

Features

- 7/8 ˝ (22 mm) diameter single-turn conductive plastic
- Bushing mount
- Excellent resolution
- High rotational life – ball bearing shaft support
- Non-standard features and specifications available

BOURNS®

6638 - Precision Potentiometer

Electrical Characteristics[1]

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 % maximum
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 watt
+125 °C	0 watt
Insulation Resistance (500 VDC)	1,000 megohms minimum
Resolution	Essentially infinite

Environmental Characteristics[1]

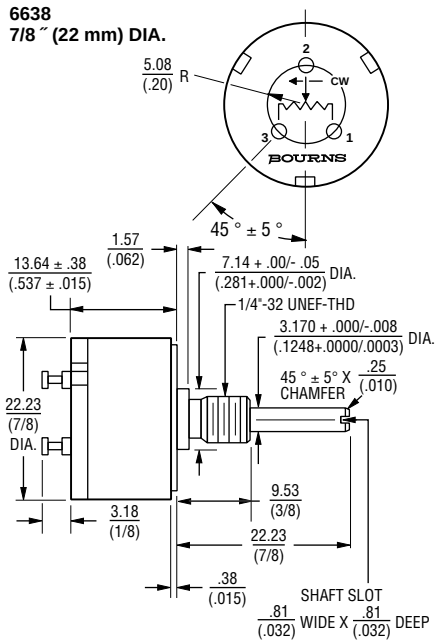
Operating Temperature Range	+1 °C to +125 °C
Storage Temperature Range	-65 °C to +125 °C
Temperature Coefficient Over Storage Temperature Range	±500 ppm/°C maximum
Vibration	15 G
Wiper Bounce	0.1 millisecond maximum
Total Resistance Shift	±5 % maximum
Voltage Ratio Shift	±0.5 % maximum
Shock	50 G
Wiper Bounce	0.1 millisecond maximum
Total Resistance Shift	±5 % maximum
Voltage Ratio Shift	±0.5 % maximum
Load Life	1,000 hours, 1 watt
Total Resistance Shift	±10 % maximum
Rotational Life (No Load)	20,000,000 shaft revolutions
Total Resistance Shift	±10 % maximum
Moisture Resistance (MIL-STD-202, Method 106)	
Total Resistance Shift	±10 % maximum
IP Rating	IP 40

Mechanical Characteristics[1]

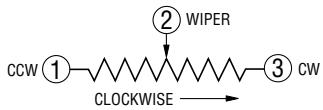
Mechanical Angle	Continuous
Torque (Starting & Running)	0.18 N-cm (0.25 oz.-in.) maximum
Mounting	170-200 N-cm (15-18 lb.-in.) maximum
Shaft Runout	0.025 mm (0.001 in.) T.I.R.
Shaft End Play	0.13 mm (0.005 in.) T.I.R.
Shaft Radial Play	0.08 mm (0.003 in.) T.I.R.
Backlash	0.1 º maximum
Weight	18 gm
Terminals	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 Potentiometers)	1 cup maximum
Hardware	One lockwasher (H-37-1) and one mounting unit (H-38-1) is shipped with each potentiometer.

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

Product Dimensions



TOLERANCES: EXCEPT WHERE NOTED
DECIMALS: .XX ± .51 (.02), .XXX ± .127 (.005)
FRACTIONS: ±1/64
DIMENSIONS: MM (IN.)



Recommended Part Numbers

Part Numbers	Resistance (Ω)
6638S-1-102	**1,000**
6638S-1-502	**5,000**
6638S-1-103	**10,000**

BOLDFACE LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.

FOR OTHER OPTIONS CONSULT FACTORY.

WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

REV. 10/19

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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