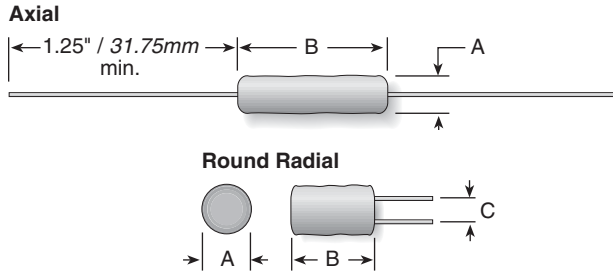


# HPW Series

## High Precision Welded Axial and Radial



| Model | Dim. C       |
|-------|--------------|
| 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<br>(±.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 |
| 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

## 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).

## ORDERING INFORMATION

| Type   | Format*               | Resistance     | Tolerance |
|--------|-----------------------|----------------|-----------|
| 203A   | A, AL = axial         | 1R000 = 1 Ω    | T = 0.01% |
| 1M700T | PA, PC = round radial | 10R00 = 10 Ω   | Q = 0.02% |
|        |                       | 100R0 = 100 Ω  | A = 0.05% |
|        |                       | 1K000 = 1000 Ω | B = 0.1%  |
|        |                       | 10K00 = 10 KΩ  | C = 0.25% |
|        |                       | 100K0 = 100 KΩ | D = 0.5%  |
|        |                       | 1M700 = 1.7 MΩ | F = 1.0%  |

\*Not every format is available in every wattage

Check product availability at [www.ohmite.com](http://www.ohmite.com)