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[1]

	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[1]

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[1]

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

[1]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**

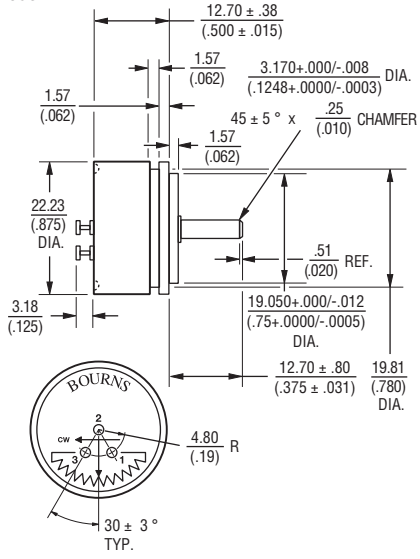
Part Number	Resistance (Ω)
6538S-1-102	**1,000**
6538S-1-202	**2,000**
6538S-1-502	**5,000**
6538S-1-103	**10,000**

BOLDFACE LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.

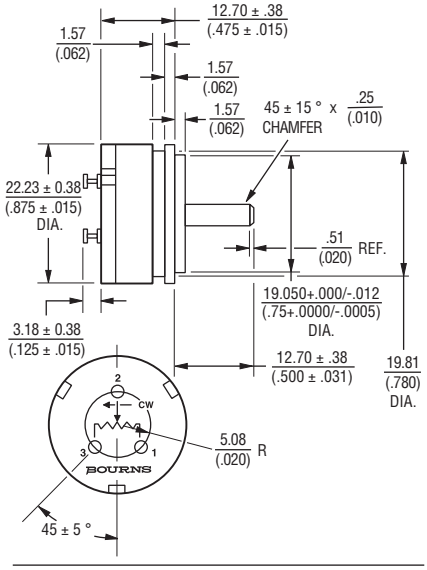
FOR OTHER OPTIONS CONSULT FACTORY.

Product Dimensions

6537



6538 BALL BEARING

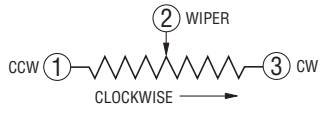


TOLERANCES: EXCEPT WHERE NOTED

DECIMALS: .XX ±.25 (±.020), .XXX ±.13 (±.005)

FRACTIONS: 1/64

DIMENSIONS: MM (IN.)



REV. 01/14

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.