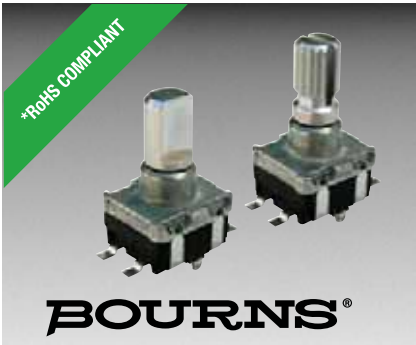




**THE DATASHEET OF  
PRS11S-N20F-503B1**





## Features

- Carbon element
- Standard surface mount profile compatibility
- Assorted resistances and tapers
- Flatted and knurled shaft styles
- Wide operating temperature range
- RoHS compliant\*



This series is currently available but not recommended for new designs.

## PRS11S - 11 mm SMD Potentiometer

### Electrical Characteristics

Standard Resistance Range.....	1K ohms to 1 megohm
Standard Resistance Tolerance.....	
R < 250K ohms.....	±20 %
R ≥ 250K ohms.....	±30 %
End Resistance.....	
R < 50K ohms.....	30 ohms max.
R ≥ 50K ohms.....	0.1 % of TR max.
Insulation Resistance @ 250 VDC.....	100 megohms min.
Dielectric Withstanding Voltage.....	300 VAC
Standard Taper.....	Linear, audio
Power Rating.....	
Linear.....	0.05 watts
Audio.....	0.025 watts
Slider Noise.....	100 mV max.
Max. Operating Voltage.....	50 VAC / 30 VDC

### Environmental Characteristics

Rotational Life.....	15,000 cycles
TR Shift.....	±15 %
Operating Temperature Range.....	-10 °C to +70 °C
Storage Temperature.....	-40 °C to +85 °C
IP Rating.....	IP 40

### Mechanical Characteristics

Mechanical Angle.....	300 ° +10 °, -5 °
Running Torque.....	20 to 150 gf-cm
Stop Strength.....	5.1 kgf-cm min.
Shaft Push/Pull Strength.....	10.2 kgf max.
Weight.....	5 gm (0.17 oz.) max.
Terminals.....	Printed circuit board surface mount
Soldering Condition.....	
Reflow Soldering.....	Sn 95.5 / Ag 2.8 / Cu 0.7 solder with no clean flux (see solder profiles for recommended time and temperature)
Manual Soldering.....	Not recommended
Hardware.....	No hardware supplied with this potentiometer
Packaging.....	40 pcs./tube

### How To Order

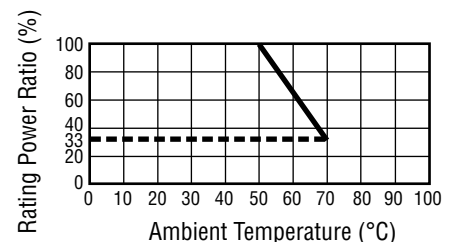
**PRS11S - N 20 K - 103 B1**

Model Number.....	PRS11S
Designator.....	N = 11 mm SMD Potentiometer
Switch Option.....	N = No switch
Shaft Length (FMS).....	20 = 20 mm
Shaft Style.....	F = Flatted Metal K = Knurled Metal (18 tooth)
Resistance Code.....	(See Standard Resistance Table)
Resistance Taper (See Taper Charts).....	Taper Series followed by Curve Number

### Standard Resistance Table

Resistance (Ohms)	Resistance Code
1,000	102
5,000	502
10,000	103
25,000	253
50,000	503
100,000	104
250,000	254
300,000	304
500,000	504
1,000,000	105

### Derating Curve



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

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

Specifications are subject to change without notice.

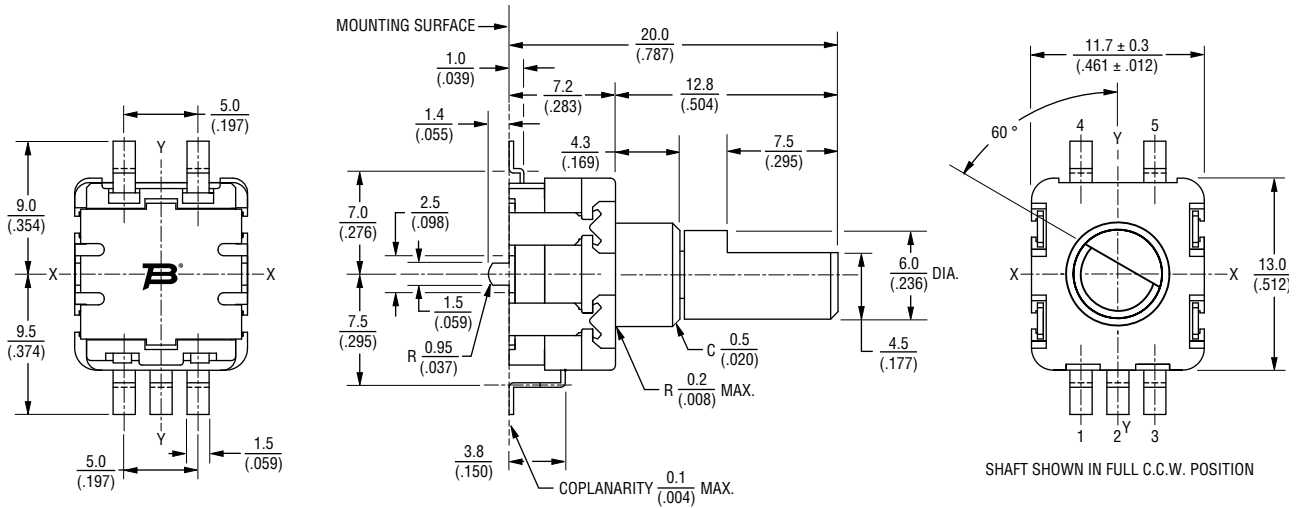
Users should verify actual device performance in their specific applications.

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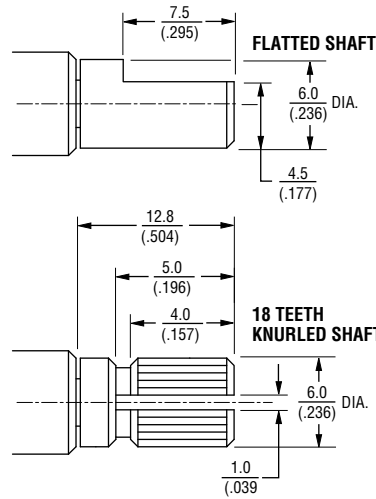
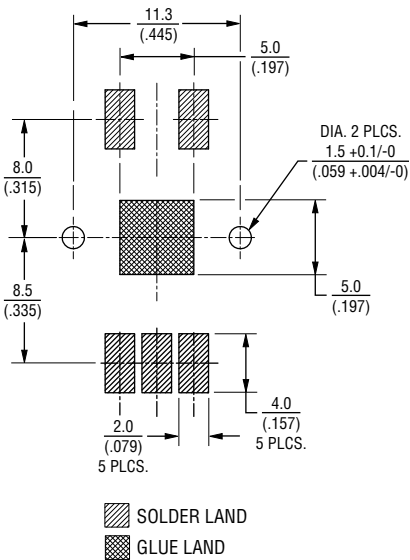
# PRS11S - 11 mm SMD Potentiometer

**BOURNS®**

## Product Dimensions



## Recommended Land Pattern

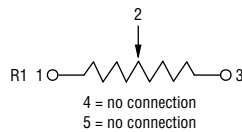


### NOTES:

1. Layout tolerances:  $\pm 0.1$  mm / (.004 in.).
2. Recommended PCB thickness: 1.6 mm / (.063 in.).

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

## Schematic



## Tolerances

DIMENSION	TOLERANCE
$< 10.0$ ( $< .394$ )	$\pm 0.3$ ( $\pm .012$ )
$10.0 \sim 100$ ( $.394 \sim 3.937$ )	$\pm 0.5$ ( $\pm .020$ )

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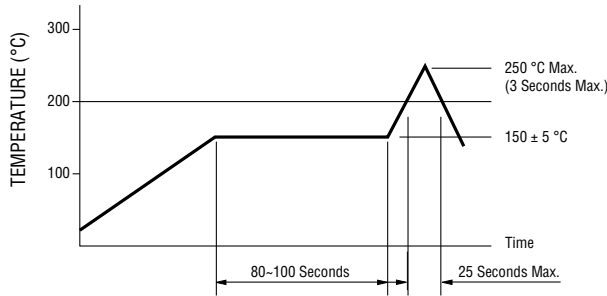
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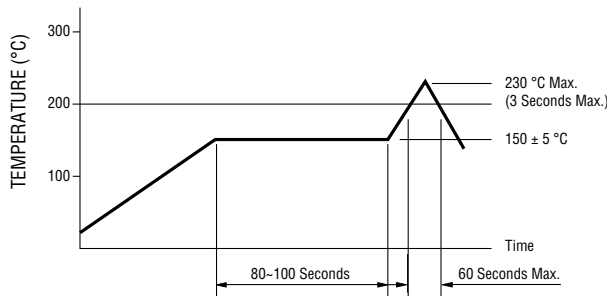
# PRS11S - 11 mm SMD Potentiometer



## Solder Profiles



Processing Method: Reflow soldering with **infrared heat** (only once).



Processing Method: Reflow soldering with **hot air** (only once).

### Notes:

1. No clean solder paste is recommended.
2. Aqueous wash is not recommended.
3. Use of water soluble soldering flux shall be avoided due to possible corrosion.
4. Multiple passes through the soldering process is not recommended.



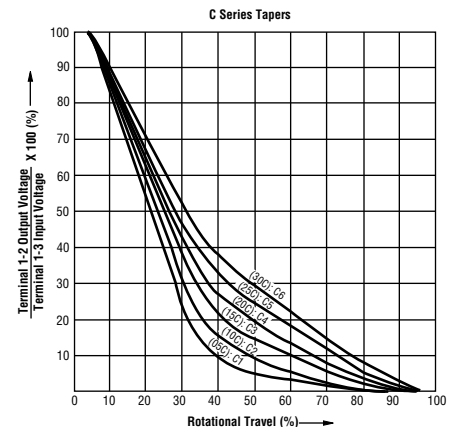
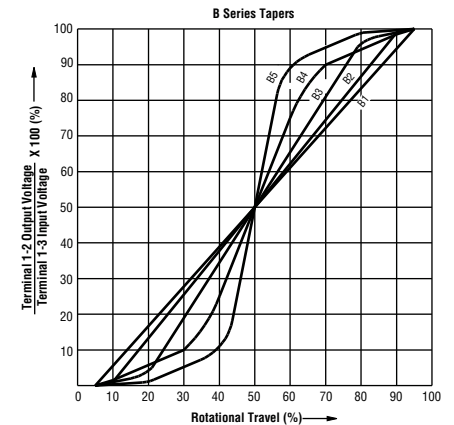
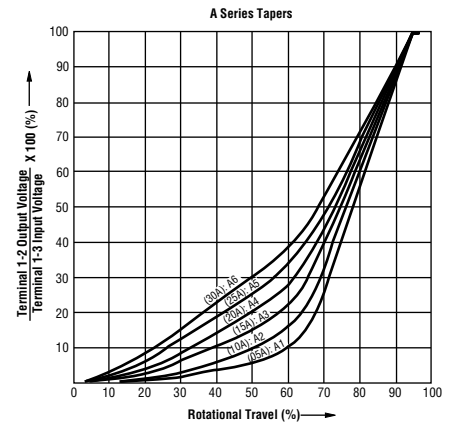
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## Taper Charts



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