

FEATURES

- High precision
- All welded construction
- Molded thermosetting plastic bobbin
- Wide ohmic range combined with tight tolerance
- Excellent long-term stability
- Inherent low temperature coefficient
- Extremely low Thermal EMF
- Low voltage coefficient
- Low noise

SPECIFICATIONS

Minimum Values: 0.1Ω for ±1% and ±0.5%; 10Ω for ±0.1% and tighter

Resistance Tolerance: ±0.005%, ±0.01%, ±0.02%, ±0.05%, ±0.1%, ±0.5%, and ±1%, depending on style and value

Temperature Coefficient (TCR): ±10ppm/°C standard for 10Ω and above. Higher TC's on low ohmic values. TC match to ±1ppm/°C. High TC's upto +6000ppm/°C are available

Standard temperature range: -10°C to +80°C

Working temperature range: -60°C to +145°C

CONSTRUCTION

All Welded Construction: The combination of all welded construction and compatible materials provide the most reliable means of interconnects possible.

Butt Weld of Tab to Terminal: A tab material of 800 ohm alloy (the same as the resistance wire) is butt welded to the terminal and molded deep into the resistor bobbin. This design parameter assures the least possible DC transients due to thermal EMF.

Bobbin Design: The ratio of the height of the Pi wall to the width of the Pi and to the diameter of the bobbin mandrel are critical to the basic stability of a wirewound resistor. These parameters are optimized for each wire size, wattage size and range of resistor values.

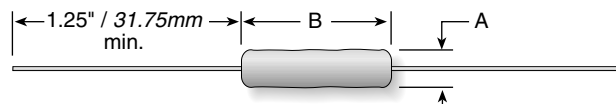
Encapsulation Material: Both the bobbin and the final encapsulation material are thermosetting alkyd polyester. The resulting resistor is virtually a homogeneous mass with an identical coefficient of expansion which is unaffected by the most violent of temperature cycling. All types are unaffected by application of solvents.

Terminal Materials: The standard terminal material is hot solder dipped copper (C5N). Other available materials are bare nickel (N1N) and gold plated nickel (N2N).

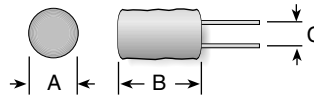
HPW Series

High Precision Welded Axial and Radial

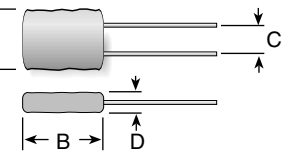
Axial



Round Radial



Flat Radial



Model	Dim. C	Dim. D
101P	0.150 / 3.81	0.110 / 2.79
102P	0.125 / 3.18	0.125 / 3.18
203PC	0.150 / 3.81	—
203PA	0.200 / 5.08	—
305PA	0.200 / 5.08	—
505PA	0.300 / 7.62	—



Type	Power Rating			Overall Dimensions (±.020 in./ ±.508 mm)		AWG	Lead Diam.
	Max. Ohms	@125°C (Watts)	Max. Volts	A	B		
123A	111k	0.05	150	0.100 / 2.54	0.230 / 5.84	24*	0.020 / 0.508
118A	192k	0.05	150	0.130 / 3.30	0.180 / 4.57	26	0.016 / 0.406
122A	199k	0.05	150	0.123 / 3.12	0.218 / 5.54	24	0.020 / 0.508
102A	334k	0.10	150	0.110 / 2.79	0.250 / 6.35	24	0.020 / 0.508
102AL	334k	0.10	150	0.130 / 3.30	0.313 / 7.95	24	0.020 / 0.508
101A	410k	0.10	300	0.130 / 3.30	0.375 / 9.53	22*	0.026 / 0.660
153A	435k	0.10		0.150 / 3.81	0.245 / 6.22	22	0.026 / 0.660
103A	633k	0.10	150	0.150 / 3.81	0.300 / 7.62	22	0.026 / 0.660
135A	750k	0.10		0.160 / 4.06	0.500 / 12.70	22	0.026 / 0.660
105A	820k	0.125		0.150 / 3.81	0.310 / 7.87	22	0.026 / 0.660
184A	820k	0.125	300	0.187 / 4.75	0.375 / 9.53	22	0.026 / 0.660
185A*	961k	0.125	300	0.187 / 4.75	0.500 / 12.70	22	0.026 / 0.660
202A	968k	0.25	200	0.250 / 6.35	0.310 / 7.87	22	0.026 / 0.660
204A	1.42 M	0.25		0.250 / 6.35	0.375 / 9.53	20	0.032 / 0.813
203A	1.7 M	0.25	200	0.250 / 6.35	0.343 / 8.71	20	0.032 / 0.813
205A*	1.93 M	0.33	400	0.250 / 6.35	0.500 / 12.70	20*	0.032 / 0.813
207A*	3.0 M	0.50	800	0.250 / 6.35	0.750 / 19.05	20*	0.032 / 0.813
308A	3.0 M	0.60	800	0.312 / 7.93	0.810 / 20.57	20	0.032 / 0.813
210A*	4.10 M	0.50	800	0.250 / 6.35	1.00 / 25.40	20	0.032 / 0.813
307A	5.63 M	0.60		0.375 / 9.53	0.750 / 19.05	20	0.032 / 0.813
310A	7.68 M	1.00	800	0.375 / 9.53	1.00 / 25.40	20	0.032 / 0.813
505A	10 M	1.00		0.500 / 12.70	0.500 / 12.70	20	0.032 / 0.813
510A*	24 M	1.25	800	0.500 / 12.70	1.00 / 25.40	20	0.032 / 0.813
515A*	35 M	1.50	1200	0.500 / 12.70	1.50 / 38.10	20	0.032 / 0.813
517A	43 M	1.75	1200	0.500 / 12.70	1.75 / 44.45	20	0.032 / 0.813
520A*	43 M	2.00	1200	0.500 / 12.70	2.00 / 50.8	20	0.032 / 0.813
101P	453k	0.125	150	0.300 / 7.62	0.320 / 8.13	22	0.026 / 0.660
102P	821k	0.125	150	0.250 / 6.35	0.250 / 6.35	22*	0.026 / 0.660
203PC	1.59 M	0.25	150	0.250 / 7.92	0.312 / 7.93	22	0.026 / 0.660
203PA	1.48 M	0.25	150	0.270 / 6.86	0.320 / 8.13	22	0.026 / 0.660
305PA	3.3 M	0.50		0.375 / 9.53	0.500 / 12.70	20	0.032 / 0.813
505PA	9.5 M	1.00		0.500 / 12.70	0.500 / 12.70	20	0.032 / 0.813

*Available in hermetically sealed

ORDERING INFORMATION

2 0 3 A 1 M 7 0 0 T

Type	Resistance	Tolerance
1R000	= 1 Ω	T = 0.01%
10R00	= 10 Ω	Q = 0.02%
100R0	= 100 Ω	A = 0.05%
1K000	= 1000 Ω	B = 0.1%
10K00	= 10 KΩ	F = 1.0%
100K0	= 100 KΩ	
1M700	= 1.7 MΩ	

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