

## 1/4" [6.35 mm] Sq. Wirewound Trimmers



### APPLICATIONS

Wirewound trimmers are particularly useful in those applications where any combination of high power, low temperature coefficient of resistance and/or excellent long term life stability are important design considerations.

### ELECTRICAL SPECIFICATIONS

**Electrical Travel:** 22 ± 4 turns

**Resistance Range:** 10 ohms to 5 kilohms, Extended range available in non MIL-Spec product

**Resistance Tolerance:** ± 5 % standard, Closer tolerances available

**Temperature Coefficient:** (- 65 °C to + 150 °C) ± 50 ppm/°C

**Power Rating:** 0.5 watt at + 85 °C derated to 0 watt at + 150 °C, These specifications exceed MIL-Spec

**End Resistance:** 1 ohm or 2 %, whichever is greater

**Equivalent Noise Resistance (ENR):** 100 ohms maximum

**Dielectric (DWV):** 1000 VAC at atmospheric pressure, These specifications exceed MIL-Spec

**Insulation Resistance:** >100000 Megohms (500 VDC), These specifications exceed MIL-Spec

### MECHANICAL SPECIFICATIONS

**Operating Torque:** 3 ounce inch maximum, 17<sup>S</sup> and 18<sup>S</sup>, 5 ounce inch maximum, 12<sup>S</sup>, 14<sup>S</sup> and 15<sup>S</sup>

**Rotation:** Clutch stop, wiper idles

**Weight:** 0.935 grams maximum

**Resistive Element:** Nickel chromium

**Rotational Life:** 200 cycles minimum

**Terminal Strength:** 2 pounds for 10 seconds

### ENVIRONMENTAL SPECIFICATIONS

**Temperature Limits:** - 65 °C to + 175 °C

**Sealing:** Fully sealed case (non-hermetic)

### FEATURES

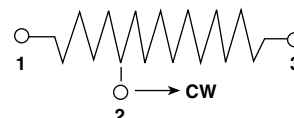
- Precious metal wiper
- 0.25 watt to + 85 °C
- TCR < 50 ppm/°C
- Solderable leads
- Special configurations available
- Military quality at affordable prices

### STANDARD RESISTANCE VALUES

RESISTANCE* (Ohms)	NOMINAL RESOLUTION (%)
10	1.65
20	1.35
50	1.13
100	0.82
200	0.62
500	0.62
1k	0.49
2k	0.34
5k	0.27
10k	0.21
20k	0.17
25k	0.16

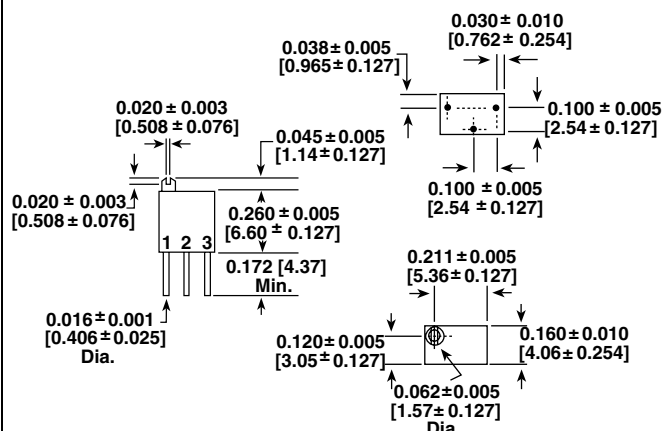
\*Other resistances available upon request.

### CIRCUIT DIAGRAM

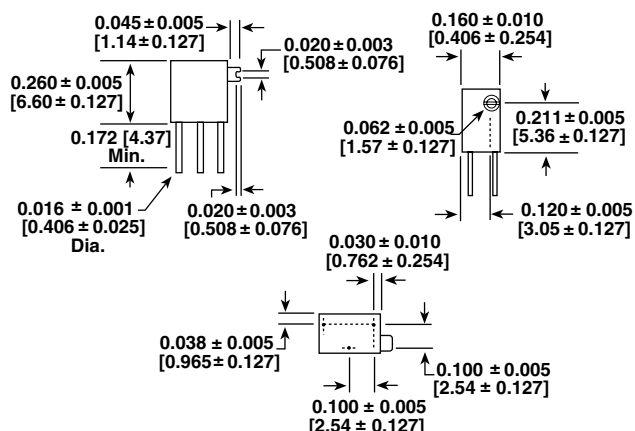


### DIMENSIONAL CONFIGURATIONS 1/4" [6.35 mm] Square in inches [millimeters]

#### W Lead Style - 17<sup>S</sup>



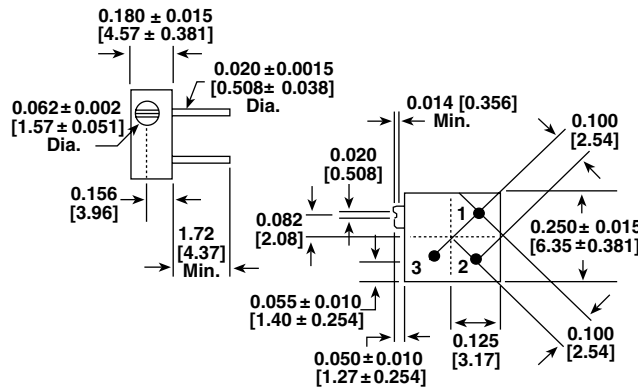
#### X Lead Style - 18<sup>S</sup>



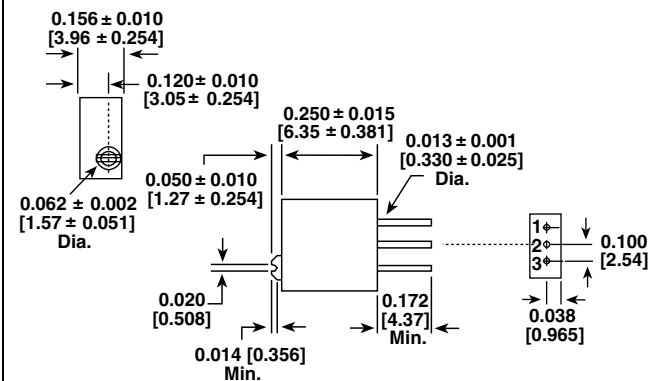


### DIMENSIONAL CONFIGURATIONS 1/4" [6.35 mm] Square in inches [millimeters]

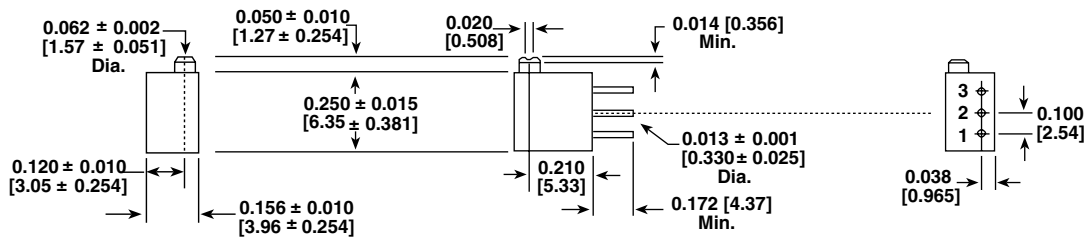
#### P Lead Style - 15<sup>S</sup>



#### W Lead Style - 12<sup>S</sup>



#### X Lead Style - 14<sup>S</sup>



### ENVIRONMENTAL PERFORMANCE

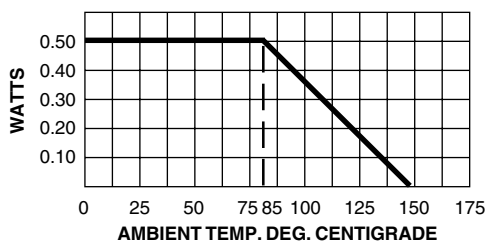
TEST <sup>1</sup>	CONDITIONS	MIL-R-27208 REQUIREMENT	TYPICAL CHANGE
Thermal Shock	(107) 5 cycles, - 55 °C to + 125 °C	$\Delta R \leq 1.0 \% ^2$	$\Delta R < 0.02 \%$
Low Temperature Operation	1 hour storage, 45 minutes rated power at - 55 °C	$\Delta R \leq 1.0 \% ^{2,3}$	$\Delta R < 0.01 \%$
High Temperature Exposure	250 hours, no load at + 150 °C	$\Delta R \leq 1.0 \% ^{2,3}$	$\Delta R < 0.03 \%$
Moisture Resistance	(106) 240 hours at rated power with humidity ranging from 80 % RH to 98 % RH	$\Delta R \leq 1.0 \% ^2$	$\Delta R < 0.02 \%$
Resistance to Soldering Heat	(210) + 350 °C for 3 seconds	$\Delta R \leq 1.0 \% ^2$	$\Delta R < 0.01 \%$
Shock	(213) 18 shocks, 100 g, 6 ms, sawtooth, 3 axes	$\Delta R \leq 1.0 \% ^{2,3}$	$\Delta R < 0.07 \%$
Vibration	(204) 10 to 2000 Hz, 20 g, 12 hours, 3 axes	$\Delta R \leq 1.0 \% ^{2,3}$	$\Delta R < 0.02 \%$
Rotational Life	200 cycles	$\Delta R \leq 2.0 \%$	$\Delta R < 0.04 \%$
Load Life	(108) 1000 hours at rated power at + 85 °C	$\Delta R \leq 2.0 \%$	$\Delta R < 0.12 \%$

<sup>1</sup> Numbers in parenthesis refer to test method MIL-STD-202 as modified by the detail specification.

<sup>2</sup> For values below 100 ohms, add 0.05 ohm to the allowable change.

<sup>3</sup> The referenced tests also require that setting stability change shall not exceed  $\pm 1.0$  percent plus the specified maximum resolution and operating torque shall not exceed 150 % of the specified maximum.

### DERATING



### ORDERING INFORMATION

12 <sup>S</sup> MODEL	501 VALUE
12 <sup>S</sup> = Top Adjustment Screw	First two digits are significant figures. Last digit specifies number of zeros to follow.
14 <sup>S</sup> = Side Adjustment Screw	
15 <sup>S</sup> = PC Mount	
17 <sup>S</sup> = Top Adjustment Screw	
18 <sup>S</sup> = Side Adjustment Screw	



### Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.