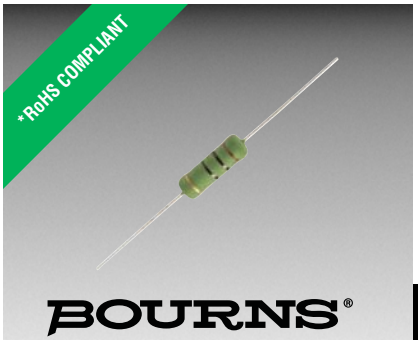



## Features

- Low thermal resistant ceramic core
- E24 resistance values
- RoHS compliant*
- Wide power range (1~10 W)
- Coating material meets UL 94V-0 requirements

## Applications

- Smart meters
- Renewable energy
- Industrial
- Power supplies/chargers
- Lighting
- Instruments/gauges
- White goods

# W Series Wirewound Power Resistor

### Electrical Characteristics

Resistance Range ..... See Popular Resistance Values Table
Tolerance ..... 5 %
Operating Temperature ..... -55 °C to +200 °C
Temperature Coefficient ..... ±300 ppm/°C
Maximum Voltage ..... √P*R

Non-inductive version is available upon request.

### Popular Resistance Values

| Code | R Value |
|---|---|
| 15R0 | 15 Ω |
| 22R0 | 22 Ω |
| 33R0 | 33 Ω |
| 39R0 | 39 Ω |
| 47R0 | 47 Ω |

| Code | R Value |
|---|---|
| 56R0 | 56 Ω |
| 82R0 | 82 Ω |
| 1000 | 100 Ω |
| 1200 | 120 Ω |
| 1500 | 150 Ω |

Other E24 resistance values available upon request.

### Physical Characteristics

Resistor ..... Low thermal resistant ceramic core
Lead Wire ..... Tin-plated copper wire
Coating Material ..... Meets UL 94V-0 requirements

### Environmental Characteristics

| Test | Conditions | Specification |
|---|---|---|
| Short Time Overload | 2.5 times rated voltage for 5 seconds. | ΔR/R≤±(2 % ± 0.05 Ω) |
| Solderability | 245 ±3 °C for 2.5 ±0.5 seconds. | Over 95 % coverage |
| Resistance to Solder Heat | 260 ±5 °C for 10 ± 1 seconds. | ΔR/R≤±(1 % + 0.05 Ω) |
| Dielectric Strength | Test voltage >500 Vrms for >1 minute. | Pass |
| Insulation Resistance | Test voltage >500 Vrms for 1 minute. | $>10^9$ Ω |
| Load Life Humidity | 40 ±2 °C, 90 to 95 %. 1.5 hours ON, 0.5 hours OFF for 1000 hours at rated power. | ΔR/R≤ ±(5 % + 0.05 Ω) |
| Load Life | 70 ±2 °C. 1.5 hours ON, 0.5 hours OFF for 1000 hours at rated power. | ΔR/R≤±(5 % + 0.05 Ω) |

### How to Order

**W 3 M 22R0 J**

Product Series
W = Wirewound

Power Rating
1 = 1 Watt
2 = 2 Watts
3 = 3 Watts
5 = 5 Watts
7 = 7 Watts
9 = 9 Watts
10 = 10 Watts

Pin Style
M = Axial Miniaturized Version

Resistance Code
- R<100 ohms:
  "R" represents decimal point
  (examples: 56R0 = 56 ohms)
- R≥100 ohms:
  First three digits are significant, fourth digit represents number of zeros to follow
  (example: 1500 = 150 ohms)

Resistance Tolerance
J = ±5 %

### Packaging Specifications

| Model | Style | Qty. per Box (Pcs.) | Min. Order Quantity (Pcs.) |
|---|---|---|---|
| W1M | Ammo Pack | 1,000 | 5,000 |
| W2M | | | |
| W3M | | | |
| W5M | Ammo Pack | 500 | 2,000 |
| W7M | | | |
| W9M | Bulk in Box | 25 / 200 | 2,000 |
| W10M | | | |

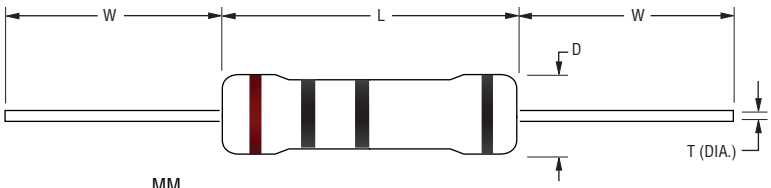
*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.

# W Series Wirewound Power Resistor

BOURNS®

## Product Dimensions



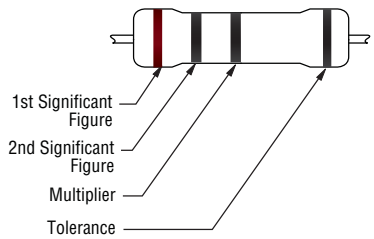

DIMENSIONS: MM / (INCHES)

| Model | Dimensions | | | |
|---|---|---|---|---|
| | L* | D | W | T |
| W1M | 9.5 ± 1.0 (.374 ± .004) | 4.0 ± 1.0 (.157 ± .004) | 28.0 ± 3.0 (1.102 ± .118) | 0.60 ± 0.05 (.024 ± .002) |
| W2M | 11.5 ± 1.0 (.453 ± .004) | 4.5 ± 1.0 (.177 ± .004) | 28.0 ± 3.0 (1.102 ± .118) | 0.65 ± 0.05 (.026 ± .002) |
| W3M | 15.5 ± 1.0 (.610 ± .004) | 5.5 ± 1.0 (.217 ± .004) | 28.0 ± 3.0 (1.102 ± .118) | 0.70 ± 0.05 (.028 ± .002) |
| W5M | 17.5 ± 1.0 (.689 ± .004) | 6.5 ± 1.0 (.256 ± .004) | 28.0 ± 3.0 (1.102 ± .118) | 0.75 ± 0.05 (.030 ± .002) |
| W7M | 24.5 ± 1.0 (.965 ± .004) | 8.5 ± 1.0 (.335 ± .004) | 38.0 ± 3.0 (1.496 ± .118) | 0.75 ± 0.05 (.030 ± .002) |
| W9M | 39.5 ± 1.0 (1.555 ± .004) | 8.5 ± 1.0 (.335 ± .004) | 38.0 ± 3.0 (1.496 ± .118) | 0.75 ± 0.05 (.030 ± .002) |
| W10M | 52.5 ± 1.0 (2.067 ± .004) | 8.5 ± 1.0 (.335 ± .004) | 38.0 ± 3.0 (1.496 ± .118) | 0.75 ± 0.05 (.030 ± .002) |

* Larger body size available upon request.

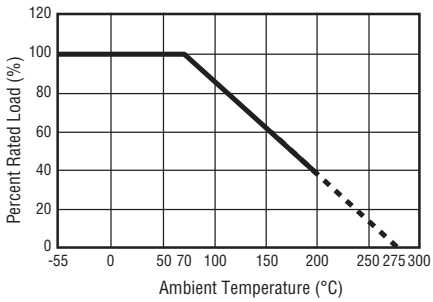
## Typical Part Marking

Resistors shall be marked with color coding. Colors shall be in accordance with JIS C 0802.



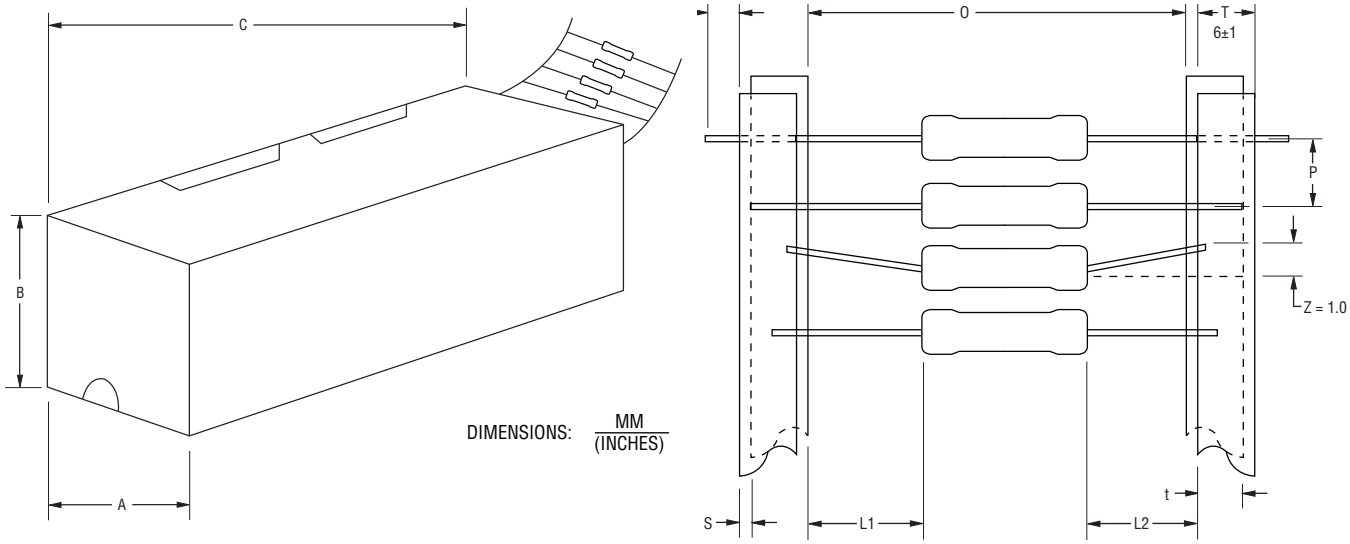

| Color | 1st Band | 2nd Band | Multi-plier | Tol. |
|---|---|---|---|---|
| Black | 0 | 0 | 1 Ω | |
| Brown | 1 | 1 | 10 Ω | ±1 % |
| Red | 2 | 2 | 100 Ω | ±2 % |
| Orange | 3 | 3 | 1K Ω | |
| Yellow | 4 | 4 | 10K Ω | |
| Green | 5 | 5 | 100K Ω | ±0.5 % |
| Blue | 6 | 6 | 1M Ω | ±0.25 % |
| Violet | 7 | 7 | 10M Ω | ±0.10 % |
| Grey | 8 | 8 | | ±0.05 % |
| White | 9 | 9 | | |
| Gold | | | 0.1 Ω | ±5 % |
| Silver | | | 0.01 Ω | ±10 % |

## Power Derating Curve




Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.

## Packaging Specifications




| Model | O | P | A | B | C | Qty./Box |
|---|---|---|---|---|---|---|
| W1M | 58 ± 1 (2.283 ± .039) | 5 ± 0.3 (.197 ± .012) | 75 ± 5 (2.953 ± .197) | 70 ± 5 (2.756 ± .197) | 255 ± 5 (10.039 ± .197) | 1,000 pcs. |
| W2M | 58 ± 1 (2.283 ± .039) | 10 ± 0.5 (.394 ± .020) | 80 ± 5 (3.150 ± .197) | 82 ± 5 (3.228 ± .197) | 255 ± 5 (10.039 ± .197) | 1,000 pcs. |
| W3M | 65 ± 5 (2.559 ± .197) | 10 ± 0.5 (.394 ± .020) | 90 ± 5 (3.543 ± .197) | 119 ± 5 (4.685 ± .197) | 255 ± 5 (10.039 ± .197) | 1,000 pcs. |
| W5M | 65 ± 5 (2.559 ± .197) | 10 ± 0.5 (.394 ± .020) | 90 ± 5 (3.543 ± .197) | 88 ± 5 (3.465 ± .197) | 255 ± 5 (10.039 ± .197) | 500 pcs. |
| W7M | 90 ± 5 (3.543 ± .197) | 10 ± 0.5 (.394 ± .020) | 115 ± 5 (4.528 ± .197) | 124 ± 5 (4.882 ± .197) | 500 ± 5 (19.685 ± .197) | 500 pcs. |

For W9M and W10M packaging specifications, please contact factory.

BOURNS®

**Asia-Pacific:** Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116
**EMEA:** Tel: +36 88 520 390 • Fax: +36 88 520 211
**The Americas:** Tel: +1-951 781-5500 • Fax: +1-951 781-5700
**www.bourns.com**

07/15

Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

**Данный компонент на территории Российской Федерации**

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

**Офис по работе с юридическими лицами:**

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9