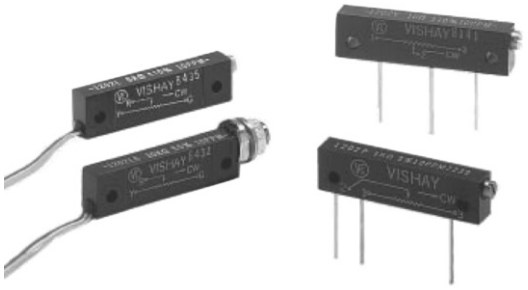
Bulk Metal® Foil Technology
Precision Trimming Potentiometers, 1 1/4 Inch Rectilinear, RJ12 Style, Designed to Meet or Exceed The Requirements of MIL-PRF-22097, Char. F



FEATURES

- Temperature coefficient of resistance (TCR): ± 10 ppm/°C maximum[3] (- 55 °C to + 150 °C ref. at + 25 °C); through the wiper[4]; ± 25 ppm/°C
- Load life stability: 0.1 % typical ΔR, 0.5 % maximum ΔR under full rated power at + 85 °C for 2000 h
- Settability: 0.05 % typical; 0.1 % maximum
- Setting stability: 0.1 % typical; 0.5 % maximum, ΔSS
- Power rating: 0.5 W at + 85 °C
- Resistance range: 2 Ω to 20 kΩ
- "O"-ring prevents ingress of fluids during any board cleaning operation
- Electrostatic discharge: above 25 000 V
- Terminal finishes available: gold plated

Pb-free Available

RoHS* COMPLIANT

TABLE 1 - MODEL SELECTION†

MODEL	TERMINATION STYLE	AVERAGE WEIGHT (g)	POWER RATING at + 85 °C AMBIENT	NO. OF TURNS
1202	P-In line PC pins	2.5	0.5 W	25 ± 2
	Y-staggered PC pins[1]	2.5		
	L-flexible wire leads	3.3		
	LB-flexible wire leads with bushings	5.1		

TABLE 2 - VALUES VS. TOLERANCES

STANDARD RESISTANCE VALUES (in Ω)	STANDARD TOLERANCES
2, 5, 10	± 10 %[2], ± 20 %
20, 50, 100, 200, 250, 500, 1K, 2K, 5K, 10K, 20K	5 %, 10 %

Note
1. See Figures 1 and 2.

TABLE 3 - 1202 (RJ12) SERIES ELECTRICAL SPECIFICATIONS

Temperature Coefficient of Resistance (TCR) end-to-end[3] 2 Ω, 5 Ω, 10 Ω, 20 Ω through the wiper[4]	 ± 10 ppm/°C maximum (- 55 °C to + 25 °C) ± 10 ppm/°C maximum (+ 25 °C to + 150 °C) ± 20 ppm/°C ± 25 ppm/°C
Stability load life at 2000 h† load life at 10 000 h†	 0.1 % typical ΔR; 0.5 % maximum ΔR 0.1 % typical ΔR; 1.0 % maximum ΔR
Power Rating[5]	0.5 W at + 85 °C
Settability	0.05 % typical; 0.1 % maximum
Setting Stability	0.1 % typical; 0.5 % maximum ΔSS
Contact Resistance variation - CRV (noise)	3 Ω typical; 10 Ω maximum
Hop-off	0.25 % typical; 1.0 % maximum
High-Frequency Operation Rise time Inductance Capacitance	to 100 MHz 10 ns at 1 kΩ 0.08 µH typical 0.5 pF typical
Operating Temperature Range	- 55 °C to + 150 °C

Notes
† Under full rated power of 0.5 W at + 85 °C.
• Refer to page 4 for footnotes.

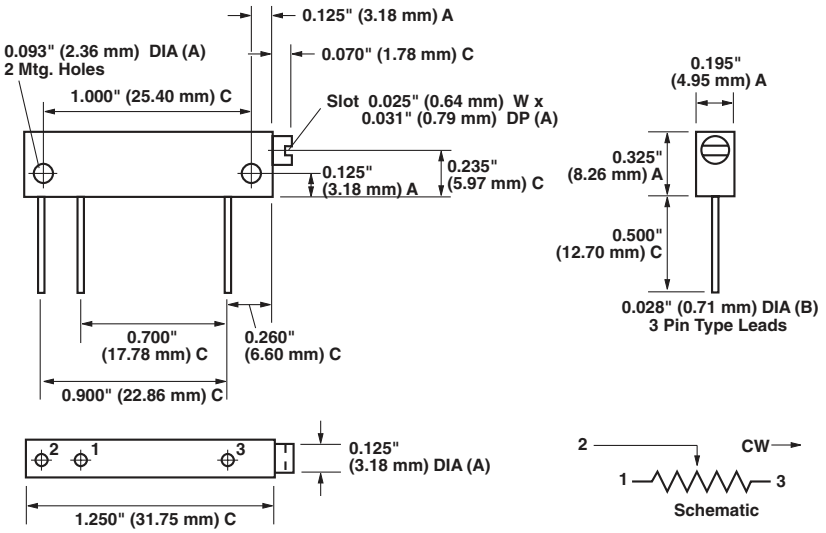
TABLE 4 - MECHANICAL SPECIFICATIONS

Adjustment Turns	25 ± 2	**Case Material**	Glass fortified diallyl-phthalate (DAP); black
Mechanical Stops	Wiper idles - no discontinuity	**Shaft Torque**	8 oz. in. maximum; 3 oz. in. typical
Internal Terminations	All welded - no flux	**Backlash**	0.05 % typical

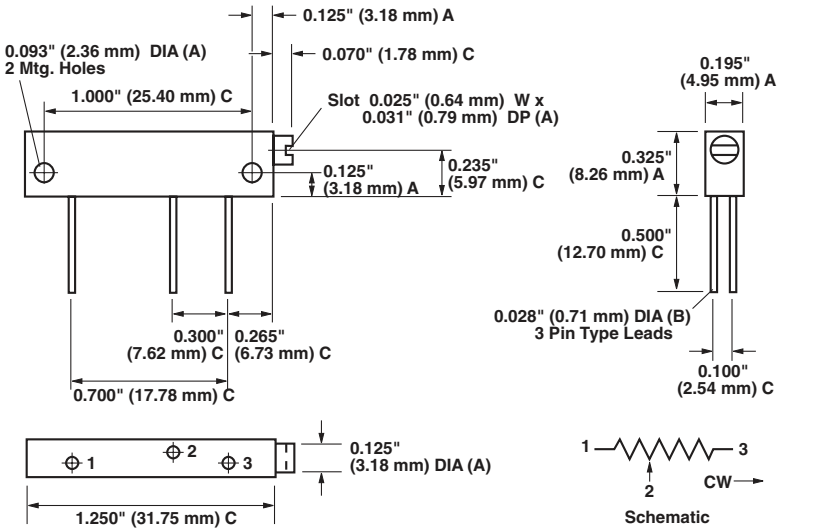
* Pb containing terminations are not RoHS compliant, exemptions may apply

FIGURE 1 - SCHEMATIC AND DIMENSIONS in inches (millimeters)

1202P
(In-Line Pins)[1)]



1202Y
(Staggered Pins)[1)]



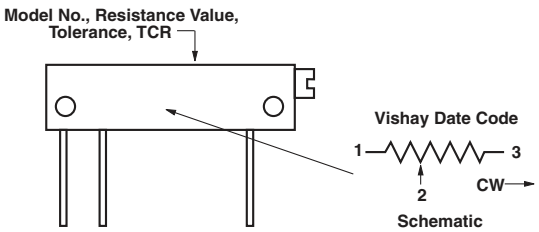
TOLERANCES

A = ± 0.005" (0.13 mm)

B = ± 0.003" (0.08 mm)

C = ± 0.010" (0.25 mm)

STANDARD MARKING ILLUSTRATION

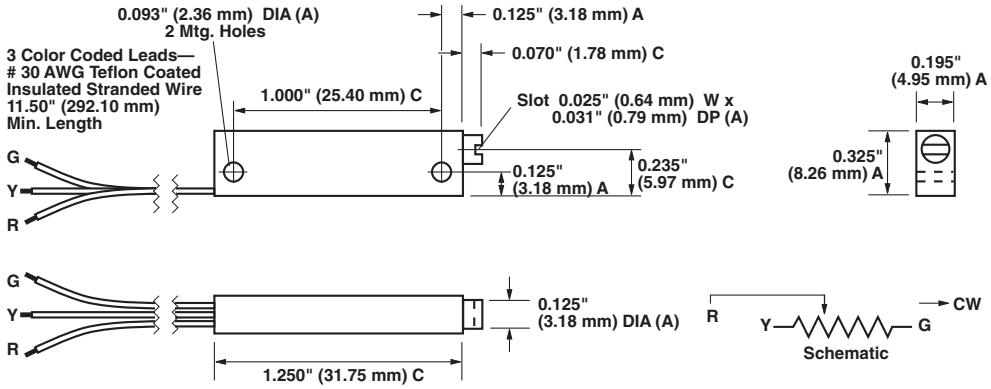


Note

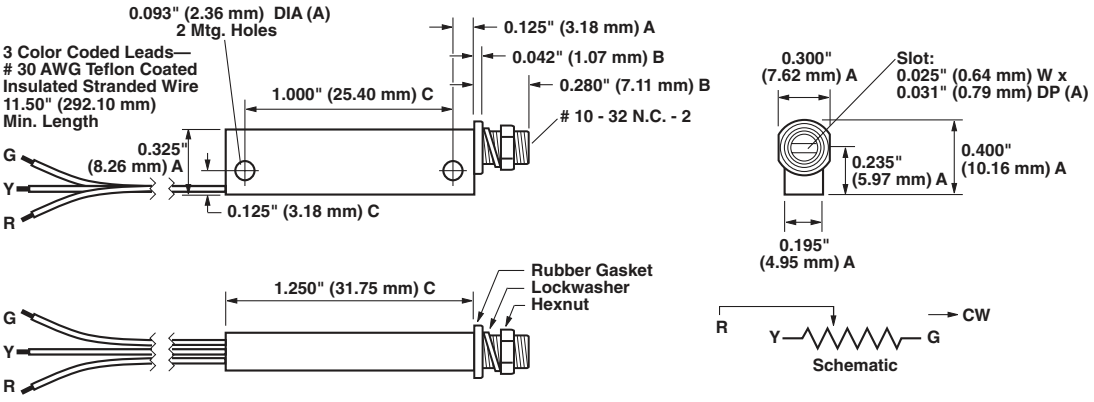
1. Pin leads are gold plated nickel which are solderable or weldable.

FIGURE 2 - SCHEMATIC AND DIMENSIONS in inches (millimeters)

1202L
(Flexible Leads)



1202LB
(Panel Mounted)



TOLERANCES
A = ± 0.005" (0.13 mm)
B = ± 0.003" (0.08 mm)
C = ± 0.010" (0.25 mm)

Standard marking shown on previous page.

FIGURE 3 - POWER DERATING CURVE

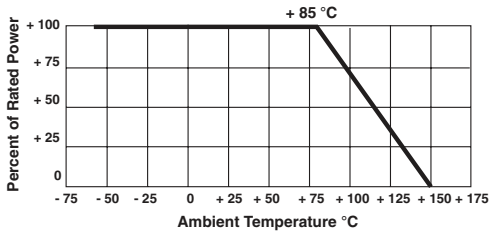


TABLE 5 - COMPARISON

	MIL-PRF-22097/2 CHARACTERISTIC F[7]	1202 MAXIMUM (Worst Case)
TEST GROUP I		
Visual and mechanical	No failures	No failures
Total resistance	± 10 %	± 10 %
Actual effective electrical travel	17 to 27 turns	25 ± 2 turns
End resistance	± 2 % or 20 Ω[7]	2 Ω
Contact resistance variation - CRV (noise)	± 3.0 % or 3 Ω[7]	3 Ω typical, 10 Ω maximum
Dielectric withstanding voltage - DWV (atmospheric and barometric pressure)	Per MIL-STD-202, methods 301 and 105	Per MIL-STD-202, methods 301 and 105
Insulation resistance	≥ 1000 MΩ	≥ 1000 MΩ
Shaft torque	8 oz. in. maximum	8 oz. in. maximum
Thermal shock	± 1.0 %	± 1.0 %
TEST GROUP II		
Resistance temperature characteristic - TCR	± 0.01 % (± 100 ppm/°C)	± 0.001 % (± 10 ppm/°C)
Moisture resistance	± 1.0 %	± 0.5 %
Contact resistance variation - CRV (noise)	3.0 % or 3 Ω[7]	3 Ω typical, 10 Ω maximum
TEST GROUP III		
Shock (specified pulse)	± 1.0 %	± 0.5 %
Vibration (high-frequency)	± 1.0 %	± 0.5 %
Contact resistance variation - CRV (noise)	± 3.0 % or 3 Ω[7]	3 Ω typical, 10 Ω maximum
Salt spray	No corrosion	No corrosion
TEST GROUP IV		
Solder heat	± 1.0 %	± 0.05 %
Life (1000 h at + 85 °C)[8]	± 2.0 %	± 0.5 %
Contact resistance variation - CRV (noise)	± 3.0 % or 3 Ω[7]	3 Ω typical, 10 Ω maximum
TEST GROUP V		
Low-temperature operation	± 1.0 %	± 0.5 %
High-temperature exposure	± 2.0 %	± 0.5 %
Contact resistance variation - CRV (noise)	± 3.0 % or 3 Ω[7]	3 Ω typical, 10 Ω maximum
TEST GROUP VI		
Rotational life	± 2.0 %	± 2.0 %
Contact resistance variation - CRV (noise)	± 3.0 % or 3 Ω[7]	3 Ω typical, 10 Ω maximum
Terminal strength	2 lbs	2 lbs
TEST GROUP VII		
Solderability (excluding termination L)	MIL-STD-202 method 208	MIL-STD-202 method 208
Immersion (excluding termination L)	No continuous stream of bubbles	No continuous stream of bubbles
TEST GROUP VIII	MIL-STD-810 method 508	MIL-STD-810 method 508
Fungus	No mechanical damage	No mechanical damage

Notes

1. Preferred Termination style for current 1-1/4 inch rectilinear trimmers (staggered PC pins present a sturdier mounting arrangement for shock, vibration, and impact situations).
2. 10 W at ± 5 % available on special order.
3. 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.)
4. 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 3 is a 2 σ distribution typifying the behavior of the device when used with 40 % or more of the total resistance in use.
5. Derated linearly from full power at + 85 °C to zero (0) W at + 150 °C. See Figure 3 in this data sheet.
6. All ΔR's are measured to the tolerance specified + 0.01 Ω.
7. Whichever is greater.
8. Load-Life test performed at nominal rated power, 0.5 W, at + 85 °C.

Special Available Options:

Special marking
Special lengths for lead wires (L, LB Style)
Hooked leads
Alternate bushing and PC combinations
Power conditioning and screening operations

VISHAY TRIMMERS ARE INSPECTED

100 % for:

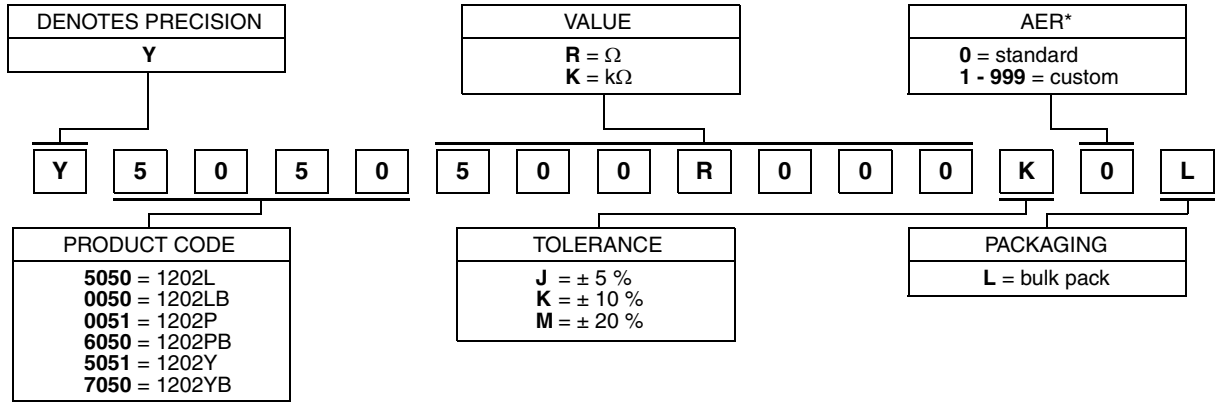
- Short-time overload (6.25 x rated power for 5 s on; and for 30 s off - 3 cycles)
- Immersion
- Resistance tolerance check
- End resistance
- Visual-mechanical
- Dynamic tests for continuity, CRV

By Sample for:

- TCR
- DWV

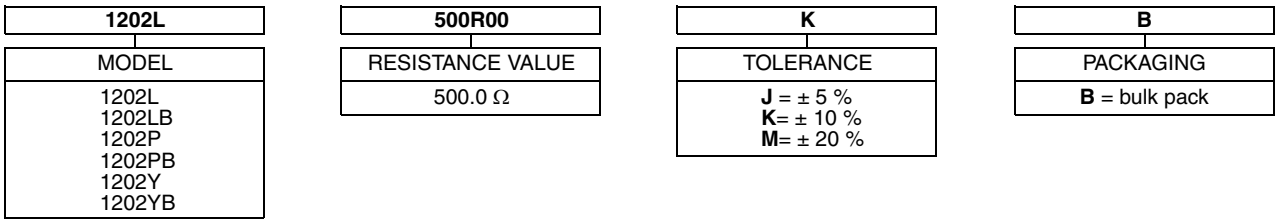
TABLE 6 - GLOBAL PART NUMBER INFORMATION

NEW GLOBAL PART NUMBER: Y5050500R000K0L (preferred part number format)



FOR EXAMPLE: ABOVE GLOBAL ORDER Y5050 500R000 K 0 L:
TYPE: 1202L
VALUE: 500.0 Ω
ABSOLUTE TOLERANCE: ± 10.0 %
AER: standard
PACKAGING: bulk pack

HISTORICAL PART NUMBER: 1202L 500R00 K B (will continue to be used)



Note

* For non-standard requests, please contact Application Engineering.

Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.