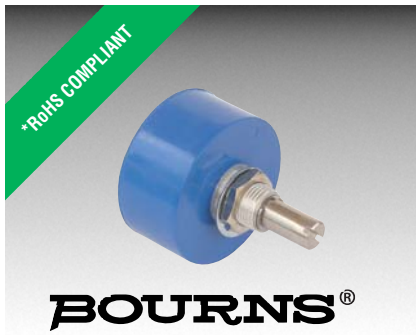




## Features

- Bushing mount
- Shaft supported by front sleeve bearing
- Non-standard features and specifications available

**BOURNS®**

## 6657 - Precision Potentiometer

### Electrical Characteristics<sup>1</sup>

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

### Environmental Characteristics<sup>1</sup>

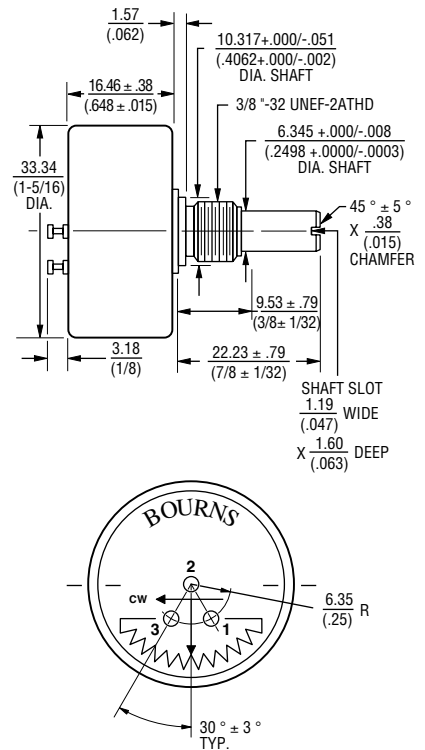
|                                                             |                              |
|-------------------------------------------------------------|------------------------------|
| Operating Temperature Range.....                            | -40 °C to +125 °C            |
| Storage Temperature Range.....                              | -65 °C to +125 °C            |
| Temperature Coefficient Over Storage Temperature Range..... | ±500 ppm/°C maximum          |
| Vibration.....                                              | 15 G                         |
| Wiper Bounce.....                                           | 0.1 millisecond maximum      |
| Total Resistance Shift.....                                 | ±5 % maximum                 |
| Voltage Ratio Shift.....                                    | ±0.5 % maximum               |
| Shock.....                                                  | 50 G                         |
| Wiper Bounce.....                                           | 0.1 millisecond maximum      |
| Total Resistance Shift.....                                 | ±5 % maximum                 |
| Voltage Ratio Shift.....                                    | ±0.5 % maximum               |
| Load Life.....                                              | 1,000 hours, 1.5 watts       |
| Total Resistance Shift.....                                 | ±10 % maximum                |
| Rotational Life (No Load).....                              | 10,000,000 shaft revolutions |
| Total Resistance Shift.....                                 | ±10 % maximum                |
| Moisture Resistance (MIL-STD-202, Method 106)               |                              |
| Total Resistance Shift.....                                 | ±15 % maximum                |
| IP Rating.....                                              | IP 40                        |

### Mechanical Characteristics<sup>1</sup>

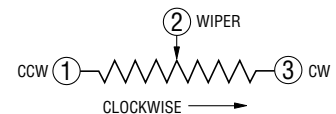
|                                                |                                                                                                                          |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Mechanical Angle.....                          | Continuous                                                                                                               |
| Torque (Starting & Running).....               | 0.40 N-cm (0.5 oz.-in.) maximum                                                                                          |
| Mounting.....                                  | 170-200 N-cm (15-18 lb.-in.) maximum                                                                                     |
| Shaft Runout.....                              | 0.025 mm (0.001 in.) T.I.R.                                                                                              |
| Shaft End Play.....                            | 0.13 mm (0.005 in.) T.I.R.                                                                                               |
| Shaft Radial Play.....                         | 0.13 mm (0.005 in.) T.I.R.                                                                                               |
| Backlash.....                                  | 0.1° maximum                                                                                                             |
| Weight.....                                    | 32 gm                                                                                                                    |
| Terminals.....                                 | Rear turret type                                                                                                         |
| Soldering Condition                            |                                                                                                                          |
| Manual Soldering.....                          | 96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire<br>370 °C (700 °F) max. for 3 seconds                         |
| Wave Soldering.....                            | 96.5Sn/3.0Ag/0.5Cu solder with no-clean flux<br>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 Potentiometers)..... | 1 cup maximum                                                                                                            |
| Hardware.....                                  | One lockwasher (H-37-2) and one mounting nut (H-38-2) is shipped with each potentiometer.                                |

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

### Product Dimensions



TOLERANCES: EXCEPT WHERE NOTED  
 DECIMALS: .XX ± .51 (.02), .XXX ± .13 (.005)  
 FRACTIONS: ±1/64  
 DIMENSIONS: MM (IN.)



### Recommended Part Numbers

| Part Number* | Resistance (Ω) |
|--------------|----------------|
| 6657S-1-102  | 1,000          |
| 6657S-1-202  | 2,000          |
| 6657S-1-502  | 5,000          |
| 6657S-1-103  | 10,000         |

**BOLD**FACE LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.

FOR OTHER OPTIONS CONSULT FACTORY.

ROHS IDENTIFIER:

L = COMPLIANT

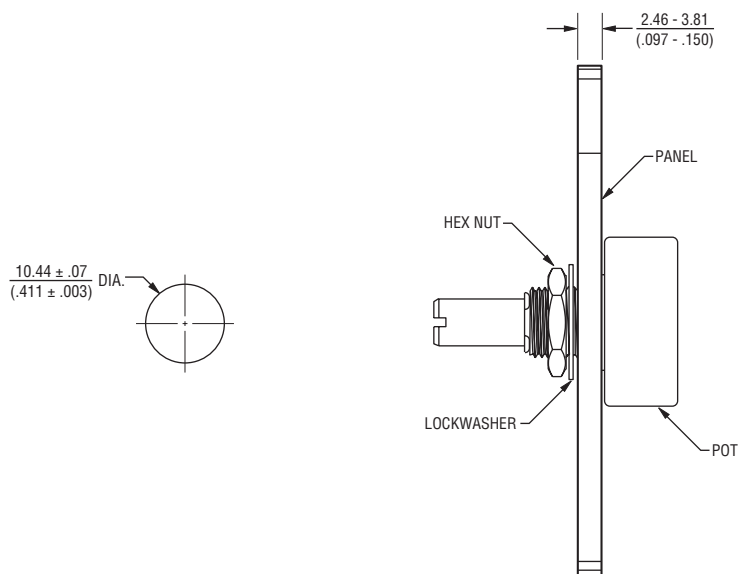
BLANK = NON-COMPLIANT

\*RoHS Directive 2002/95/EC Jan 27, 2003 including Annex.  
 Specifications are subject to change without notice.  
 Customers should verify actual device performance in their specific applications

## 6657 - Precision Potentiometer

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### Panel Thickness Dimensions



Panel thickness and hole diameters are recommended for best fit. However, customers may adjust the dimensions to suit their specific application.

DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

TOLERANCES:  $\pm \frac{0.127}{(.005)}$