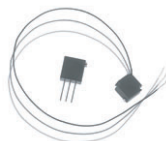


# Multi-Turn 3/8" (9.52 mm) Square Wirewound Trimmers



## ELECTRICAL SPECIFICATIONS

Electrical travel	22 turns $\pm$ 4 turns
Resistance range	10 $\Omega$ to 10 k $\Omega$ (extended range available in non MIL-SPEC product)
Resistance tolerance	$\pm$ 5 % standard (closer tolerances available)
Temperature coefficient (-65 °C to +150 °C)	$\pm$ 50 ppm/°C
Power rating	1.0 W at +85 °C derated to 0 W at +150 °C, these specifications exceed MIL-SPEC
End resistance	1 $\Omega$ or 2 %, whichever is greater
Equivalent noise resistance (ENR)	100 $\Omega$ maximum
Dielectric (DWW)	1000 V <sub>AC</sub> at atmospheric pressure These specifications exceed MIL-SPEC
Insulation resistance	> 100 000 M $\Omega$ (500 V <sub>DC</sub> ) these specifications exceed MIL-SPEC

## ENVIRONMENTAL SPECIFICATIONS

**Temperature limits:** -65 °C to +150 °C

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

## MECHANICAL SPECIFICATIONS

**Operating torque:** 5 oz.-inches maximum

**Rotation:** clutch stop, wiper idles

**Weight:** 0.935 g maximum

**Resistive element:** nickel chromium

**Rotational life:** 200 cycles minimum

**Terminal strength:** 2 lbs for 10 s

## FEATURES

- Precious metal wiper
- 1.0 W to +85 °C
- TCR  $\pm$  50 ppm/°C
- Solderable leads
- Military quality at affordable prices

## 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.

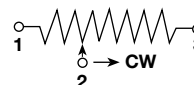
## STANDARD RESISTANCE VALUES

RESISTANCE <sup>(1)</sup> ( $\Omega$ )	NOMINAL RESOLUTION (%)
10	1.10
20	0.85
50	0.65
100	0.51
200	0.40
500	0.45
1K	0.34
2K	0.27
5K	0.20
10K	0.16
20K	0.13

### Note

<sup>(1)</sup> Other resistances available upon request

## CIRCUIT DIAGRAM



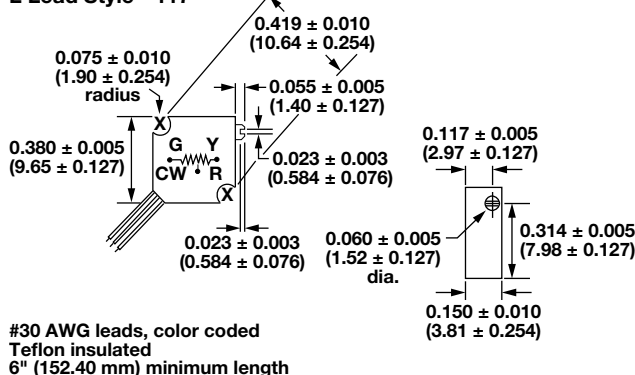
## GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: 117S500RB (preferred part number format)

1	1	7	S	5	0	0	R	B
GLOBAL MODEL			TYPE		RESISTANCE VALUE			PACKAGING
117 = teflon leadwire			/ = continuous rotation S = clutch stop		R = decimal K = thousand 100R = 100 $\Omega$ 5K00 = 5 k $\Omega$			B = bulk

Historical part numbering: 117s501 (will continue to be accepted)

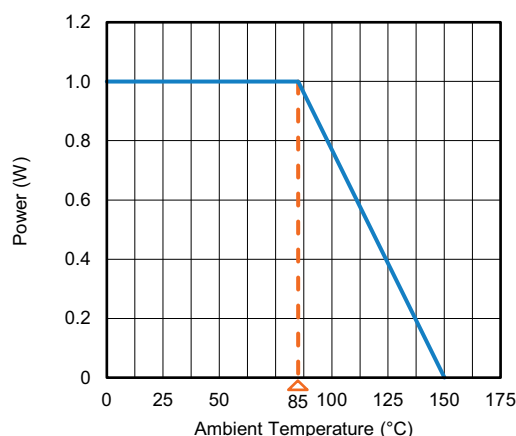
117	s	501
HISTORICAL MODEL	TYPE	RESISTANCE VALUE

**DIMENSIONS 3/8" (9.52 mm) SQUARE in inches (millimeters)**
**L Lead Style - 117<sup>S</sup>**

**ENVIRONMENTAL PERFORMANCE**

TEST <sup>(1)</sup>	CONDITIONS	MIL-PRF-39015 REQUIREMENT	TYPICAL CHANGE
Power conditioning (108)	50 h at 1 W 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 h, no load at -65 °C	$\Delta R \leq 1.0 \% ^{(2)}$	$\Delta R < 0.05 \%$
Low temperature operation	1 h storage, 45 min rated power at -55 °C	$\Delta R \leq 1.0 \% ^{(2)(3)}$	$\Delta R < 0.08 \%$
High temperature exposure	1000 h, no load at +150 °C	$\Delta R \leq 1.0 \% ^{(2)(3)}$	$\Delta R < 0.03 \%$
Moisture resistance (106)	480 h 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 s	$\Delta R \leq 1.0 \% ^{(2)}$	$\Delta R < 0.02 \%$
Shock (213)	18 shocks, 100 g, 6 ms, sawtooth, 3 axes	$\Delta R \leq 1.0 \% ^{(2)(3)}$	$\Delta R < 0.27 \%$
Vibration (204)	10 Hz to 2000 Hz, 20 g, 12 h, 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 h at rated power at +85 °C	$\Delta R \leq 3.0 \%$	$\Delta R < 0.23 \%$

**Notes**

- (1) Numbers in parenthesis refer to test method MIL-STD-202 as modified by the detail specification
- (2) For values below 100 W, add 0.05 W to the allowable change
- (3) The referenced tests also require that setting stability change shall not exceed  $\pm 0.05 \%$  plus the specified maximum resolution

**DERATING**

**ACCESSORIES**

Screwdrivers (to order separately)

[www.vishay.com/doc?57015](http://www.vishay.com/doc?57015)



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