

# 200 Series

## Brown Devil® Vitreous Enamel Power



Ohmite's Brown Devil® is a small, exceptionally durable power resistor. It features all-welded construction and rugged, flame resistant conformal lead free vitreous enamel coating to ensure successful performance under high temperatures.

The wirewound 200 Series has a hollow-core construction, which accommodates rigid mounting with brackets or thru bolts.

Mounting brackets not included with resistors.



### FEATURES

- Rugged lead free vitreous enamel coating
- All-welded construction.
- Self supporting terminal mounting option.
- Higher power ratings.
- Flame-resistant lead free vitreous enamel coating.
- RoHS compliant product available. Add "E" suffix to part number to specify.

### SERIES SPECIFICATIONS

| Series | Wattage | Ohms     | Lead Gauge | Max. Voltage* |
|--------|---------|----------|------------|---------------|
| B5     | 5.25    | 0.1-20K  | 20         | 187           |
| B8     | 8.0     | 0.03-25K | 18         | 250           |
| B12    | 12.0    | 0.08-51K | 18         | 625           |
| B20    | 20.0    | 0.1-100K | 18         | 750           |

Non-Inductive versions available. Insert "N" before tolerance code.

**Example:** B5NJ10RE

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

|                                |                                                                   |
|--------------------------------|-------------------------------------------------------------------|
| <b>Coating</b>                 | lead-free vitreous enamel                                         |
| <b>Core</b>                    | Ceramic                                                           |
| <b>Terminals</b>               | Tinned axial; RoHS solder composition is 96% Sn, 3.5% Ag, 0.5% Cu |
| <b>Derating</b>                | Linearly from 100% @ +25°C to 0% @ +350°C                         |
| <b>Tolerance</b>               | 1Ω+: ±5%<br>under 1Ω: ±10%                                        |
| <b>Power rating</b>            | Based on 25°C free air rating                                     |
| <b>Overload</b>                | 10 times rated wattage for 5 seconds                              |
| <b>Temperature coefficient</b> | 5Ω and under: ±400 ppm/°C<br>Above 5Ω: ±260 ppm/°C                |
| <b>Max. amps</b>               | To calculate, use the formula $\sqrt{P/R}$                        |

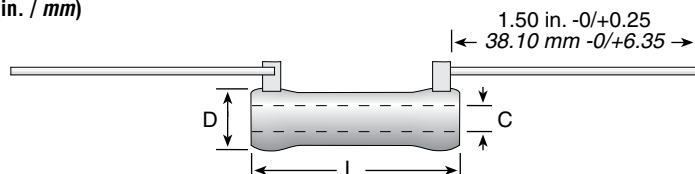
(continued)

# 200 Series

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### DIMENSIONS

(in. / mm)



| Series | Wattage | L             | D             | C            | Lead Gauge |
|--------|---------|---------------|---------------|--------------|------------|
| B5     | 5.25    | 0.625 / 15.88 | 0.250 / 6.35  | 0.135 / 3.43 | 20         |
| B8     | 8.0     | 1.000 / 25.40 | 0.313 / 7.94  | 0.188 / 4.76 | 18         |
| B12    | 12.0    | 1.750 / 44.45 | 0.313 / 7.94  | 0.188 / 4.76 | 18         |
| B20    | 20.0    | 2.000 / 50.80 | 0.438 / 11.11 | 0.250 / 6.35 | 18         |

### ORDERING INFORMATION

#### Standard Values

| Wattage     |          |        |      |   |    | Wattage |             |          |        |      |   | Wattage |    |             |          |        |      | Wattage |    |    |             |          |        | Wattage |      |    |    |        |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
|-------------|----------|--------|------|---|----|---------|-------------|----------|--------|------|---|---------|----|-------------|----------|--------|------|---------|----|----|-------------|----------|--------|---------|------|----|----|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|------|---|---|---|
| Ohmic value | Part No. |        | 5.25 | 8 | 12 | 20      | Ohmic value | Part No. |        | 5.25 | 8 | 12      | 20 | Ohmic value | Part No. |        | 5.25 | 8       | 12 | 20 | Ohmic value | Part No. |        | 5.25    | 8    | 12 | 20 |        |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
|             | Prefix   | Suffix |      |   |    |         |             | Prefix   | Suffix |      |   |         |    |             | Prefix   | Suffix |      |         |    |    |             | Prefix   | Suffix |         |      |    |    | Prefix | Suffix                                                                                                                                                                                                                                                                                                                  |        |       |      |   |   |   |
| 0.5         | R        | 50E    |      |   |    |         | 20          | —        | 20RE   | ✓    | ✓ | ✓       |    | 270         | —        | 270E   | ✓    |         |    |    |             | 2,250    | —      | 2K25E   | ✓    | ✓  |    |        | 16,000                                                                                                                                                                                                                                                                                                                  | —      | 16KE  |      |   |   |   |
| 1           | —        | 1R0E   | ✓    | ✓ | ✓  | ✓       | 22          | —        | 22RE   | ✓    |   |         |    | 300         | —        | 300E   |      | ✓       | ✓  | ✓  |             | 2,400    | —      | 2K4E    |      |    |    |        | 17,500                                                                                                                                                                                                                                                                                                                  | —      | 17K5E | ✓    | ✓ |   |   |
| 1.1         | —        | 1R1E   |      |   |    |         | 24          | —        | 24RE   | ✓    |   |         |    | 330         | —        | 330E   |      |         |    |    |             | 2,500    | —      | 2K5E    |      |    | ✓  |        | 18,000                                                                                                                                                                                                                                                                                                                  | —      | 18KE  |      | ✓ |   |   |
| 1.2         | —        | 1R2E   |      |   |    |         | 25          | —        | 25RE   |      | ✓ | ✓       | ✓  | 350         | —        | 350E   | ✓    |         | ✓  | ✓  |             | 2,700    | —      | 2K7E    | ✓    |    |    |        | 20,000                                                                                                                                                                                                                                                                                                                  | —      | 20KE  | ✓    | ✓ | ✓ |   |
| 1.3         | —        | 1R3E   |      |   |    |         | 27          | —        | 27RE   | ✓    |   |         |    | 360         | —        | 360E   |      |         |    |    |             | 2,750    | —      | 2K75E   |      |    | ✓  |        | 22,500                                                                                                                                                                                                                                                                                                                  | —      | 22K5E |      | ✓ |   |   |
| 1.5         | —        | 1R5E   | ✓    | ✓ | ✓  |         | 30          | —        | 30RE   | ✓    | ✓ | ✓       |    | 390         | —        | 390E   | ✓    |         |    |    |             | 3,000    | —      | 3K0E    | ✓    | ✓  | ✓  | ✓      | 25,000                                                                                                                                                                                                                                                                                                                  | —      | 25KE  |      | ✓ | ✓ |   |
| 1.6         | —        | 1R6E   | ✓    |   |    |         | 33          | —        | 33RE   | ✓    |   |         |    | 400         | —        | 400E   |      | ✓       | ✓  | ✓  |             | 3,300    | —      | 3K3E    | ✓    |    |    |        | 30,000                                                                                                                                                                                                                                                                                                                  | —      | 30KE  |      | ✓ | ✓ |   |
| 1.8         | —        | 1R8E   |      |   |    |         | 35          | —        | 35RE   |      |   | ✓       | ✓  | 430         | —        | 430E   |      |         |    |    |             | 3,500    | —      | 3K5E    |      | ✓  | ✓  | ✓      | 35,000                                                                                                                                                                                                                                                                                                                  | —      | 35KE  |      |   | ✓ |   |
| 2           | —        | 2R0E   | ✓    | ✓ | ✓  | ✓       | 36          | —        | 36RE   |      |   |         |    | 450         | —        | 450E   |      | ✓       |    | ✓  |             | 3,600    | —      | 3K6E    |      |    |    |        | 40,000                                                                                                                                                                                                                                                                                                                  | —      | 40KE  |      | ✓ | ✓ |   |
| 2.2         | —        | 2R2E   |      |   |    |         | 39          | —        | 39RE   | ✓    |   |         |    | 470         | —        | 470E   | ✓    |         |    |    |             | 3,900    | —      | 3K9E    | ✓    |    |    |        | 45,000                                                                                                                                                                                                                                                                                                                  | —      | 45KE  |      | ✓ |   |   |
| 2.4         | —        | 2R4E   | ✓    |   |    |         | 40          | —        | 40RE   |      |   | ✓       | ✓  | ✓           | 500      | —      | 500E |         | ✓  | ✓  | ✓           |          | 4,000  | —       | 4K0E |    | ✓  | ✓      | ✓                                                                                                                                                                                                                                                                                                                       | 50,000 | —     | 50KE |   | ✓ | ✓ |
| 2.7         | —        | 2R7E   | ✓    |   |    |         | 43          | —        | 43RE   | ✓    |   |         |    | 510         | —        | 510E   | ✓    |         |    |    |             | 4,300    | —      | 4K3E    |      |    |    |        | 55,000                                                                                                                                                                                                                                                                                                                  | —      | 55KE  |      |   |   |   |
| 3           | —        | 3R0E   | ✓    | ✓ | ✓  |         | 47          | —        | 47RE   | ✓    |   |         |    | 560         | —        | 560E   |      |         |    |    |             | 4,500    | —      | 4K5E    | ✓    |    | ✓  | ✓      | 60,000                                                                                                                                                                                                                                                                                                                  | —      | 60KE  |      |   |   |   |
| 3.3         | —        | 3R3E   |      |   |    |         | 50          | —        | 50RE   |      |   | ✓       | ✓  | ✓           | 600      | —      | 600E |         | ✓  | ✓  |             |          | 4,700  | —       | 4K7E | ✓  |    |        |                                                                                                                                                                                                                                                                                                                         | 65,000 | —     | 65KE |   |   |   |
| 3.6         | —        | 3R6E   | ✓    |   |    |         | 51          | —        | 51RE   | ✓    |   |         |    | 620         | —        | 620E   | ✓    |         |    |    |             | 5,000    | —      | 5K0E    |      | ✓  | ✓  | ✓      | 70,000                                                                                                                                                                                                                                                                                                                  | —      | 70KE  |      |   |   |   |
| 3.9         | —        | 3R9E   | ✓    |   |    |         | 56          | —        | 56RE   | ✓    |   |         |    | 650         | —        | 650E   |      |         |    | ✓  |             | 5,100    | —      | 5K1E    | ✓    |    |    |        | 75,000                                                                                                                                                                                                                                                                                                                  | —      | 75KE  |      |   |   |   |
| 4           | —        | 4R0E   |      | ✓ | ✓  | ✓       | 62          | —        | 62RE   | ✓    |   |         |    | 680         | —        | 680E   | ✓    |         |    |    |             | 5,600    | —      | 5K6E    |      |    |    |        | 80,000                                                                                                                                                                                                                                                                                                                  | —      | 80KE  |      |   | ✓ |   |
| 4.3         | —        | 4R3E   | ✓    |   |    |         | 68          | —        | 68RE   | ✓    |   |         |    | 700         | —        | 700E   |      |         | ✓  | ✓  |             |          | 6,000  | —       | 6K0E |    | ✓  | ✓      | ✓                                                                                                                                                                                                                                                                                                                       | 85,000 | —     | 85KE |   |   |   |
| 4.7         | —        | 4R7E   | ✓    |   |    |         | 75          | —        | 75RE   | ✓    | ✓ | ✓       | ✓  | 750         | —        | 750E   | ✓    | ✓       | ✓  | ✓  |             | 6,200    | —      | 6K2E    | ✓    |    |    |        | 90,000                                                                                                                                                                                                                                                                                                                  | —      | 90KE  |      |   |   |   |
| 5           | —        | 5R0E   |      | ✓ | ✓  | ✓       | 82          | —        | 82RE   | ✓    |   |         |    | 800         | —        | 800E   |      | ✓       | ✓  | ✓  |             | 6,800    | —      | 6K8E    | ✓    |    |    |        | 95,000                                                                                                                                                                                                                                                                                                                  | —      | 95KE  |      |   |   |   |
| 5.1         | —        | 5R1E   | ✓    |   |    |         | 91          | —        | 91RE   | ✓    |   |         |    | 820         | —        | 820E   | ✓    |         |    |    |             | 7,000    | —      | 7K0E    |      | ✓  | ✓  | ✓      | 100,000                                                                                                                                                                                                                                                                                                                 | —      | 100KE |      |   |   |   |
| 5.6         | —        | 5R6E   | ✓    |   |    |         | 100         | —        | 100E   | ✓    | ✓ | ✓       | ✓  | 900         | —        | 900E   |      | ✓       | ✓  |    |             | 7,500    | —      | 7K5E    | ✓    | ✓  | ✓  | ✓      | ✓ = Standard values; check availability at <a href="http://www.ohmite.com">www.ohmite.com</a><br><br>These values involve very fine resistance wire and should not be used in critical applications without burn-in and/or thermal cycling:<br><br>B5: 6.8K-20KΩ<br>B8: 12.5K-25KΩ<br>B12: 30K-51KΩ<br>B20: 22.5K-100KΩ |        |       |      |   |   |   |
| 6.2         | —        | 6R2E   | ✓    |   |    |         | 110         | —        | 110E   |      |   |         |    | 910         | —        | 910E   |      |         |    |    |             | 8,000    | —      | 8K0E    |      | ✓  | ✓  | ✓      |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 6.8         | —        | 6R8E   | ✓    |   |    |         | 120         | —        | 120E   | ✓    |   |         |    | 1,000       | —        | 1K0E   | ✓    | ✓       | ✓  | ✓  |             | 8,200    | —      | 8K2E    | ✓    |    |    |        |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 7.5         | —        | 7R5E   | ✓    | ✓ | ✓  |         | 125         | —        | 125E   |      | ✓ | ✓       | ✓  | 1,100       | —        | 1K1E   | ✓    | ✓       |    |    |             | 8,500    | —      | 8K5E    |      |    |    |        |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 8.2         | —        | 8R2E   | ✓    |   |    |         | 130         | —        | 130E   |      |   | ✓       |    | 1,200       | —        | 1K2E   | ✓    |         | ✓  | ✓  |             | 9,000    | —      | 9K0E    |      | ✓  |    | ✓      |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 9.1         | —        | 9R1E   | ✓    |   |    |         | 150         | —        | 150E   | ✓    | ✓ |         | ✓  | 1,250       | —        | 1K25E  | ✓    | ✓       | ✓  |    |             | 9,100    | —      | 9K1E    |      |    |    |        |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 10          | —        | 10RE   | ✓    | ✓ | ✓  | ✓       | 160         | —        | 160E   | ✓    |   |         |    | 1,300       | —        | 1K3E   | ✓    |         | ✓  | ✓  |             | 10,000   | —      | 10KE    |      | ✓  | ✓  | ✓      |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 11          | —        | 11RE   |      |   |    |         | 180         | —        | 180E   | ✓    |   |         |    | 1,500       | —        | 1K5E   | ✓    | ✓       | ✓  | ✓  |             | 11,000   | —      | 11KE    |      |    | ✓  |        |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 12          | —        | 12RE   | ✓    | ✓ | ✓  |         | 200         | —        | 200E   | ✓    | ✓ | ✓       | ✓  | 1,600       | —        | 1K6E   |      |         |    |    |             | 12,000   | —      | 12KE    | ✓    |    | ✓  |        |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 13          | —        | 13RE   |      |   |    |         | 220         | —        | 220E   | ✓    |   |         |    | 1,750       | —        | 1K75E  |      | ✓       | ✓  | ✓  |             | 12,500   | —      | 12K5E   |      | ✓  | ✓  | ✓      |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 15          | —        | 15RE   | ✓    | ✓ | ✓  |         | 225         | —        | 225E   |      |   | ✓       |    | 1,800       | —        | 1K8E   |      |         |    |    |             | 13,000   | —      | 13KE    | ✓    |    |    |        |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 16          | —        | 16RE   |      |   |    |         | 240         | —        | 240E   | ✓    |   |         |    | 2,000       | —        | 2K0E   | ✓    | ✓       | ✓  |    |             | 13,500   | —      | 13K5E   |      |    | ✓  |        |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |
| 18          | —        | 18RE   |      |   |    |         | 250         | —        | 250E   |      | ✓ | ✓       | ✓  | 2,200       | —        | 2K2E   | ✓    |         |    |    |             | 15,000   | —      | 15KE    | ✓    | ✓  | ✓  | ✓      |                                                                                                                                                                                                                                                                                                                         |        |       |      |   |   |   |

|                                                            |                                                    |                                                                                   |                |
|------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------|----------------|
| Coating<br>Blank = Vitreous<br>C = Centohm<br>S = Silicone | Wattage                                            | Non-Inductive Winding<br>Optional (blank = std. winding)                          | RoHS Compliant |
| <b>B 8 N J 5 R 0 E</b>                                     |                                                    |                                                                                   |                |
| Series                                                     | Tolerance<br>F = 1%<br>H = 3%<br>J = 5%<br>K = 10% | Ohms<br>1R0 = 1Ω<br>250 = 250Ω<br>1K0 = 1,000Ω<br>25K = 25,000Ω<br>25K5 = 25,500Ω |                |

#### Made-to-order Parts

|                                                          |                                                    |                                                                                                        |
|----------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Non-Inductive Winding<br>Optional (blank = std. winding) | Core Diameter<br>See "Core and Terminal Selection" | RoHS Compliant                                                                                         |
| <b>200 N 8 D 5 R 000 J E</b>                             |                                                    |                                                                                                        |
| Coating<br>200 = Vitreous<br>400 = Silicone<br>Ceramic   | Wattage<br>3<br>5.25<br>8<br>12<br>20              | Ohms<br>R500 = 0.500Ω<br>1R00 = 1Ω<br>250R = 250Ω<br>1K00 = 1,000Ω<br>25K0 = 25,000Ω<br>25K5 = 25,500Ω |
|                                                          |                                                    | Tolerance<br>F = 1%<br>H = 3%<br>J = 5%<br>K = 10%                                                     |

See web-site for custom core info