



## 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

**BOURNS®**

## 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 %.....	±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>	6537	6538
Operating Temperature Range.....	-40 °C to +125 °C.....	-40 °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.....	15 G.....	15 G
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.....	50 G.....	50 G
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.....	1,000 hours, 1 watt.....	1,000 hours, 1 watt
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 50

Mechanical Characteristics <sup>1</sup>	6537	6538
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		
Manual Soldering.....	96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire 370 °C (700 °F) max. for 3 seconds	
Wave Soldering.....	96.5Sn/3.0Ag/0.5Cu solder with no-clean flux 260 °C (500 °F) max. for 5 seconds	
Wash processes.....	Not recommended	
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	

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

### 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

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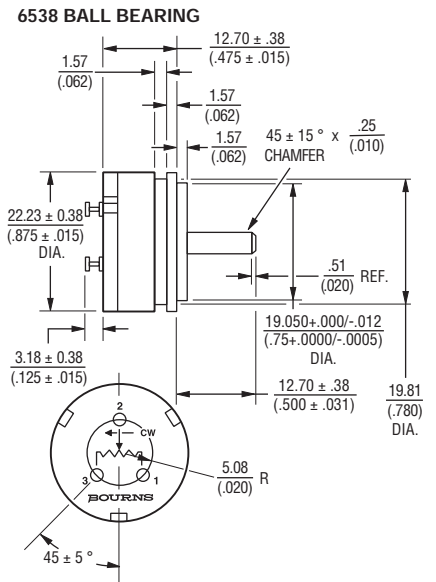
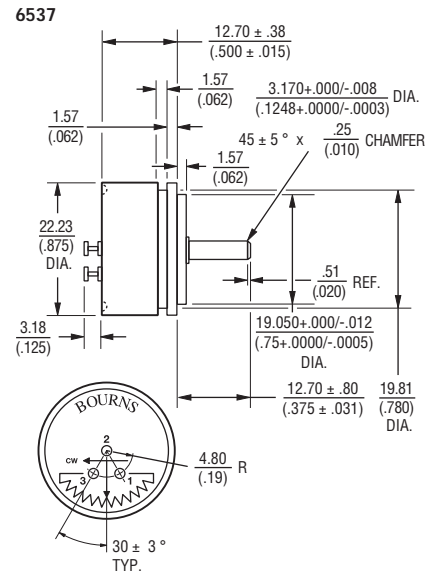


**WARNING**  
Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

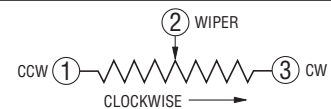
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REV. 10/19

### Product Dimensions



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



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