

## Features

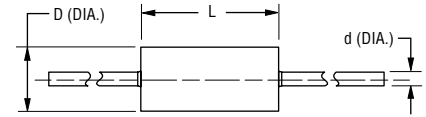
- Formerly a Riedon™ product
- Resistances to 5 MΩ
- Resistance tolerances to ±0.005 %
- Non-inductive Multi-Pi cores
- TCR to ±2 PPM/°C
- 100 % acceptance tested / traceable to NIST

- Long term stability / 100 ppm/year
- Matched resistance sets to ±0.001 % and ±0.5 ppm/°C
- Flame & moisture resistant protective encapsulation
- RoHS compliant\*

## SM/1xx Series - Riedon™ Precision Axial Wirewound Resistors by Bourns

### Specifications

Bourns Model Number	Commercial Power (W)	Resistance Range (Ω) <sup>1</sup>	Dimensions			Max. Working Voltage
			Diameter "D"	Length "L"	Lead Diameter <sup>2</sup> "d"	
SM2	0.06	1 - 75 k	$\frac{2.5 \pm 0.13}{(.100 \pm .005)}$	$\frac{5.3 \pm 0.64}{(.210 \pm .025)}$	$\frac{0.5 \pm 0.05}{(.020 \pm .002)}$	75
SM3	0.08	1 - 150 k	$\frac{3.2 \pm 0.13}{(.125 \pm .005)}$	$\frac{6.6 \pm 0.64}{(.260 \pm .025)}$	<b><math>\frac{0.5 \pm 0.05}{(.020 \pm .002)}</math></b> $\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	100
SM4	0.10	1 - 250 k	$\frac{3.2 \pm 0.13}{(.125 \pm .005)}$	$\frac{9.5 \pm 0.64}{(.375 \pm .025)}$	$\frac{0.5 \pm 0.05}{(.020 \pm .002)}$	100
SM13	0.10	1 - 250 k	$\frac{4.0 \pm 0.13}{(.156 \pm .005)}$	$\frac{7.9 \pm 0.64}{(.312 \pm .025)}$	$\frac{0.5 \pm 0.05}{(.020 \pm .002)}$	100
SM5	0.12	1 - 400 k	$\frac{4.7 \pm 0.13}{(.187 \pm .005)}$	$\frac{6.4 \pm 0.64}{(.250 \pm .025)}$	$\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	150
SM6	0.15	1 - 500 k	$\frac{4.7 \pm 0.13}{(.187 \pm .005)}$	$\frac{7.5 \pm 0.64}{(.295 \pm .025)}$	$\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	150
139A	0.15	1 - 500 k	$\frac{6.4 \pm 0.13}{(.250 \pm .005)}$	$\frac{6.4 \pm 0.64}{(.250 \pm .025)}$	$\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	100
SM15	0.175	1 - 750 k	$\frac{4.7 \pm 0.13}{(.187 \pm .005)}$	$\frac{9.5 \pm 0.64}{(.375 \pm .025)}$	$\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	200
SM12	0.20	1 - 750 k	$\frac{4.7 \pm 0.13}{(.187 \pm .005)}$	$\frac{11.4 \pm 0.64}{(.450 \pm .025)}$	$\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	200
100	0.20	1 - 1 M	$\frac{6.4 \pm 0.13}{(.250 \pm .005)}$	$\frac{9.5 \pm 0.64}{(.375 \pm .025)}$	<b><math>\frac{0.8 \pm 0.05}{(.032 \pm .002)}</math></b> $\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	200
SM7	0.25	1 - 1 M	$\frac{5.3 \pm 0.13}{(.210 \pm .005)}$	$\frac{11.8 \pm 0.64}{(.465 \pm .025)}$	$\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	250
101	0.25	1 - 1.2 M	$\frac{6.4 \pm 0.13}{(.250 \pm .005)}$	$\frac{12.7 \pm 0.64}{(.500 \pm .025)}$	<b><math>\frac{0.8 \pm 0.05}{(.032 \pm .002)}</math></b> $\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	300
102	0.33	1 - 2.5 M	$\frac{6.4 \pm 0.13}{(.250 \pm .005)}$	$\frac{19.1 \pm 0.64}{(.750 \pm .025)}$	<b><math>\frac{0.8 \pm 0.05}{(.032 \pm .002)}</math></b> $\frac{0.6 \pm 0.05}{(.025 \pm .002)}$	400
120	0.40	1 - 3.8 M	$\frac{9.5 \pm 0.13}{(.375 \pm .005)}$	$\frac{12.7 \pm 0.64}{(.500 \pm .025)}$	$\frac{0.8 \pm 0.05}{(.032 \pm .002)}$	300
121	0.50	1 - 3.8 M	$\frac{9.5 \pm 0.13}{(.375 \pm .005)}$	$\frac{19.1 \pm 0.64}{(.750 \pm .025)}$	$\frac{0.8 \pm 0.05}{(.032 \pm .002)}$	400
129	0.75	1 - 5 M	$\frac{9.5 \pm 0.13}{(.375 \pm .005)}$	$\frac{25.4 \pm 0.64}{(1.000 \pm .025)}$	$\frac{0.8 \pm 0.05}{(.032 \pm .002)}$	600
106	1.00	1 - 5 M	$\frac{12.7 \pm 0.13}{(.500 \pm .005)}$	$\frac{25.4 \pm 0.64}{(1.000 \pm .025)}$	$\frac{0.8 \pm 0.05}{(.032 \pm .002)}$	800
107	1.50	1 - 5 M	$\frac{12.7 \pm 0.13}{(.500 \pm .005)}$	$\frac{38.1 \pm 0.64}{(1.500 \pm .025)}$	$\frac{0.8 \pm 0.05}{(.032 \pm .002)}$	900
108	2.00	1 - 5 M	$\frac{12.7 \pm 0.13}{(.500 \pm .005)}$	$\frac{50.8 \pm 0.64}{(2.000 \pm .025)}$	$\frac{0.8 \pm 0.05}{(.032 \pm .002)}$	1000



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

LEAD LENGTH:  $\frac{38.1 \pm 12.7}{(1.50 \pm .500)}$

<sup>1</sup> Other resistance values may be available; please [contact Bourns](#).

<sup>2</sup> Where more than one lead diameter is listed, the **bold** value is standard.

### Additional Information

Click these links for more information:



**CALIFORNIA WARNING:** Can expose you to lead, a carcinogen and reproductive toxicant. See [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications.

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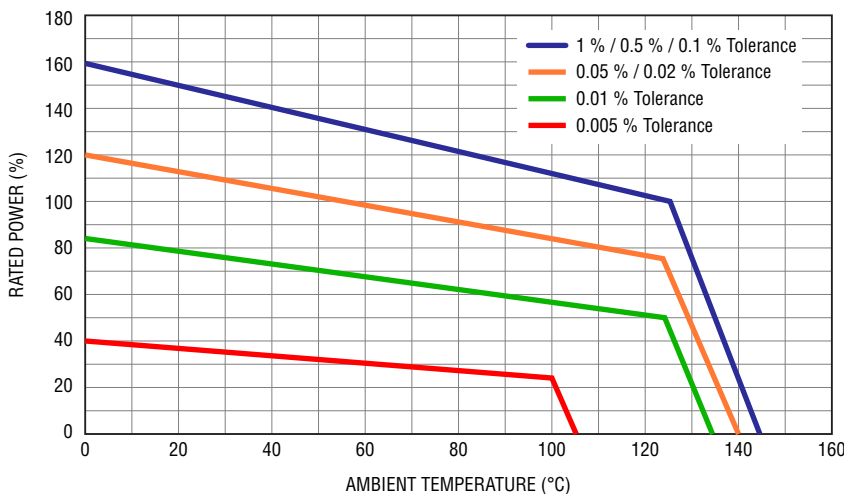
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**Specifications**

Specification	Value
Tolerances	±0.005 % to ±1 % (See Derating Curve)
Standard Temperature Coefficients <sup>1</sup> (TCR)	from 1 Ω to 5 Ω : ±50 PPM/°C greater than 5 Ω to 10 Ω : ±30 PPM/°C greater than 10 Ω to 100 Ω : ±20 PPM/°C greater than 100 Ω : ±10 PPM/°C
Temperature Range	-55 °C to +245 °C (See Derating Curve)
Termination Finish	100 % Matte Tin over Copper

<sup>1</sup> Contact Bourns for other options. TCR down to ±2 PPM/°C may be available on request.

**Power Derating Curves**



**Factory Options**

**Fast Rise Time** - These resistors are available in a low reactance design for fast rise time and extended frequency response.

**High Stability** - These resistors are available in a high stability version with maximum resistance change of ±20 PPM/year under normal conditions.

**Wide TCR Range** - These resistors are available in low and high TC configurations from -20 PPM/°C to +6000 PPM/°C.

Contact Bourns for these options.

**How To Order**

**SM6 - 25R X 1**

Model \_\_\_\_\_  
(See Specifications Table)

Resistance Code \_\_\_\_\_  
For values ≤10K Ω, "R" represents decimal point (Example: 25R = 25 Ω)  
For values >10K Ω, "K" represents decimal point (Example: 1K5 = 1.5K Ω)

Tolerance (%) \_\_\_\_\_  
Y\*\* = ±0.005 U = ±0.05 D = ±0.5 J = ±5  
X\*\* = ±0.01 B = ±0.1 F = ±1 K = ±10  
W\*\* = ±0.02 T = ±0.2 G = ±2  
V\*\* = ±0.025 C = ±0.25 H = ±3

Internal Use \_\_\_\_\_  
(Specific TCR values are available upon request.)

\*\*Contact Bourns for tolerances <±0.01 %.

**Packaging Specifications**

SM2-SM15.....100 pcs. bulk  
100-102, 120, 121, 139A....100 pcs. bulk  
106-108, 129 .....25 pcs. bulk



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