

Multi-Turn 3/8" (9.52 mm) Square 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 turns \pm 4 turns
Resistance range	10 Ω to 10 k Ω (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 Ω or 2 %, whichever is greater
Equivalent noise resistance (ENR)	100 Ω maximum
Dielectric (DWW)	1000 V _{AC} at atmospheric pressure These specifications exceed MIL-SPEC
Insulation resistance	> 100 000 M Ω (500 V _{DC}) 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

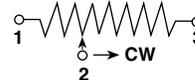
STANDARD RESISTANCE VALUES

RESISTANCE ⁽¹⁾ (Ω)	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

(1) Other resistances available upon request

CIRCUIT DIAGRAM



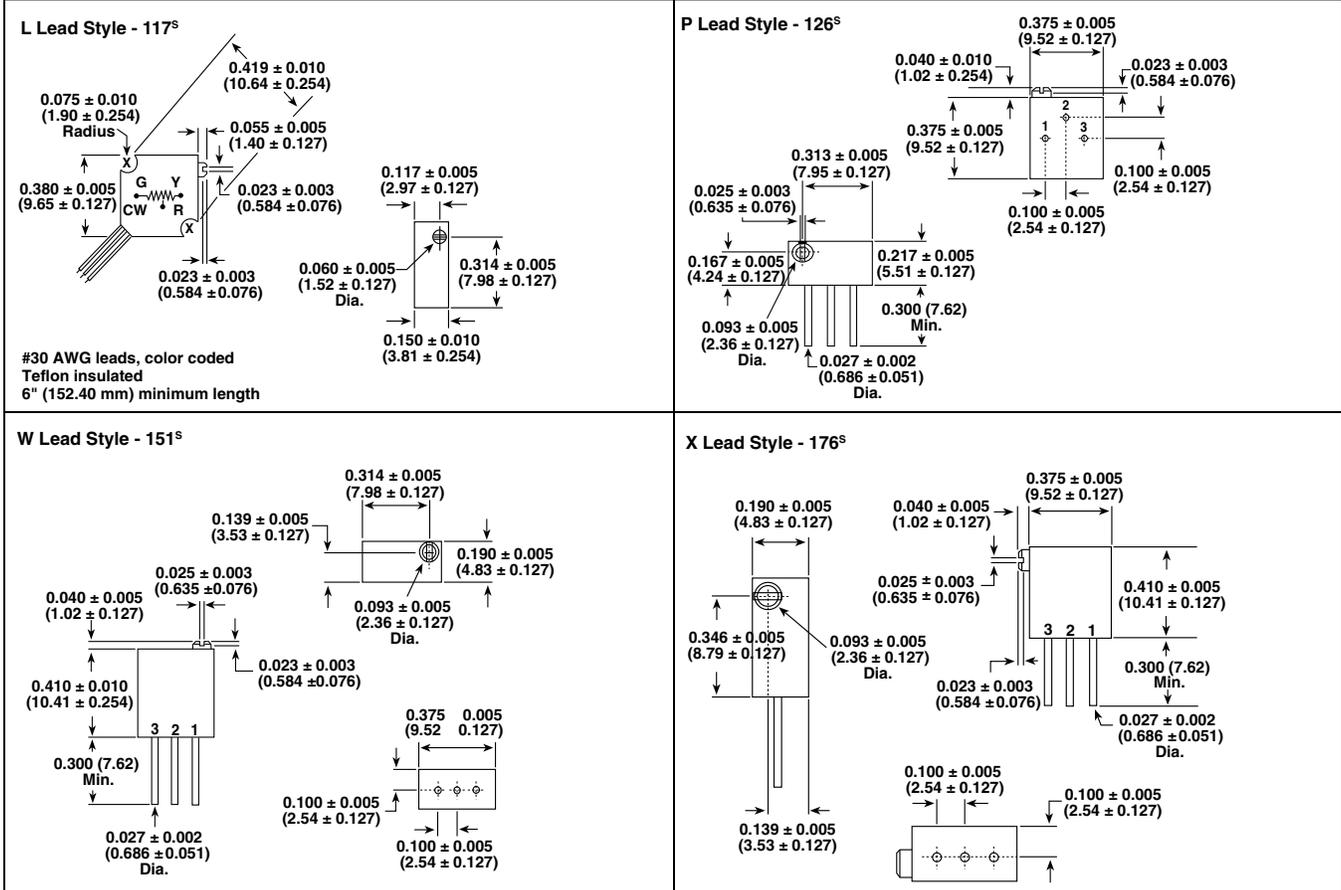
GLOBAL PART NUMBER INFORMATION

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 126 = PC mount 151 = top adjustment screw 176 = side adjustment screw			/ = continuous rotation S = clutch stop		R = decimal K = thousand 100R = 100 Ω 5K00 = 5 k Ω			B = bulk

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

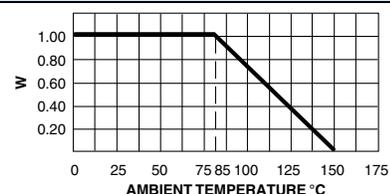
117	s	501
HISTORICAL MODEL	TYPE	RESISTANCE VALUE

DIMENSIONS 3/8" (9.52 mm) Square in inches (millimeters)

ENVIRONMENTAL PERFORMANCE

TEST ⁽¹⁾	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 settling stability change shall not exceed $\pm 0.05 \%$ plus the specified maximum resolution

DERATING




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