

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

ORDERING INFORMATION

Standard part numbers

Ohmic value	Wattage							Ohmic value	Wattage							Ohmic value	Wattage						
	Part No. Prefix Suffix	1	2	3	5	7	10		Part No. Prefix Suffix	1	2	3	5	7	10		Part No. Prefix Suffix	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.

