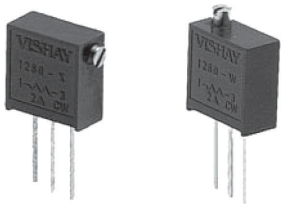
Bulk Metal® Foil Ultra High Technology Precision Trimming Potentiometers, 3/8" Square, RJ24 Style, Designed to Meet or Exceed the Requirements of MIL-PRF-39035, Char. H with a Smooth and Unidirectional Output



INTRODUCTION

Vishay Foil precision trimmers have the Bulk Metal® Foil resistive element which possesses a unique inherent temperature and load life stability. Plus, their advanced virtually back lash-free adjustment mechanism makes them easy to set quickly and accurately and keeps the setting exactly on target.

FEATURES

- Temperature coefficient of resistance (TCR): ± 10 ppm/°C (- 55 °C to + 150 °C ref. at + 25 °C); through the wiper [2]; ± 25 ppm/°C (see table 2 for low values)
- A smooth and unidirectional resistance with leadscrew adjustment
- Load life stability: 0.1 % typical ΔR, 1.0 % maximum ΔR under full rated power at + 85 °C for 10 000 h
- Settability: 0.05 % typical; 0.1 % maximum
- Setting stability: 0.1 % typical; 0.5 % maximum
- Power rating: 0.25 W at + 85 °C
- Resistance range: 5 Ω to 10 kΩ
- Resistance tolerance: ± 5 %, ± 10 %
- "O"-ring prevents ingress of fluids during any board cleaning operation
- Electrostatic discharge (ESD) up to 25 000 V
- Terminal finish: tin/lead

TABLE 1 - MODEL SELECTION

MODEL	TERMINATION STYLE	AVERAGE WEIGHT (g)	POWER RATING at + 85 °C AMBIENT	NO. OF TURNS
1260	W-edge mount, top adjust	0.4	0.25 W	21 ± 2
	X-edge mount, side adjust			

Note
• See figure 1

TABLE 2 - 1260 (RJ24 STYLE) SERIES ELECTRICAL SPECIFICATIONS

Temperature Coefficient of Resistance (TCR) 50 Ω to 10 kΩ End-to-end [1]	± 10 ppm/°C maximum (- 55 °C to + 150 °C, + 25 °C ref.)
Temperature Coefficient of Resistance (TCR) 5 Ω, 10 Ω and 20 Ω Through the wiper [2]	± 20 ppm/°C ± 25 ppm/°C
Stability Load life at 10 000 h	0.1 % typical ΔR 1.0 % maximum ΔR (under full rated power of 0.25 W at + 85 °C)
Power Rating [3]	0.25 W at + 85 °C
Settability	0.05 % typical; 0.1 % maximum
Setting Stability	0.1 % typical; 0.5 % maximum
Contact Resistance Variation - CRV (noise)	3 Ω typical; 10 Ω maximum
Hop-off	0.25 % typical; 1.0 % maximum
High-Frequency Operation Rise/decay time Inductance Capacitance	1 ns without ringing 0.08 µH typical 0.5 pF typical
Operating Temperature Range	- 55 °C to + 150 °C

TABLE 3 - VALUES VS. TOLERANCES

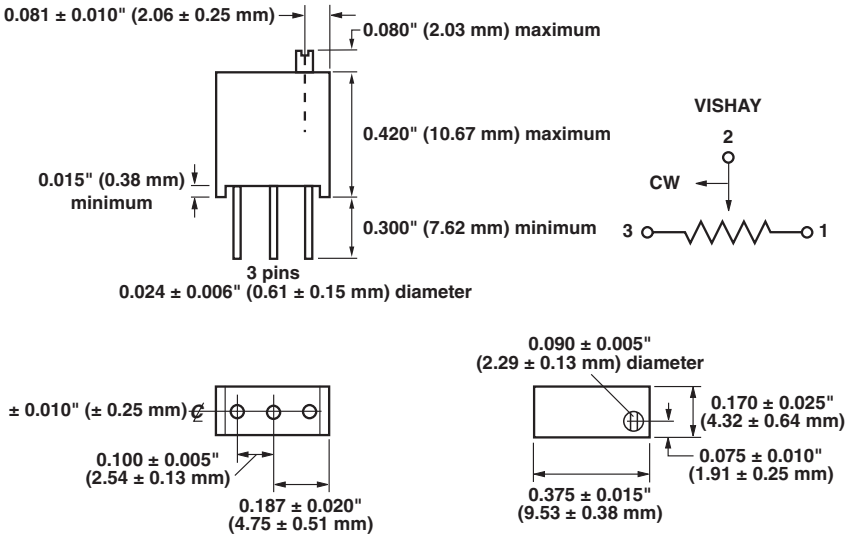
STANDARD RESISTANCE VALUES (in Ω)	STANDARD TOLERANCE
5, 10	± 10 %
20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	± 5 %

TABLE 4 - MECHANICAL SPECIFICATIONS

Adjustment Turns	21 ± 2
Mechanical Stops	Wiper idles - no discontinuity
Internal Terminations	All welded - no flux
Case Material	Diallyl-phthalate: black (DAP)
Shaft Torque	3 oz. in. maximum
Backlash	0.005 % typical

FIGURE 1 - SCHEMATIC AND DIMENSIONS in Inches (Millimeters)

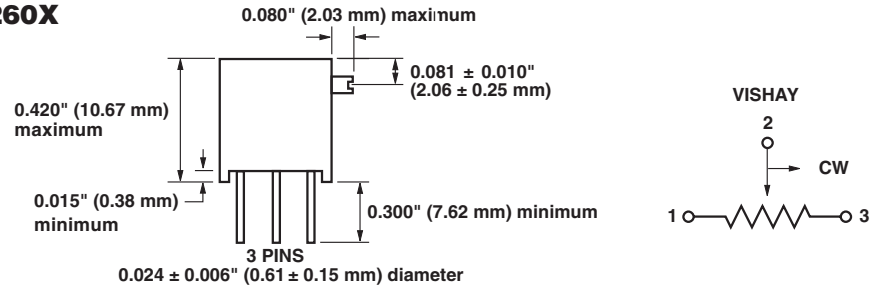
1260W

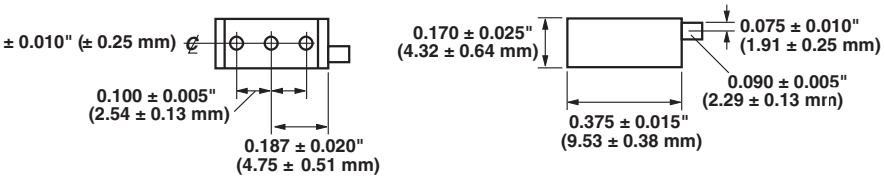


STANDARD MARKING:

Model No.
Date Code
Resistance Value
Tolerance

1260X





NOTES:

Adjustment screw 0.090" (2.29 mm) diameter with 0.020" (0.51 mm) x 0.031" (0.79 mm) slot. Model 1260 has solder plated copper terminal pins. 0.024" (0.61 mm) diameter, 0.300" (7.62 mm) length minimum.

FIGURE 2 - POWER DERATING CURVE

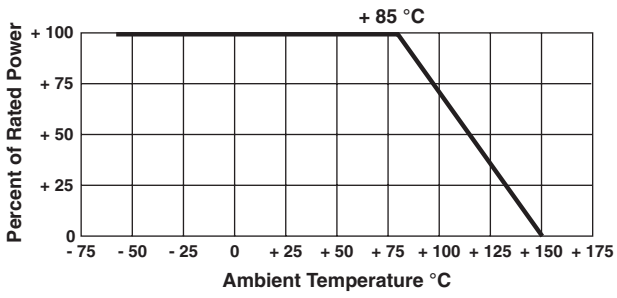


TABLE 5 - COMPARISON		
	MIL-PRF-39035/2 CHARACTERISTIC H (4)	**1260 MAXIMUM**
TEST GROUP I Conditioning Contact resistance variation - CRV (noise) Immersion	 ± 1.0 % ± 3.0 % or 3 Ω (5) No continuous stream of bubbles	 ± 0.5 % 3 Ω typical, 10 Ω maximum No continuous stream of bubbles
TEST GROUP Ia Visual and mechanical Actual effective electrical travel End resistance Dielectric withstanding voltage - DWV Per MIL-STD-202, methods 301 and 105 Atmospheric pressure Barometric pressure Insulation resistance Shaft torque Thermal shock Setting stability	 No failures 10 to 25 turns 2 % or 2 Ω (5) 600 V_{AC}, 1 min 250 V_{AC}, 1 min ≥ 1000 MΩ 3 oz. in. maximum ± 1.0 % ± 1.0 %	 No failures 21 ± 2 turns 2 Ω for values ≤ 1 kΩ; 5 Ω for values ≥ 2 kΩ; 600 V_{AC}, 1 min 250 V_{AC}, 1 min > 1000 MΩ 3 oz. in. maximum ± 0.5 % ± 0.5 %
TEST GROUP II Solderability	 Per MIL-STD-202, method 208	 Per MIL-STD-202, method 208
TEST GROUP III Resistance temperature characteristic - TCR Moisture resistance Contact resistance variation - CRV (noise)	 ± 0.005 %/°C (± 50 ppm/°C) ± 1.0 % 3.0 % or 3 Ω (5)	 ± 0.001 %/°C (± 10 ppm/°C) ± 0.5 % 3 Ω typical, 10 Ω maximum
TEST GROUP IV Settability Shock Setting stability Vibration Setting stability Contact resistance variation - CRV (noise) Salt spray	 ± 1.0 % ± 1.0 % ± 1.0 % ± 1.0 % ± 1.0 % 3.0 % or 3 Ω (5) No corrosion	 ± 0.1 % ± 0.5 % ± 0.5 % ± 0.5 % ± 0.5 % 3 Ω typical, 10 Ω maximum No corrosion
TEST GROUP V Solder heat Low-temperature operation Setting stability Low-temperature storage High-temperature exposure Setting stability Contact resistance variation - CRV (noise) Integrity of shaft	 ± 1.0 % ± 1.0 % ± 2.0 % ± 1.0 % ± 3.0 % ± 2.0 % 3.0 % or 3 Ω (5) No loosening or breakage	 ± 0.1 % ± 0.5 % ± 0.5 % ± 0.5 % ± 0.5 % ± 0.5 % 3 Ω typical, 10 Ω maximum No loosening or breakage
TEST GROUP VI Rotational life (200 cycles) Contact resistance variation - CRV (noise) Terminal strength	 ± 2.0 % 3.0 % or 3 Ω (5) 2 lbs.	 ± 2.0 % 3 Ω typical, 10 Ω maximum 2 lbs.
TEST GROUP VII Life (2000 h) at + 85 °C Life (10 000 h) at + 85 °C	 ± 3.0 % ± 5.0 %	 ± 0.1 % typical, ± 1.0 % maximum ± 0.1 % typical, ± 1.0 % maximum
TEST GROUP VIII Solvent resistance	 No failures	 No failures

Notes

(1) Maximum TCR applies to the 3 σ (sigma) limit or 99.73 % of a production lot. (Measured end-to-end with wiper off the element.)

(2) Measurements of TCR through the wiper are influenced more by setting stability and the percentage of the total resistance in use (at the wiper) than by fundamental resistance change due to temperature alone. The parameter shown in table 2 is a 2 s distribution typifying the behavior of the device when used with 40 % or more of the total resistance in use.

(3) Derated linearly for full power at + 85 °C to zero power at + 150 °C. See figure 2.

(4) All ΔR's are measured to the tolerance specified + 0.01 Ω.

(5) Whichever is greater.

Special available options:

Special marking

Power conditioning and screening operations.

VISHAY TRIMMERS ARE INSPECTED

100 % for:

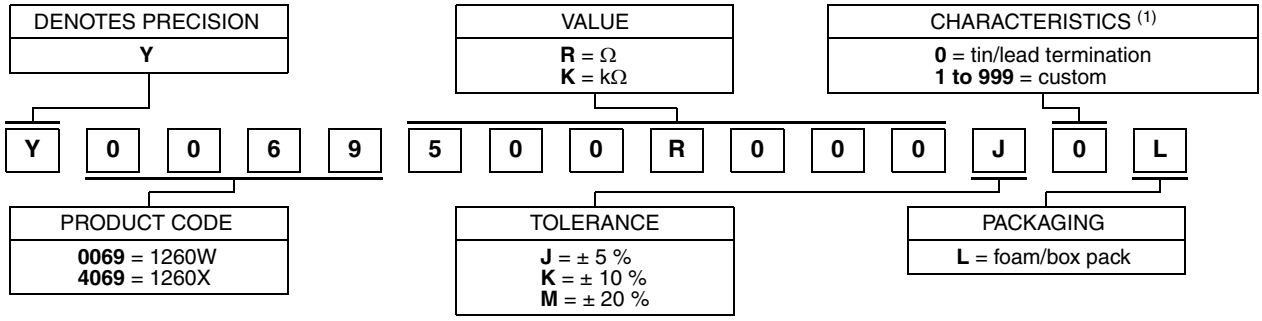
- Immersion
- Resistance tolerance check
- End resistance
- Visual-mechanical
- Dynamic tests for continuity, CRV

By sample for:

- TCR
- DWV

TABLE 6 - GLOBAL PART NUMBER INFORMATION

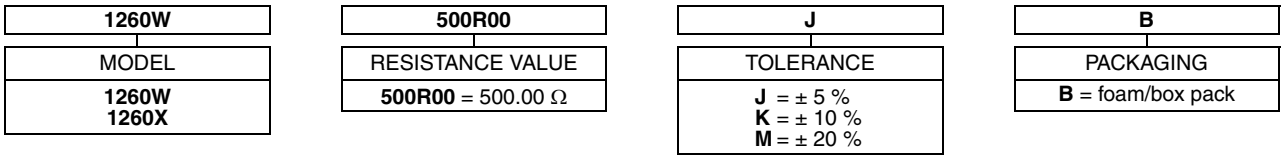
NEW GLOBAL PART NUMBER: Y0069500R000J0L (preferred part number format)



FOR EXAMPLE: ABOVE GLOBAL ORDER Y0069 500R000 J 0 L:

TYPE: 1260W
VALUE: 500.0 Ω
ABSOLUTE TOLERANCE: ± 5.0 %
TERMINATION: tin/lead
PACKAGING: foam/box pack

HISTORICAL PART NUMBER: 1260W 500R00 J B (will continue to be used)



Note

(1) For non-standard requests, please contact application engineering.

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