



**BOURNS®**

**Features**

- Infinite resolution element
- Standard linearity: 1.0 %
- Extended temperature range: -65 °C to +125 °C
- Extended life version (6538)
- Output smoothness: 0.1 % standard

- Molded-in rear terminals
- Non-standard features and specifications available

**6537/6538 - 22 mm Precision Potentiometer**

**Electrical Characteristics<sup>1</sup>**

**6537**

**6538**

Standard Resistance Range .....	1 K to 100 K ohms	1 K to 100 K ohms
Total Resistance Tolerance .....	±10 %	±10 %
Independent Linearity .....	±1.5 %	±1 %
Effective Electrical Angle .....	340 ° ±3 °	340 ° ±3 °
End Voltage .....	0.5 % maximum	0.5 % maximum
Output Smoothness.....	0.1 %	0.1 %
Dielectric Withstanding Voltage (MIL-STD-202, Method 301)		
Sea Level.....	750 VAC minimum	750 VAC minimum
Power Rating (Voltage Limited By Power Dissipation or 300 VAC, Whichever is Less)		
+70 °C .....	1 watt	1 watt
+125 °C .....	0 watt	0 watt
Insulation Resistance (500 VDC) .....	1,000 megohms minimum	1,000 megohms minimum
Resolution .....	Essentially infinite	Essentially infinite

**Environmental Characteristics<sup>1</sup>**

Operating Temperature Range .....	+1 °C to +125 °C	+1 °C to +125 °C
Storage Temperature Range .....	-65 °C to +125 °C	-65 °C to +125 °C
Temperature Coefficient		
Over Storage Temperature Range.....	±500 ppm/°C maximum	±500 ppm/°C maximum
Vibration.....		
Wiper Bounce .....	0.1 millisecond maximum	0.1 millisecond maximum
Total Resistance Shift .....	±5 % maximum	±5 % maximum
Voltage Ratio Shift .....	±0.5 % maximum	±0.5 % maximum
Shock.....		
Wiper Bounce .....	0.1 millisecond maximum	0.1 millisecond maximum
Total Resistance Shift .....	±5 % maximum	±5 % maximum
Voltage Ratio Shift .....	±0.5 % maximum	±0.5 % maximum
Load Life .....		
Total Resistance Shift .....	±10 % maximum	±10 % maximum
Rotational Life (No Load) .....	10,000,000 shaft revolutions	20,000,000 shaft revolutions
Total Resistance Shift .....	±10 % maximum	±10 % maximum
Moisture Resistance (MIL-STD-202, Method 106)		
Total Resistance Shift .....	±15 % maximum	±10 % maximum
IP Rating .....	IP 40	IP 40

**Mechanical Characteristics<sup>1</sup>**

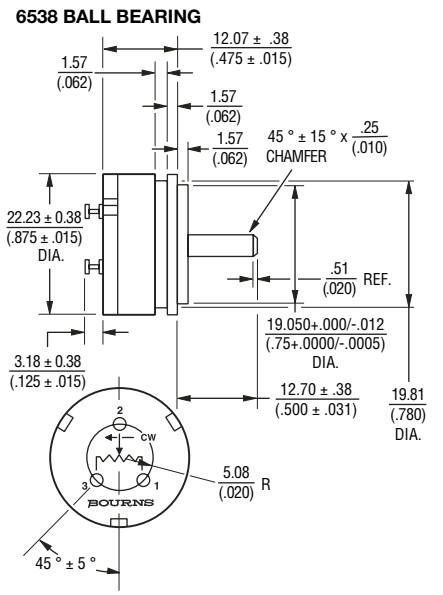
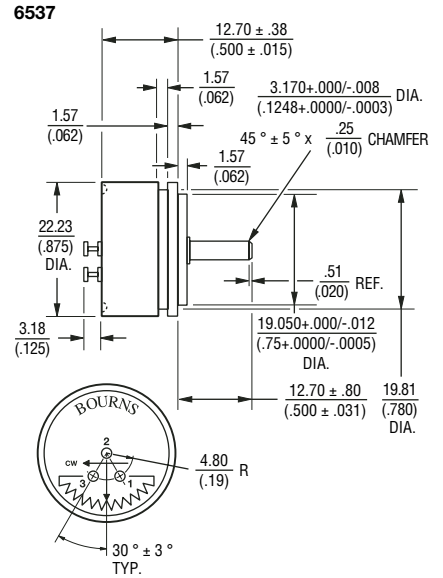
Mechanical Angle .....	Continuous	Continuous
Torque (Starting & Running).....	0.40 N-cm (0.5 oz.-in.) max.	0.18 N-cm (0.25 oz.-in.) max.
Shaft Runout .....	0.025 mm (0.001 in.) T.I.R.	0.025 mm (0.001 in.) T.I.R.
Lateral Runout .....	0.08 mm (0.003 in.) T.I.R.	0.08 mm (0.003 in.) T.I.R.
Shaft End Play .....	0.13 mm (0.005 in.) T.I.R.	0.13 mm (0.005 in.) T.I.R.
Shaft Radial Play .....	0.13 mm (0.005 in.) T.I.R.	0.08 mm (0.003 in.) T.I.R.
Pilot Diameter Runout .....	0.06 mm (0.0025 in.) T.I.R.	0.06 mm (0.0025 in.) T.I.R.
Backlash .....	0.1 ° maximum	0.1 ° maximum
Weight .....	18 gm	18 gm
Terminals.....Molded-in rear turret type		
Soldering Condition.....Recommended hand soldering using Sn95/Ag5 no clean solder, 0.025 " wire diameter. Maximum temperature 399 °C (750 °F) for 3 seconds. No wash process to be used with no clean flux.		
Marking .....		
Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, and date code.		
Ganging (Multiple Section Pots.).....1 cup maximum		
Hardware .....		
No hardware included		

**Recommended Part Numbers**

Part Number	Resistance (Ω)
6537S-1-102	1,000
6537S-1-502	5,000
6537S-1-103	10,000

Part Number	Resistance (Ω)
6538S-1-102	1,000
6538S-1-202	2,000
6538S-1-502	5,000
6538S-1-103	10,000

**Product Dimensions**



TOLERANCES: EXCEPT WHERE NOTED  
 DECIMALS: .XX ± .25 (.020), .XXX ± .13 (.005)  
 FRACTIONS: ±1/64  
 DIMENSIONS: MM (IN.)



**BOLDFACE** LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.

FOR OTHER OPTIONS CONSULT FACTORY.

<sup>1</sup>At room ambient: +25 °C nominal and 50 % relative humidity, except as noted.

REV. 04/03

Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.