



THE DATASHEET OF
6537S-1-102





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 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 | 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 ¹ | 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 | |

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

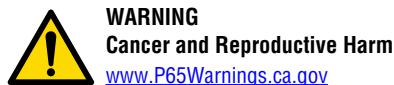
Recommended Part Numbers

| 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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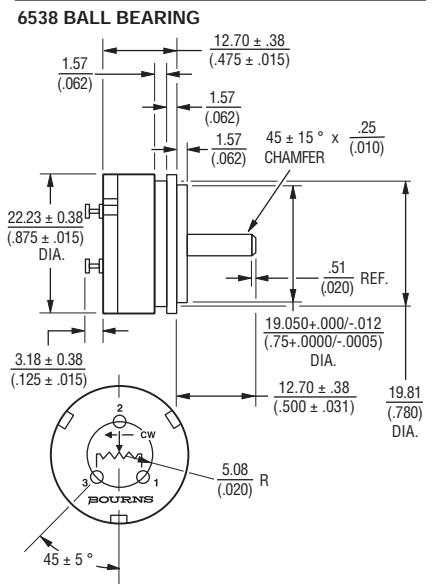
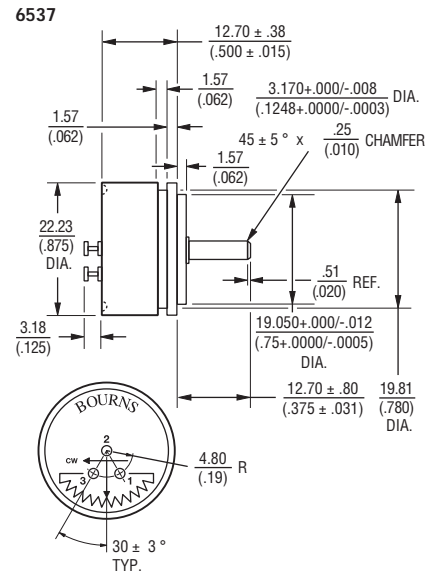
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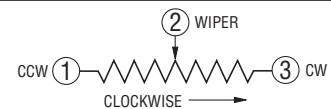
*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
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REV. 10/19

Product Dimensions



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



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