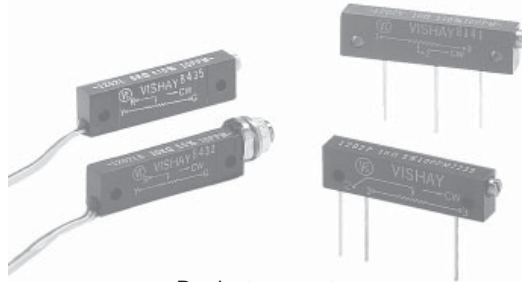




Bulk Metal[®] Foil Technology

Precision Trimming Potentiometers, 1 1/4 Inch Rectilinear, RJ12 Style, Designed to Meet or Exceed The Requirements of Mil-PRF-22097, Char. F



Product may not be to scale

FEATURES

- Temperature Coefficient of Resistance (TCR): $\pm 10\text{ppm}/^\circ\text{C}$ Maximum⁴ (-55°C to $+150^\circ\text{C}$ Ref. @ $+25^\circ\text{C}$); Through the wiper⁵; $\pm 25\text{ppm}/^\circ\text{C}$
- Load Life Stability: 0.1% Typical ΔR , 0.5% Maximum ΔR under Full Rated Power @ $+85^\circ\text{C}$ for 2,000 hours
- Settability: 0.05% Typical; 0.1% Maximum
- Setting Stability: 0.1% Typical; 0.5% Maximum, ΔSS
- Power Rating: 0.5 watts @ $+85^\circ\text{C}$
- Resistance Range: 2Ω to $20\text{K}\Omega$

TABLE 1 - MODEL SELECTION *

MODEL	TERMINATION STYLE	AVERAGE WEIGHT (g)	STANDARD RESISTANCE VALUES (in Ω)	STANDARD TOLERANCES	POWER RATING @ $+85^\circ\text{C}$ AMBIENT	NO. OF TURNS
1202	P-In Line PC Pins	2.5	2, 5, 10	$\pm 10\%$, $\pm 20\%$	0.5W	25 \pm 2
	Y-Staggered PC Pins ¹	2.5				
	L-Flexible Wire Leads	3.3	20, 50, 100, 200, 250, 500	5%, 10%		
	LB-Flexible Wire Leads with bushings	5.1	1K, 2K, 5K, 10K, 20K			

*See Figures 1 and 2 in this data sheet.

TABLE 2 - 1202 (RJ12) SERIES ELECTRICAL SPECIFICATIONS³

Temperature Coefficient of Resistance (TCR) End-to-End ⁴	$\pm 10\text{ppm}/^\circ\text{C}$ Maximum (-55°C to $+25^\circ\text{C}$) $\pm 10\text{ppm}/^\circ\text{C}$ Maximum ($+25^\circ\text{C}$ to $+150^\circ\text{C}$)
2 Ω 5 Ω 10 Ω 20 Ω Through the Wiper ⁵	$\pm 20\text{ppm}/^\circ\text{C}$ $\pm 25\text{ppm}/^\circ\text{C}$
Stability Load Life @ 2,000 Hours* Load Life @ 10,000 Hours*	0.1% Typical ΔR 0.5 % Maximum ΔR 0.1% Typical ΔR 1.0 % Maximum ΔR
Power Rating⁶	0.5 watts @ $+85^\circ\text{C}$
Settability	0.05% Typical; 0.1% Maximum
Setting Stability	0.1% Typical; 0.5% Maximum ΔSS
Contact Resistance Variation – CRV (noise) ⁷	3 Ω Typical 10 Ω Maximum
Hop-off	0.25% Typical; 1.0% Maximum
High-Frequency Operation Rise/Decay Time Inductance Capacitance	To 100MHz 10ns @ 1K Ω 0.08 μH Typical 0.5pF Typical
Operating Temperature Range	-55°C to $+150^\circ\text{C}$

*Under Full Rated Power of 0.5 watts @ $+85^\circ\text{C}$. Refer to last page in this data sheet for footnotes.

TABLE 3 - MECHANICAL SPECIFICATIONS

Adjustment Turns	25 \pm 2
Mechanical Stops	Wiper Idles – No Discontinuity
Internal Terminations	All Welded – No Flux
Case Material	Glass Fortified Diallyl-Phthalate (DAP); Black
Shaft Torque	8 oz. in. Maximum; 3 oz. in. Typical
Backlash	0.05% Typical

TABLE 4 - ORDERING INFORMATION - 1202 SERIES PARTS

Please specify Vishay Model 1202 Precision Trimming Potentiometers as follows:

Example:

1202	P	100R	10%
— —	— —	— —	— —
MODEL NO.	TERMINATION STYLE	RESISTANCE VALUE	TOLERANCE

See Table 1 for details. See Figure 1, next page for Standard Marking Illustration.

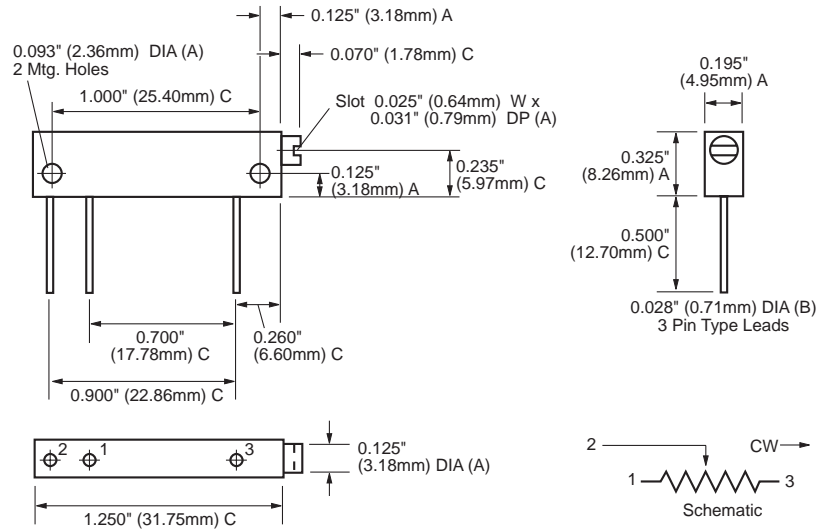
VISHAY FOIL • FRANCE +33.4.93.37.28.24 FAX: +33.4.93.37.27.31
• GERMANY +49.9287.710 FAX: +49.9287.70435
• ISRAEL +972.3.557.0945 FAX: +972.3.558.9121

• ITALY +39.2.300.11919 FAX: +39.2.300.11999
• JAPAN +81.42.729.0661 FAX: +81.42.729.3400
• SINGAPORE +65.788.6668 FAX: +65.788.0988

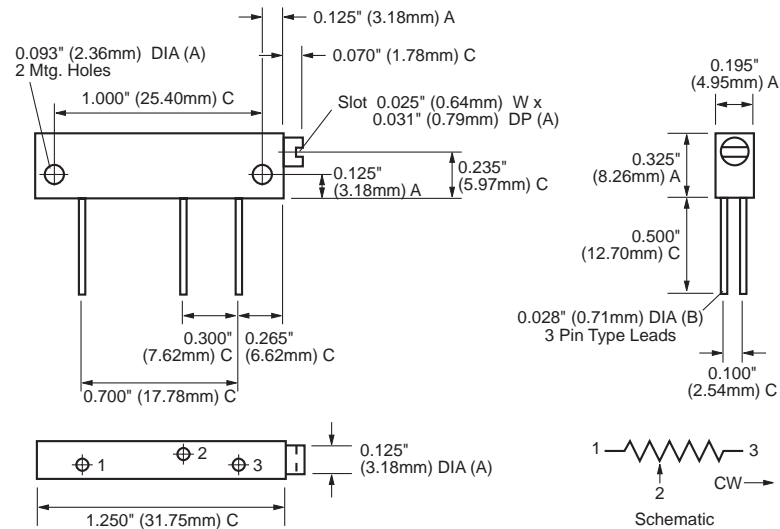
• SWEDEN +46.8.594.70590 FAX: +46.8.594.70581
• UK +44 191 514 8237 FAX: +44 1953 457 722
• USA +1 610 407-4800 FAX: +1 610 640-9081

FIGURE 1 - SCHEMATIC AND DIMENSIONS in inches (millimeters)

1202P
(In-Line Pins*)



1202Y
(Staggered Pins*)

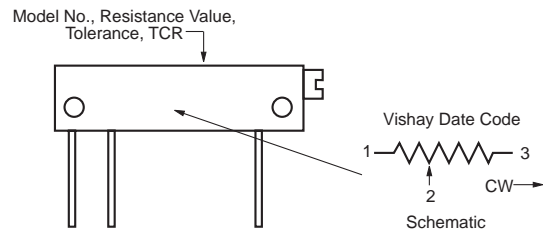


TOLERANCES

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

*Pin leads are gold plated nickel which are solderable or weldable

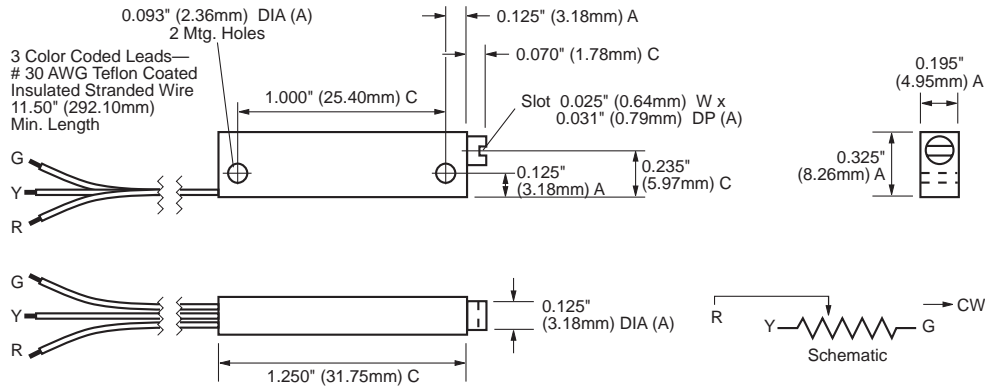
STANDARD MARKING ILLUSTRATION



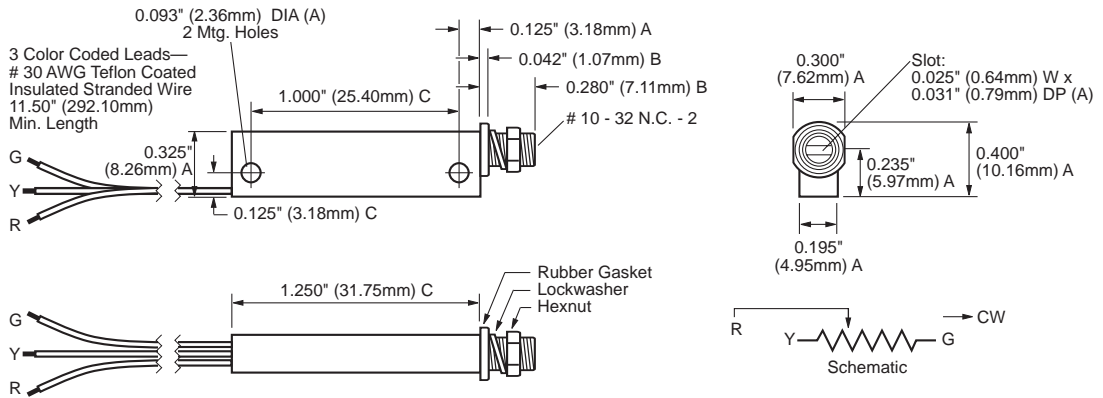
TRIMMERS

FIGURE 2 - SCHEMATIC AND DIMENSIONS in inches (millimeters)

1202L
(Flexible Leads)



1202LB
(Panel Mounted)



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

Standard marking shown on previous page.

TRIMMERS

FIGURE 3 - POWER DERATING CURVE

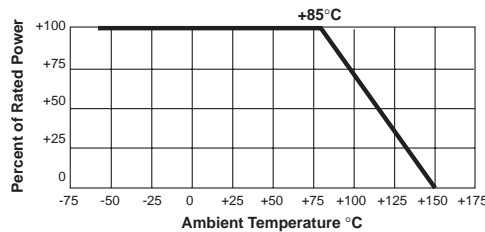




TABLE 5 - COMPARISON		
	MIL-PRF-22097/2 CHARACTERISTIC F ⁸	1202 MAXIMUM (WORST CASE)
TEST GROUP I Visual and Mechanical Total Resistance Actual Effective Electrical Travel End Resistance Contact Resistance Variation – CRV (noise) Dielectric Withstanding Voltage – DWV (Atmospheric and Barometric Pressure) Insulation Resistance Shaft Torque Thermal Shock	No Failures ± 10% 17 to 27 Turns ± 2% or 20Ω ⁹ ± 3.0% or 3Ω ⁹ Per MIL-Std-202, Methods 301 and 105 ≥ 1000 Megohms 8oz. in. Maximum ± 1.0%	No Failures ± 10% 25 ± 2 Turns 2Ω 3Ω Typical, 10Ω Maximum Per MIL-Std-202, Methods 301 and 105 > 1000 Megohms 8oz. in. Maximum ± 1.0%
TEST GROUP II Resistance Temperature Characteristic – TCR Moisture Resistance Contact Resistance Variation – CRV (noise)	± 0.01% (± 100ppm/°C) ± 1.0% 3.0% or 3Ω ⁹	± 0.001% (± 10 ppm/°C) ± 0.5% 3Ω Typical, 10 Ω Maximum
TEST GROUP III Shock (Specified Pulse) Vibration (High-Frequency) Contact Resistance Variation – CRV (noise) Salt Spray	± 1.0% ± 1.0% ± 3.0% or 3Ω ⁹ No Corrosion	± 0.5% ± 0.5% 3Ω Typical, 10Ω Maximum No Corrosion
TEST GROUP IV Solder Heat Life (1,000 Hours @ + 85°C) ¹⁰ Contact Resistance Variation – CRV (noise)	± 1.0% ± 2.0% ± 3.0% or 3Ω ⁹	± 0.05% ± 0.5% 3Ω Typical, 10Ω Maximum
TEST GROUP V Low-Temperature Operation High-Temperature Exposure Contact Resistance Variation – CRV (noise)	± 1.0% ± 2.0% ± 3.0% or 3Ω ⁹	± 0.5% ± 0.5% 3Ω Typical, 10Ω Maximum
TEST GROUP VI Rotational Life Contact Resistance Variation – CRV (noise) Terminal Strength	± 2.0% ± 3.0% or 3Ω ⁹ 2 bs.	± 2.0% 3Ω Typical, 10Ω Maximum 2lbs.
TEST GROUP VII Solderability (excluding termination L) Immersion (excluding termination L)	Mil-Std-202 Method 208 No continuous stream of bubbles	Mil-Std-202 Method 208 No continuous stream of bubbles
TEST GROUP VIII Fungus	Mil-Std-810 Method 508 No Mechanical Damage	Mil-Std-810 Method 508 No Mechanical Damage

VISHAY TRIMMERS ARE INSPECTED

100% For:

- Short-time overload (6.25 x rated power for 5 seconds on; and for 30 seconds off – 3 cycles)
- Immersion
- Resistance tolerance check
- End Resistance
- Visual-Mechanical
- Dynamic tests for Continuity, CRV

By Sample For:

- TCR
- DWV

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 ohms @ ± 5% available on special order
3. Maximum is 1.0% A.Q.L. standard for all specifications except TCR. (For TCR information see notes 4 and 5). "Typical" is a designers reference which represents that 85% of the lots supplied, over a long period of time, will be at least the figure stated or better.
4. Maximum TCR applies to the 3σ (sigma) limit or 99.73% of a production lot. (Measured end-to-end with wiper off the element.)
5. 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 2σ distribution typifying the behavior of the device when used with 40% or more of the total resistance in use.
6. Derated linearly from full power @ +85°C to zero (0) watts @ +150°C. See Figure 3 in this data sheet.
7. Independent of resistance value. 3 ohms maximum available on special request.
8. All ΔR's are measured to the tolerance specified + 0.01 ohms.
9. Whichever is greater.
10. Load-Life test performed at nominal rated power, 0.5 watts, at + 85°C
Special Available Options:
Special Marking
Special lengths for lead wires (L, LB Style)
Hooked leads
Alternate bushing and PC combinations
Burn-in and screening operations

TRIMMERS