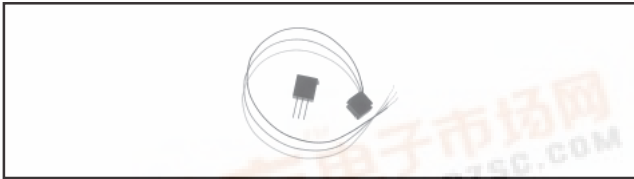


# Models 117S, 126S, 151S and 176S

Vishay Techno



## 3/8" [9.52mm] 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:**  $22 \pm 4$  turns.

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

**Resistance Tolerance:**  $\pm 5\%$  standard. Closer tolerances available.

**Temperature Coefficient:**  $(-65^{\circ}\text{C to } +150^{\circ}\text{C}) \pm 50\text{PPM}/^{\circ}\text{C}$ .

**Power Rating:** 1.0 watt at  $+85^{\circ}\text{C}$  derated to 0 watt at  $+150^{\circ}\text{C}$ . 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:**  $>100,000$  Megohms (500 VDC).

These specifications exceed MIL-Spec.

### MECHANICAL SPECIFICATIONS

**Operating Torque:** 5 ounce inch maximum.

**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:**  $-65^{\circ}\text{C to } +150^{\circ}\text{C}$ .

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

### FEATURES

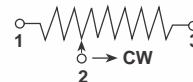
- Precious metal wiper.
- 1.0 watt to  $+85^{\circ}\text{C}$ .
- $\text{TCR} \pm 50\text{PPM}/^{\circ}\text{C}$ .
- Solderable leads.
- Military quality at affordable prices.

### STANDARD RESISTANCE VALUES

RESISTANCE* (Ohms)	NOMINAL RESOLUTION (%)
10	1.10
20	.85
50	.65
100	.51
200	.40
500	.45
1k	.34
2k	.27
5k	.20
10k	.16
20k	.13
25k	.12
35k	.11
50k	.10

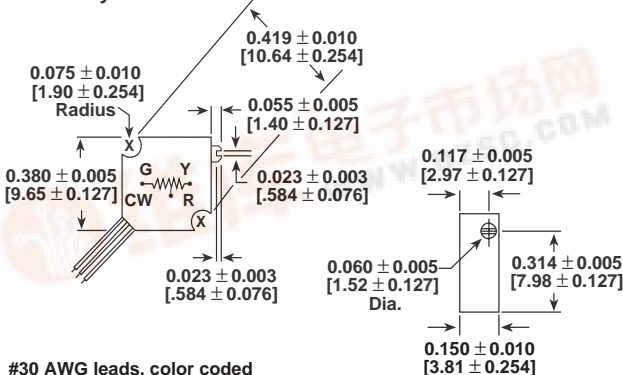
\*Other resistances available upon request.

### CIRCUIT DIAGRAM

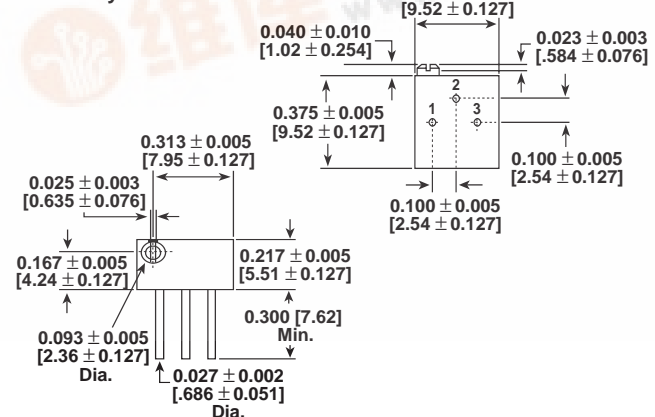


### DIMENSIONAL CONFIGURATIONS 3/8" [9.52mm] Square [Numbers in brackets indicate millimeters]

#### L Lead Style - 117S



#### P Lead Style - 126S



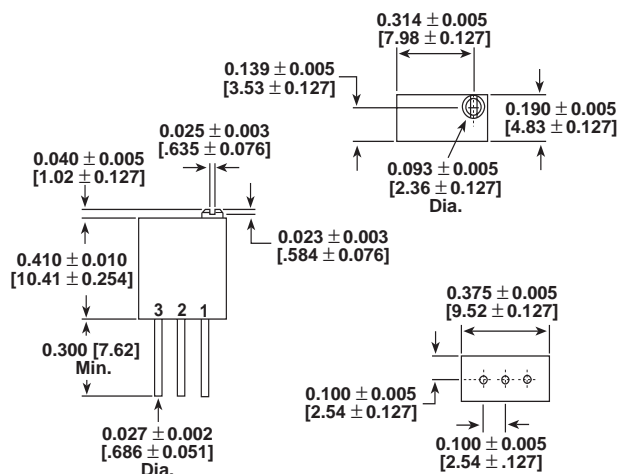


# Models 117<sup>S</sup>, 126<sup>S</sup>, 151<sup>S</sup> and 176<sup>S</sup>

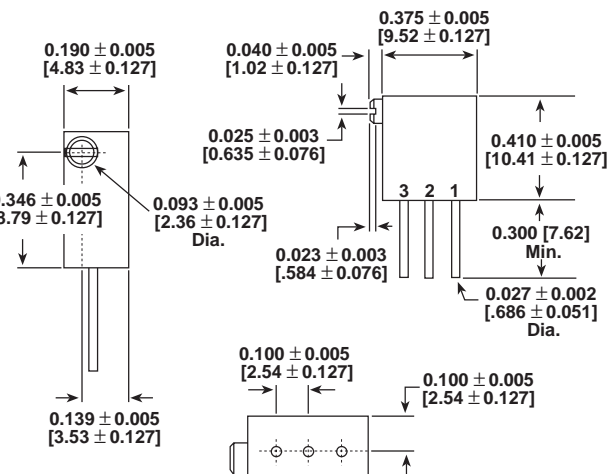
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## DIMENSIONAL CONFIGURATIONS 3/8" [9.52mm] Square [Numbers in brackets indicate millimeters]

### W Lead Style - 151<sup>S</sup>



### X Lead Style - 176<sup>S</sup>



## ENVIRONMENTAL PERFORMANCE

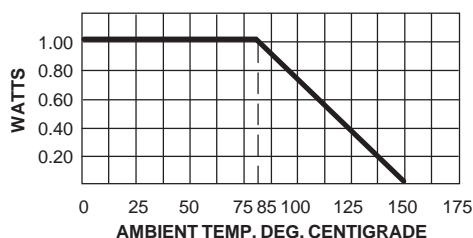
TEST <sup>1</sup>	CONDITIONS	MIL-PRF-39015 REQUIREMENT	TYPICAL CHANGE
Power Conditioning	(108) 50 hours at 1 watt at + 25°C	$\Delta R \leq 0.5\%^2$	$\Delta R < 0.08\%$
Thermal Shock	(107) 5 cycles, -55°C to + 125°C	$\Delta R \leq 1.0\%^2$	$\Delta R < 0.07\%$
Low Temperature Storage	72 hours, no load at - 65°C	$\Delta R \leq 1.0\%^2$	$\Delta R < 0.05\%$
Low Temperature Operation	1 hour storage, 45 minutes rated power at - 55°C	$\Delta R \leq 1.0\%^{2,3}$	$\Delta R < 0.08\%$
High Temperature Exposure	1000 hours, no load at + 150°C	$\Delta R \leq 1.0\%^{2,3}$	$\Delta R < 0.03\%$
Moisture Resistance	(106) 480 hours at rated power with humidity ranging from 80% RH to 98% RH	$\Delta R \leq 1.0\%^2$	$\Delta R < 0.22\%$
Resistance to Soldering Heat	(210) + 350°C for 3 seconds	$\Delta R \leq 1.0\%^2$	$\Delta R < 0.02\%$
Shock	(213) 18 shocks, 100g, 6 ms, sawtooth, 3 axes	$\Delta R \leq 1.0\%^{2,3}$	$\Delta R < 0.27\%$
Vibration	(204) 10 to 2000 Hz, 20g, 12 hours, 3 axes	$\Delta R \leq 1.0\%^{2,3}$	$\Delta R < 0.04\%$
Rotational Life	200 cycles	$\Delta R \leq 2.0\%$	$\Delta R < 0.06\%$
Load Life	(108) 10,000 hours at rated power at + 85°C	$\Delta R \leq 3.0\%$	$\Delta R < 0.23\%$

<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 ± 0.05 percent plus the specified maximum resolution.

## DERATING



## HOW TO ORDER

117<sup>S</sup>  
MODEL

117<sup>S</sup> = Teflon Leadwire  
126<sup>S</sup> = PC Mount  
151<sup>S</sup> = Top Adjustment Screw  
176<sup>S</sup> = Side Adjustment Screw

501  
VALUE

First two digits are significant figures. Last digit specifies number of zeros to follow.