Multi-Turn 1/4" (6.35 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.

FEATURES

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

ELECTRICAL SPECIFICATIONS

Electrical travel	22 turns ± 4 turns
Resistance range	10 Ω to 5 kΩ (extended range available in non MIL-SPEC product)
Resistance tolerance	± 5 % standard
Temperature coefficient (-65 °C to +150 °C)	± 50 ppm/°C
Power rating	0.5 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 (DWV)	1000 V_{AC} at atmospheric pressure, these specifications exceed MIL-SPEC
Insulation resistance	> 100 000 MΩ (500 V_{DC}), these specifications exceed MIL-SPEC

MECHANICAL SPECIFICATIONS

Operating torque: 3 oz.-inches maximum, 17^S and 18^S, 5 oz.-inches maximum, 12^S, 14^S and 15^S

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

ENVIRONMENTAL SPECIFICATIONS

Temperature limits: -65 °C to +175 °C

Sealing: fully sealed case (non-hermetic)

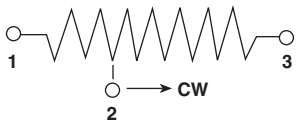
STANDARD RESISTANCE VALUES

RESISTANCE (1) (Ω)	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

Note

(1) Other resistances available upon request

CIRCUIT DIAGRAM



GLOBAL PART NUMBER INFORMATION

New global part numbering: 12S500RB (preferred part number format)

1	2	S	5	0	0	R	B

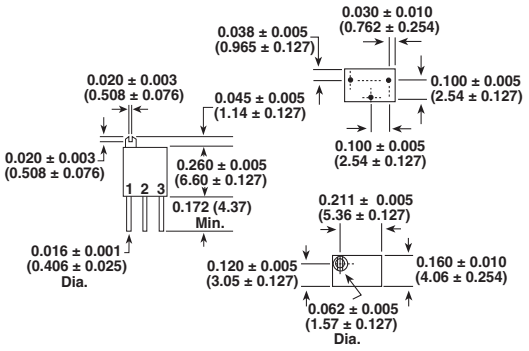
GLOBAL MODEL	TYPE	RESISTANCE VALUE	PACKAGING
12 = top adjustment screw **14** = side adjustment screw **15** = PC mount **17** = top adjustment screw **18** = side adjustment screw	**/** = continuous rotation **S** = clutch stop	**R** = decimal **K** = thousand **100R** = 100 Ω **5K00** = 5 kΩ	**B** = bulk

Historical part numbering: 12s501 (will continue to be accepted)

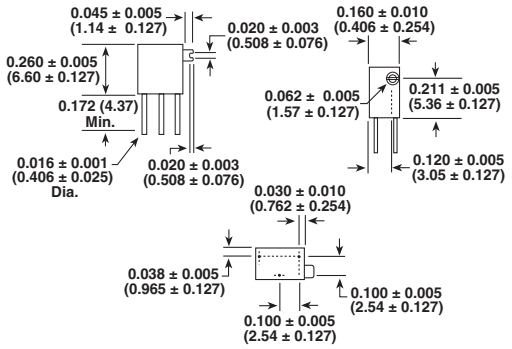
12	s	501
HISTORICAL MODEL	TYPE	RESISTANCE VALUE

DIMENSIONS 1/4" (6.35 mm) SQUARE in inches (millimeters)

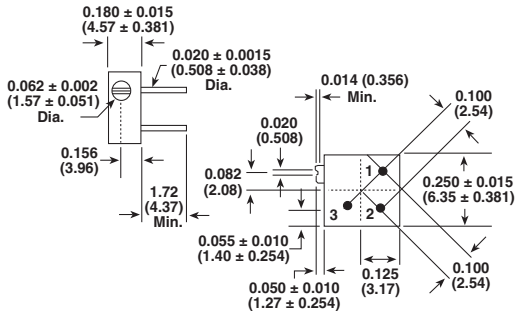
W Lead Style - 17S



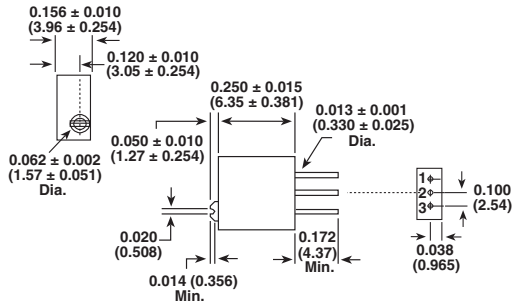
X Lead Style - 18S



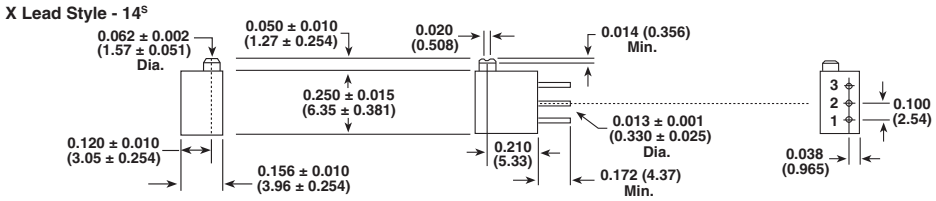
P Lead Style - 15S



W Lead Style - 12S



X Lead Style - 14S



ENVIRONMENTAL PERFORMANCE

TEST (1)		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 h storage, 45 min rated power at -55 °C	$\Delta R \leq 1.0$ % (2)(3)	$\Delta R < 0.01$ %
High temperature exposure		250 h, no load at +150 °C	$\Delta R \leq 1.0$ % (2)(3)	$\Delta R < 0.03$ %
Moisture resistance	(106)	240 h 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 s	$\Delta R \leq 1.0$ % (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 Hz to 2000 Hz, 20 *g*, 12 h, 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 h at rated power at +85 °C	$\Delta R \leq 2.0$ %	$\Delta R < 0.12$ %

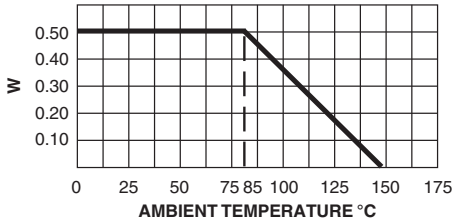
Notes

(1) Numbers in parenthesis refer to test method MIL-STD-202 as modified by the detail specification.

(2) For values below 100 Ω, add 0.05 Ω to the allowable change.

(3) The referenced tests also require that setting stability change shall not exceed ± 1.0 % plus the specified maximum resolution and operating torque shall not exceed 150 % of the specified maximum.

DERATING



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