

20 Series



Vitreous Enamel Conformal Axial Terminal Wirewound, 5% Tolerance Std.

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.

SERIES SPECIFICATIONS

Series	Wattage	Ohms	Max. Voltage*
21	1	1.0-3.0K	75
22	2	1.0-3.0K	65
23	3	0.1-10K	135
25	5	0.1-28K	330
27	7	0.1-25K	450
20	10	0.1-100K	720

12.5 watt size available on special order

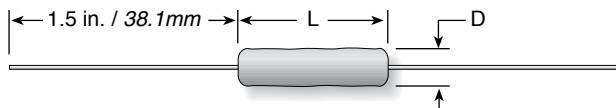
*Maximum Voltage is based on Ohm's Law $[V=\sqrt{P \cdot R}]$ as limited by the resistance value of specified product

CHARACTERISTICS

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
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

DIMENSIONS

(in./mm max.)



Series	Wattage	Length* (max.)	Diam.* (max.)	Lead ga.
21	1	0.421 / 10.7	0.156 / 4.0	24
22	2	0.421 / 10.7	0.219 / 5.6	20
23	3	0.515 / 13.1	0.220 / 5.6	20
25	5	1.015 / 25.8	0.276 / 7.0	20
27	7	1.265 / 32.1	0.394 / 10.0	20
20	10	1.859 / 47.2	0.394 / 10.0	20

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

(continued)

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Terminal Wirewound, 5% Tolerance Std.

ORDERING INFORMATION

Standard part numbers

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.

