cdot R}]$  as limited by the resistance value of specified product

The 20 Series axial terminal resistors are both durable and economical. They have all the electrical attributes of the more expensive 90 Series resistors, including all-welded construction.

They offer the durability of a lead free conformal vitreous enamel coating and are ideal for computer, communications and industrial applications in which cost, quality, and reliability are key considerations.

## FEATURES

- Rugged vitreous enamel coating withstands high humidity and temperature cycling.
- Durable construction, recommended for industrial applications where reliability is paramount.
- All-welded construction.
- Flame resistant lead free vitreous enamel coating.
- RoHS compliant; Add "E" suffix to part number to specify.

## SPECIFICATIONS

### Material

**Coating:** Conformal lead free vitreous enamel.

**Core:** Ceramic.

**Terminals:** Solder-coated axial.

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% standard.

Other tolerances available.

**Power rating:** Based on 25°C free air rating (other wattages available).

### Overload:

Under 7 watts: 5 times rated wattage for 5 seconds.  
7 watts and over: 10 times rated wattage for 5 seconds.

**Temperature coefficient:**

1 to 9.99 ohms: ±50 ppm/°C  
10 ohms and over: ±30 ppm/°C

## ORDERING INFORMATION

| RoHS Compliant  |         |           |                  |
|-----------------|---------|-----------|------------------|
| 21JR10E         |         |           |                  |
| 20 Series       | Wattage | Tolerance | Resistance Value |
| Vitreous Enamel | 1 = 1W  | J = 5%    | R10 = 0.10Ω      |
| Axial Lead      | 2       |           | 1R0 = 1.0Ω       |
| Wirewound       | 3       |           | 10R = 10.0Ω      |
|                 | 5       |           | 250 = 250Ω       |
|                 | 7       |           | 1K0 = 1,000Ω     |
|                 | 0 = 10W |           | 4K5 = 4,500Ω     |
|                 |         |           | 50K = 50,000Ω    |

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

## STANDARD PART NUMBERS FOR 20 SERIES

| Ohmic value | Part No. Prefix Suffix | Wattage |   |   |   |   |    | Ohmic value | Part No. Prefix Suffix | Wattage |   |   |   |   |    | Ohmic value  | Part No. Prefix Suffix | Wattage |   |   |   |   |    |
|-------------|------------------------|---------|---|---|---|---|----|-------------|------------------------|---------|---|---|---|---|----|--------------|------------------------|---------|---|---|---|---|----|
|             |                        | 1       | 2 | 3 | 5 | 7 | 10 |             |                        | 1       | 2 | 3 | 5 | 7 | 10 |              |                        | 1       | 2 | 3 | 5 | 7 | 10 |
| 0.10 — R10  |                        |         |   | ✓ | ✓ |   | ✓  | 62 — 62R    | ✱                      | ✱       | ✓ | ✓ | ✓ | ✱ | ✓  | 1,800 — 1K8  |                        | ✓       | ✓ | ✓ | ✱ | ✱ | ✱  |
| 0.13 — R13  |                        |         |   | ✓ | ✓ |   | ✓  | 68 — 68R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 2,000 — 2K0  | ✓                      | ✓       | ✓ | ✓ | ✱ | ✱ | ✓  |
| 0.15 — R15  |                        |         |   | ✓ | ✓ |   | ✓  | 75 — 75R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 2,200 — 2K2  | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  |
| 0.20 — R20  |                        |         |   | ✓ | ✓ |   | ✓  | 82 — 82R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 2,500 — 2K5  | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  |
| 0.25 — R25  |                        |         |   | ✓ | ✓ |   | ✓  | 100 — 100   | ✓                      | ✱       | ✓ | ✓ | ✓ | ✓ | ✓  | 2,700 — 2K7  | ✓                      | ✓       | ✓ | ✓ | ✱ | ✓ | ✓  |
| 0.30 — R30  |                        |         |   | ✓ | ✓ |   | ✓  | 120 — 120   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 3,000 — 3K0  | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  |
| 0.33 — R33  |                        |         |   | ✓ | ✓ |   | ✓  | 125 — 125   | ✱                      | ✱       | ✓ | ✓ | ✓ | ✱ | ✓  | 3,300 — 3K3  |                        |         |   | ✓ | ✓ | ✱ | ✓  |
| 0.50 — R50  |                        |         |   | ✓ | ✓ |   | ✓  | 150 — 150   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 3,500 — 3K5  |                        |         |   | ✓ | ✓ | ✱ | ✓  |
| 0.75 — R75  |                        |         |   | ✓ | ✓ |   | ✓  | 180 — 180   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 3,900 — 3K9  |                        |         |   | ✓ | ✓ | ✱ | ✓  |
| 1 — 1R0     | ✓                      | ✓       | ✓ | ✓ | ✓ | ✓ | ✓  | 200 — 200   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✓ | ✓  | 4,000 — 4K0  |                        |         |   | ✓ | ✓ | ✱ | ✓  |
| 1.5 — 1R5   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✓ | ✓  | 220 — 220   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 4,500 — 4K5  |                        |         |   | ✓ | ✓ | ✱ | ✓  |
| 2 — 2R0     | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 225 — 225   | ✓                      | ✱       | ✱ | ✱ | ✱ | ✱ | ✓  | 4,700 — 4K7  |                        |         |   | ✓ | ✓ | ✓ | ✓  |
| 2.2 — 2R2   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 250 — 250   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 5,000 — 5K0  |                        |         |   | ✓ | ✓ | ✓ | ✓  |
| 3 — 3R0     | ✓                      | ✓       | ✓ | ✓ | ✓ | ✓ | ✓  | 270 — 270   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 6,000 — 6K0  |                        |         |   | ✓ | ✓ | ✓ | ✓  |
| 4 — 4R0     | ✓                      | ✱       | ✓ | ✓ | ✓ | ✱ | ✓  | 300 — 300   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 6,800 — 6K8  |                        |         |   | ✓ | ✓ | ✱ | ✓  |
| 5 — 5R0     | ✓                      | ✓       | ✓ | ✓ | ✓ | ✓ | ✓  | 330 — 330   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 7,000 — 7K0  |                        |         |   | ✓ | ✓ | ✱ | ✓  |
| 7.5 — 7R5   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 350 — 350   | ✓                      | ✓       | ✱ | ✱ | ✱ | ✱ | ✓  | 7,500 — 7K5  |                        |         |   | ✓ | ✓ | ✓ | ✓  |
| 10 — 10R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 390 — 390   | ✓                      | ✓       | ✱ | ✱ | ✱ | ✱ | ✓  | 8,000 — 8K0  |                        |         |   | ✓ | ✓ | ✓ | ✓  |
| 12 — 12R    | ✱                      | ✱       | ✓ | ✓ | ✓ | ✱ | ✓  | 400 — 400   | ✱                      | ✱       | ✓ | ✓ | ✓ | ✱ | ✓  | 9,000 — 9K0  |                        |         |   | ✓ | ✱ | ✱ | ✓  |
| 15 — 15R    | ✓                      | ✱       | ✓ | ✱ | ✓ | ✓ | ✓  | 450 — 450   | ✱                      | ✱       | ✱ | ✓ | ✓ | ✱ | ✓  | 10,000 — 10K |                        |         |   | ✓ | ✓ | ✱ | ✓  |
| 18 — 18R    | ✓                      | ✱       | ✓ | ✓ | ✓ | ✱ | ✓  | 470 — 470   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 12,000 — 12K |                        |         |   | ✓ | ✱ | ✓ | ✓  |
| 20 — 20R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 500 — 500   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 13,000 — 13K |                        |         |   |   | ✓ | ✓ | ✓  |
| 22 — 22R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 560 — 560   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 15,000 — 15K |                        |         |   | ✓ | ✱ | ✓ | ✓  |
| 25 — 25R    | ✱                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 600 — 600   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 17,000 — 17K |                        |         |   |   | ✓ | ✱ | ✓  |
| 27 — 27R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 680 — 680   | ✓                      | ✱       | ✓ | ✓ | ✓ | ✱ | ✓  | 20,000 — 20K |                        |         |   | ✓ | ✓ | ✓ | ✓  |
| 30 — 30R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 750 — 750   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 22,000 — 22K |                        |         |   | ✓ | ✓ | ✱ | ✓  |
| 33 — 33R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✓ | ✓  | 800 — 800   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 25,000 — 25K |                        |         |   | ✓ | ✱ | ✓ | ✓  |
| 35 — 35R    | ✱                      | ✱       | ✱ | ✓ | ✓ | ✱ | ✓  | 820 — 820   | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 30,000 — 30K |                        |         |   |   | ✓ | ✓ | ✓  |
| 39 — 39R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 900 — 900   | ✱                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 33,000 — 33K |                        |         |   |   |   | ✓ | ✓  |
| 40 — 40R    | ✓                      | ✱       | ✓ | ✓ | ✓ | ✱ | ✓  | 1,000 — 1K0 | ✓                      | ✓       | ✓ | ✓ | ✓ | ✓ | ✓  | 35,000 — 35K |                        |         |   |   |   | ✓ | ✓  |
| 47 — 47R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 1,100 — 1K1 | ✱                      | ✱       | ✓ | ✓ | ✓ | ✱ | ✓  | 40,000 — 40K |                        |         |   |   |   |   | ✓  |
| 50 — 50R    | ✓                      | ✓       | ✓ | ✓ | ✓ | ✓ | ✓  | 1,200 — 1K2 | ✓                      | ✓       | ✓ | ✓ | ✓ | ✓ | ✓  | 50,000 — 50K |                        |         |   |   |   |   | ✓  |
| 56 — 56R    | ✱                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  | 1,500 — 1K5 | ✓                      | ✓       | ✓ | ✓ | ✓ | ✱ | ✓  |              |                        |         |   |   |   |   | ✓  |

✓ = 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.