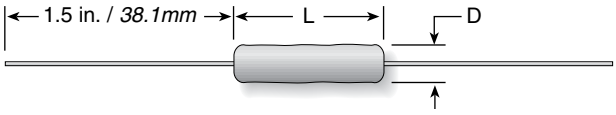
90 Series

Lead Free Vitreous Enamel Molded Axial Term. Wirewound, 5% Tolerance Standard



Series	Wattage*	Ohms	Dimensions (in. / *mm*) Length	Diam.	Voltage	Lead ga.
91	1.5	0.1Ω-3.6K	0.452 / *11.5*	0.140 / *3.6*	150	24
92	2.25	0.1Ω-3.5K	0.405 / *10.3*	0.219 / *5.6*	85	20
93	3.25	0.1Ω-10.5K	0.577 / *14.7*	0.234 / *5.9*	200	20
95	5.0	0.1Ω-25K	0.968 / *24.6*	0.234 / *5.9*	495	20
90	11.0	0.1Ω-91K	1.796 / *45.6*	0.343 / *8.7*	1080	20

* 2x power ratings by using heat-sink mounting clips shown on following page.

Note: Due to space restrictions, parts are stamped with wattage ratings reduced to the nearest whole number. The actual wattage ratings are as published in this catalog.

ORDERING INFORMATION

Non-Inductive Winding — Optional (blank = std. winding)

RoHS Compliant

91 N J R10 E

90 Series	Wattage	Tolerance	Resistance Value
Series-Lead Free Vitreous Enamel Molded Axial Term. Wirewound	1 = 1.5W 2 = 2.25W 3 = 3.25W 5 = 5W 0 = 11W	J = 5%	1R0 = 1.0Ω 10R = 10.0Ω 250 = 250Ω 1K0 = 1,000Ω 4K5 = 4,500Ω 51K = 51,000Ω

When you need the highest quality wirewound axial terminal resistors available, choose Ohmite's 90 Series resistors.

They are manufactured by a unique process that molds the vitreous enamel over the resistive element, helping to ensure consistent dimensions. This uniformity permits 90 Series resistors to be mounted in clips, creating a heat-sinking benefit (see next page).

The durable vitreous enamel coating, which is totally lead free, permits the 90 Series resistors to maintain a hard coating while operating at high temperatures. Mechanical integrity is enhanced by the all-welded construction.

FEATURES

- Molded Construction provides consistent shape and size (Permits mounting in clips which extends power rating).
- Meets MIL-R-26 requirements for insulated resistors.
- All-welded construction.
- Flame resistant lead free vitreous enamel coating.
- Higher ratings in smaller sizes.
- Heat sink mounting clips available.
- RoHS compliant; add "E" suffix to part number to specify.

SPECIFICATIONS

Material

Coating: Molded lead free vitreous enamel.

Core: Ceramic.

Terminals: Solder-coated copper clad axial. RoHS solder composition is 96% Sn, 3.5% Ag, 0.5% Cu

Derating: Linearly from 100% @ +25°C to 0% @ +350°C.

Electrical

Tolerance: ±5% (other tolerances available).

Power rating: Based on 25°C free air rating. (other wattages available*).

Maximum ohmic values: See chart.

Overload:

Under 11 watts: 5 times rated wattage for 5 seconds.

11 watts: 10 times rated wattage for 5 seconds.

Temperature coefficient:

1 to 9.99Ω: ±100 ppm/°C

10Ω and over: ±30 ppm/°C

Dielectric withstanding voltage:

500 VAC: 1W rating

1000 VAC: 2, 3, 5 and 11W

STANDARD PART NUMBERS FOR 90 SERIES

Ohmic value	Part No. Prefix ➤ Suffix ▼	Wattage 1.5 91J	2.25 92J	3.25 93J	5 95J	11 90J
1	1R0	✔	✔	✔	✔	✔
1.1	1R1	✔	✣	✣	✔	✣
1.2	1R2	✔	✔	✔	✔	✣
1.3	1R3	✣	✔	✔	✣	✔
1.5	1R5	✔	✔	✔	✔	✔
1.6	1R6	✣	✣	✣	✣	✣
1.8	1R8	✔	✣	✣	✔	✔
2	2R0	✔	✔	✔	✔	✔
2.2	2R2	✔	✔	✔	✔	✔
2.4	2R4	✔	✣	✔	✔	✔
2.7	2R7	✔	✔	✔	✔	✔
3	3R0	✔	✔	✔	✔	✔
3.3	3R3	✔	✔	✔	✔	✔
3.6	3R6	✣	✣	✣	✔	✣
3.9	3R9	✔	✔	✔	✔	✔
4	4R0	✔	✔	✔	✔	✔
4.3	4R3	✣	✔	✣	✔	✔
4.7	4R7	✔	✔	✔	✔	✔
5	5R0	✔	✔	✔	✔	✔
5.1	5R1	✣	✔	✔	✣	✣
5.6	5R6	✔	✔	✔	✔	✔
6.2	6R2	✣	✔	✔	✔	✔
6.8	6R8	✔	✣	✔	✔	✔
7.5	7R5	✣	✔	✔	✔	✔
8.2	8R2	✣	✔	✔	✔	✔
9.1	9R1	✣	✣	✔	✔	✣
10	10R	✔	✔	✔	✔	✔
11	11R	✣	✣	✣	✔	✔
12	12R	✔	✔	✔	✔	✔
13	13R	✣	✣	✔	✔	✣
15	15R	✔	✔	✔	✔	✔
16	16R	✔	✣	✔	✔	✔
18	18R	✔	✔	✔	✔	✔
20	20R	✔	✔	✔	✔	✔
22	22R	✔	✔	✔	✔	✔
24	24R	✣	✣	✔	✔	✔
25	25R	✣	✔	✔	✔	✔
27	27R	✔	✔	✔	✔	✔
30	30R	✔	✔	✔	✔	✔
33	33R	✔	✣	✔	✔	✔
35	35R	✔	✣	✔	✔	✔
36	36R	✔	✣	✣	✔	✣
39	39R	✔	✔	✔	✔	✔
40	40R	✣	✔	✔	✔	✔
43	43R	✣	✔	✔	✔	✔
47	47R	✔	✔	✔	✔	✔
50	50R	✔	✔	✔	✔	✔
51	51R	✣	✣	✔	✔	✣
56	56R	✔	✔	✔	✔	✔
62	62R	✔	✔		✔	✔
68	68R	✔	✔	✔	✔	✔
75	75R	✔	✔	✔	✔	✔
82	82R	✔	✔	✔	✔	✔
91	91R	✔	✣	✔	✔	✔
100	100	✔	✔	✔	✔	✔
110	110	✔	✔	✔	✔	✔
120	120	✔	✔	✔	✔	✔
130	130	✣	✔	✔	✔	✔
150	150	✔	✔	✔	✔	✔
160	160	✔	✣	✔	✔	✔
180	180	✔	✔	✔	✔	✔
200	200	✔	✔	✔	✔	✔
220	220	✔	✔	✔	✔	✔
240	240	✣	✣	✔	✔	✣
250	250	✔	✔	✔	✔	✔
270	270	✔	✔	✔	✔	✔
300	300	✔	✔	✔	✔	✔
330	330	✔	✔	✔	✔	✔
350	350	✔	✔	✔	✔	✣
360	360	✔	✔	✔	✔	✣
390	390	✔	✔	✔	✔	✔
400	400	✔	✔	✔	✔	✔
430	430	✔	✔	✔	✔	✣
450	450	✣	✔	✔	✣	✣
470	470	✔	✔	✔	✔	✔
500	500	✔	✔	✔	✔	✔
510	510	✣	✔	✔	✔	✣
560	560	✔	✔	✔	✔	✔
600	600	✔	✣	✔	✔	✔
620	620	✔	✣	✔	✣	✣
680	680	✔	✔	✔	✔	✔
700	700	✣	✔	✔	✔	✣
750	750	✔	✔	✔	✔	✔
800	800	✔	✣	✔	✔	✔
820	820	✔	✔	✔	✔	✔
900	900	✣	✣	✔	✔	✣
910	910	✣	✣	✔	✣	✣
1,000	1K0	✔	✔	✔	✔	✔
1,100	1K1	✣	✔	✔	✣	✣
1,200	1K2	✔	✔	✔	✔	✔
1,300	1K3	✔	✔	✔	✔	✔
1,400	1K4	✣	✔	✔	✣	✣
1,500	1K5	✔	✔	✔	✔	✔
1,600	1K6	✣	✣	✔	✔	✔
1,800	1K8	✔	✔	✔	✔	✔
2,000	2K0	✔	✔	✔	✔	✔
2,200	2K2	✔	✔	✔	✔	✔
2,400	2K4	✔	✔	✔	✔	✣
2,500	2K5	✔	✔	✔	✔	✔
2,700	2K7	✣	✔	✔	✔	✔
3,000	3K0	✔	✔	✔	✔	✔
3,300	3K3			✔	✔	✔
3,500	3K5	✔	✔	✔		
3,600	3K6	✔	✔	✔		
3,900	3K9	✔	✔	✔		
4,000	4K0	✔	✔	✔		
4,300	4K3	✣	✔	✔		
4,500	4K5	✔	✔	✔		
4,700	4K7	✔	✔	✔		
5,000	5K0	✔	✔	✔		
5,100	5K1	✣	✔	✔		
5,600	5K6	✔	✔	✔		
6,000	6K0	✔	✔	✔		
6,200	6K2	✔	✔	✣		
6,800	6K8	✔	✔	✔		
7,000	7K0	✔	✔	✔		
7,500	7K5	✔	✔	✔		
8,000	8K0	✔	✔	✔		
8,200	8K2	✔	✔	✔		
9,000	9K0	✔	✔	✣		
9,100	9K1	✔		✣		
10,000	10K	✔	✔	✔		
11,000	11K		✔	✣		
12,000	12K		✔	✔		
13,000	13K	✔	✣			
14,000	14K	✔	✣			
15,000	15K	✔	✔			
16,000	16K	✔	✣			
17,000	17K	✣	✣			
18,000	18K	✔	✔			
20,000	20K	✔	✔			
22,000	22K	✔	✔			
24,000	24K	✣	✣			
25,000	25K	✔	✔			
27,000	27K		✔			
30,000	30K		✔			
33,000	33K		✔			
35,000	35K		✣			
36,000	36K		✔			
39,000	39K		✔			
40,000	40K		✔			
43,000	43K		✔			
45,000	45K		✣			
47,000	47K		✔			
50,000	50K		✔			
51,000	51K		✣			

✔ = 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.

Check product availability at **www.ohmite.com**

Mounting Clip
For 90 Series

FEATURES

- Prevents severe vibration or mechanical shock to resistor
- Increases resistor wattage up to 100% when mounted on metal surface (1.5 sq. in. by 0.040 in. thick min. per watt dissipated)
- Holes in clip base permit fastening to chassis surface with machine screws, eyelets or rivets
- Sold in bags of ten (10)

STANDARD PART NUMBERS FOR 90 SERIES MOUNTING CLIP

Part No.	Resistor rating (watts)	Clip length (in./*mm*)	Clip width (in./*mm*)	Clip height (in./*mm*)	No. of holes	Hole centers (in./*mm*)	Hole diameter (in./*mm*)
✔ 5900	1.5	0.40 / *10.319*	0.150 / *3.810*	0.250 / *6.350*	1		0.71 / *1.803*
✔ 5902	2.25	0.35 / *8.890*	0.217 / *5.500*	0.275 / *6.980*	2	0.156 / *3.969*	0.71 / *1.803*
✙ 5904	3.25	0.50 / *12.700*	0.257 / *6.500*	0.319 / *8.103*	2	0.250 / *6.350*	0.093 / *2.362*
✙ 5906	5.0	0.90 / *22.860*	0.237 / *6.019*	0.284 / *7.214*	2	0.400 / *10.160*	0.103 / *2.616*
✙ 5908	11.0	1.75 / *44.450*	0.333 / *8.458*	0.377 / *9.576*	2	0.800 / *20.320*	0.103 / *2.616*

✙ = Most popular standard values
✔ = Standard values
✜ = Non-standard values subject to minimum handling charge per item