

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)

20 Series

Vitreous Enamel Conformal Axial 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.

