

The 20 Series axial lead resistors are both durable and economical. They have all the electrical attributes of the more expensive 90 Series resistors, including an 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 product available Jan. 2006 Add "E" suffix to part number to specify.

## SPECIFICATIONS

### Material

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

**Core:** Ceramic.

**Terminals:** Solder-coated axial lead.

### 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:

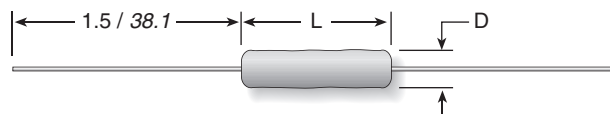
Under 7 watts: 5 times rated wattage for 5 seconds.  
7 watts and over: 10 times rated wattage for 5 seconds.

### Temperature coefficient:

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

# 20 Series

## Vitreous Enamel Conformal Axial Lead Wirewound Resistors 5% Tolerance Standard



Series	Wattage	Ohms	Dimensions (in. / mm)		Voltage	Lead ga.
			Length*	Diam.*		
21	1	0.1-3.2K	0.406 / 10.3	0.156 / 4.0	75	24
22	2	0.1-4.4K	0.406 / 10.3	0.219 / 5.6	65	20
23	3	0.1-10K	0.500 / 12.7	0.220 / 5.6	135	20
25	5	0.1-28K	1.000 / 25.4	0.276 / 7.0	330	20
27	7	0.1-62K	1.250 / 31.8	0.394 / 10.0	450	20
20	10	0.1-100K	1.844 / 46.8	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.

## STOCK PART NUMBERS FOR STANDARD RESISTANCE VALUES

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	R10	✦	✦	✦	✦		✓	200	200	✦	✓	✓	✓	✓	✓	4,000	4K0			✓	✓	✦	✦
1.5	R15	✓	✓	✓	✓		✓	220	220	✦	✓	✓	✓	✓	✓	4,500	4K5			✓	✓	✦	✦
2	R20	✦	✓	✓	✦		✓	225	225	✓	✦	✓	✓	✓	✓	4,700	4K7			✓	✓	✦	✓
2.2	R22	✓	✓	✓	✓		✓	250	250	✓	✓	✓	✓	✓	✓	5,000	5K0			✓	✦	✓	✓
3	R30	✓	✓	✓	✓		✓	270	270	✦	✓	✓	✓	✓	✓	6,000	6K0			✓	✓	✓	✓
4	R40	✓	✦	✓	✓		✓	300	300	✓	✓	✓	✓	✓	✓	6,800	6K8			✓	✓	✓	✓
5	R50	✓	✓	✓	✦		✓	330	330	✦	✓	✓	✓	✓	✓	7,000	7K0			✓	✓	✓	✓
7.5	R75	✦	✓	✓	✓		✓	350	350	✓	✓	✓	✓	✓	✓	7,500	7K5			✓	✓	✓	✓
10	R10R	✓	✓	✓	✓		✓	390	390	✓	✓	✓	✓	✓	✓	8,000	8K0			✓	✓	✓	✓
12	R12R	✓	✓	✓	✓		✓	400	400	✓	✓	✓	✓	✓	✓	9,000	9K0			✓	✓	✓	✓
15	R15R	✓	✓	✓	✓		✓	450	450	✓	✓	✓	✓	✓	✓	10,000	10K			✓	✓	✓	✓
18	R18R	✓	✓	✓	✓		✓	470	470	✦	✓	✓	✓	✓	✓	12,000	12K			✓	✓	✓	✓
20	R20R	✓	✓	✓	✓		✓	500	500	✓	✓	✦	✓	✓	✓	13,000	13K			✓	✓	✓	✓
22	R22R	✓	✓	✓	✓		✓	560	560	✓	✓	✓	✓	✓	✓	15,000	15K			✓	✓	✓	✓
25	R25R	✓	✓	✓	✓		✓	600	600	✓	✓	✦	✓	✓	✓	17,000	17K			✓	✓	✓	✓
27	R27R	✓	✓	✓	✓		✓	680	680	✓	✓	✓	✓	✓	✓	20,000	20K			✓	✓	✓	✓
30	R30R	✦	✓	✓	✓		✓	750	750	✓	✓	✓	✓	✓	✓	22,000	22K			✓	✓	✓	✓
33	R33R	✓	✓	✓	✓		✓	800	800	✓	✓	✓	✓	✓	✓	25,000	25K			✓	✓	✓	✓
35	R35R	✓	✓	✓	✓		✓	820	820	✓	✓	✓	✓	✓	✓	30,000	30K			✓	✓	✓	✓
39	R39R	✓	✓	✓	✓		✓	900	900	✓	✓	✓	✓	✓	✓	33,000	33K			✓	✓	✓	✓
40	R40R	✓	✓	✓	✓		✓	1,000	1K0	✦	✦	✦	✦	✓	✦	35,000	35K			✓	✓	✓	✓
47	R47R	✦	✓	✓	✓		✓	1,100	1K1	✓	✓	✓	✓	✓	✓	40,000	40K			✓	✓	✓	✓
50	R50R	✓	✓	✓	✦		✓	1,200	1K2	✓	✓	✦	✓	✓	✓	50,000	50K			✓	✓	✓	✦
56	R56R	✓	✓	✓	✓		✓	1,500	1K5	✦	✓	✦	✓	✓	✓					✓	✓	✓	✓

✦ = Most popular stock values

✓ = Stock values

✦ = Non-stock 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.