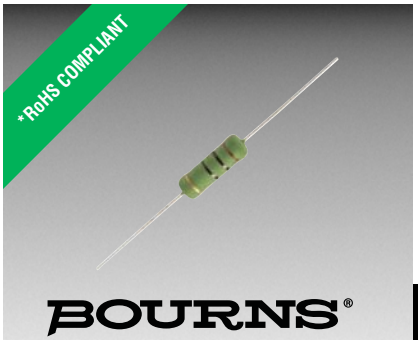

Features

- 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

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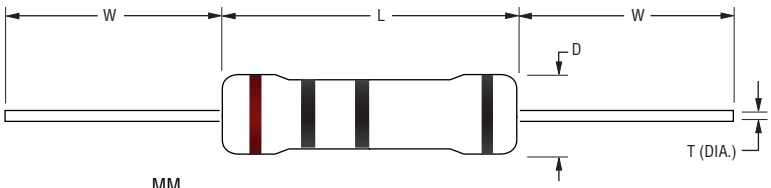
Product Dimensions



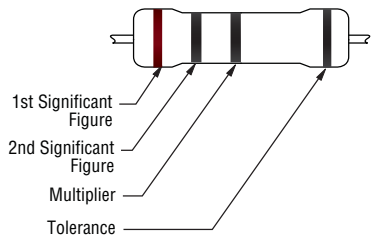
DIMENSIONS: MM / (INCHES)

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.

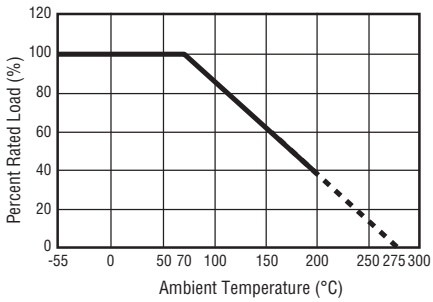
Typical Part Marking

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



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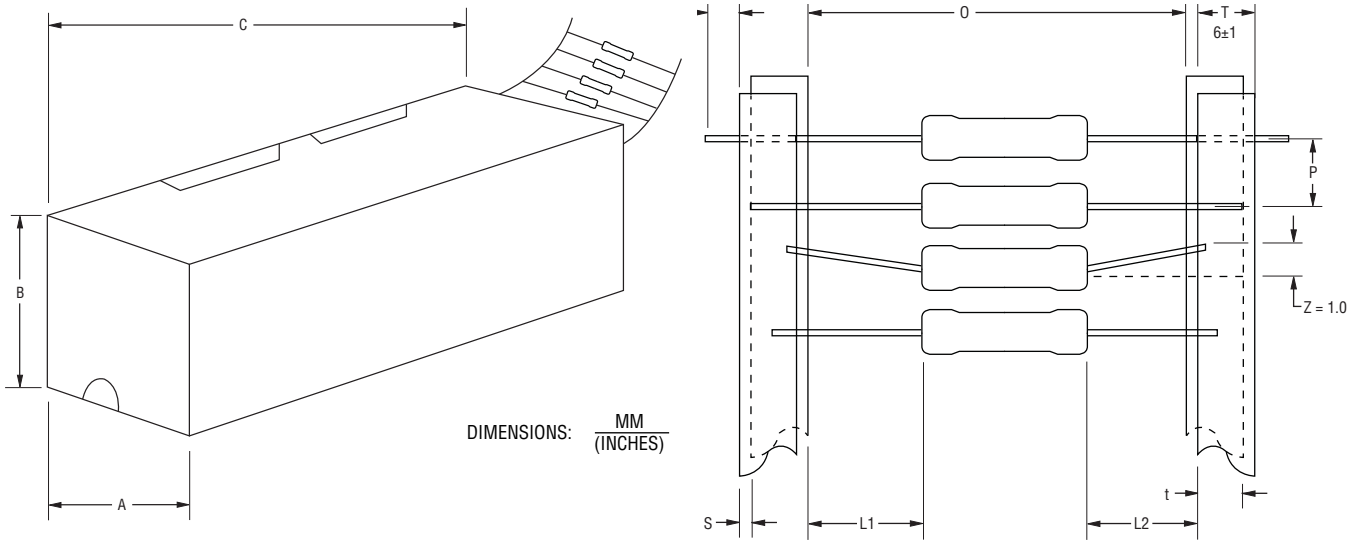
Packaging Specifications



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.

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