



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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\*RoHS COMPLIANT



**BOURNS®**

**Features**

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



**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**

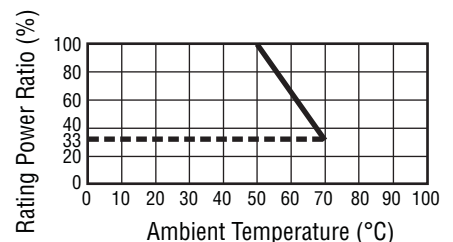
**PRS11S - N 20 K - 103 B1**

Model Number.....	PRS11S
Designator.....	N 20 K - 103 B1
PRS11S = 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.....	103 (See Standard Resistance Table)
Resistance Taper (See Taper Charts).....	B1 (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**



\*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.

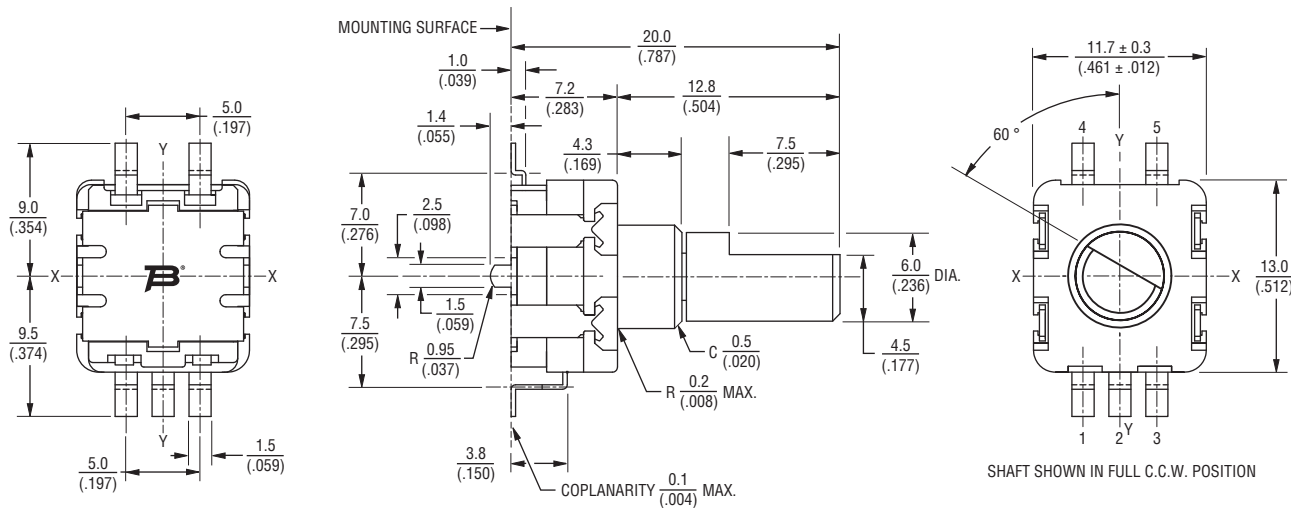
## Applications

- Multimedia sound systems
- Audio and DJ equipment
- Portable electronics
- Portable appliances
- Automotive sound systems
- Environmental controls

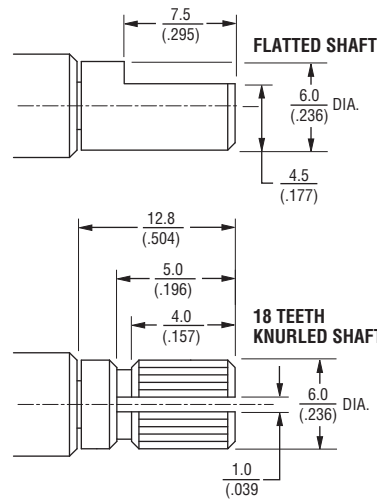
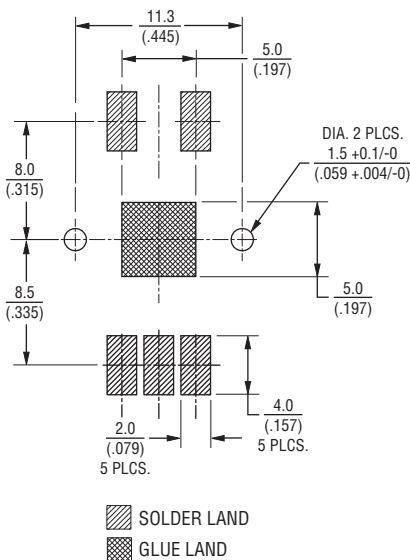
# PRS11S - 11 mm SMD Potentiometer

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## Product Dimensions



## Recommended Land Pattern

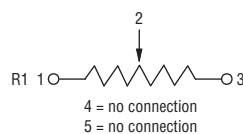


## NOTES:

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

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

## Schematic



## Tolerances

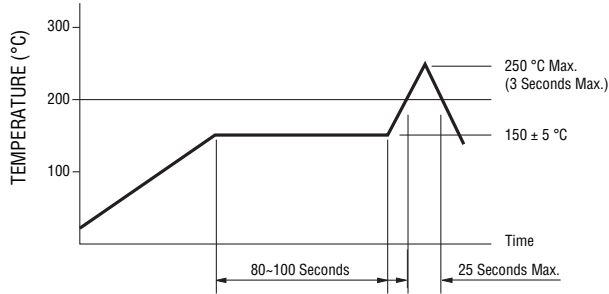
DIMENSION	TOLERANCE
<10.0 (<.394)	±0.3 (±.012)
10.0 ~ 100 (.394 ~ 3.937)	±0.5 (±.020)

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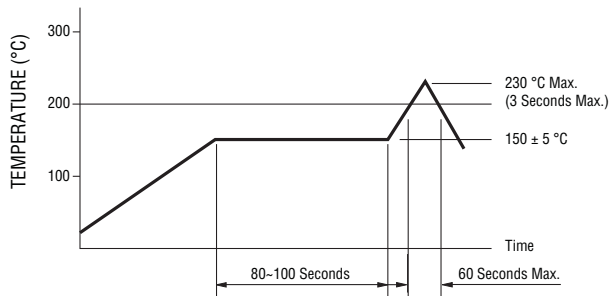
# PRS11S - 11 mm SMD Potentiometer

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## Solder Profiles



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

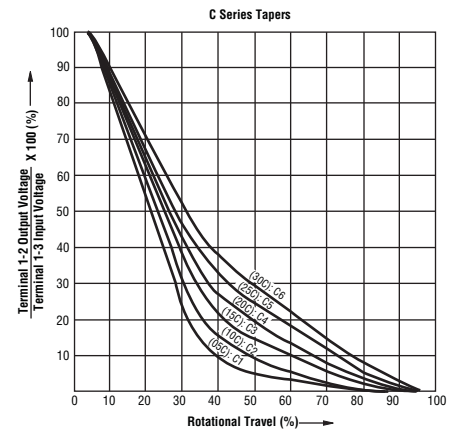
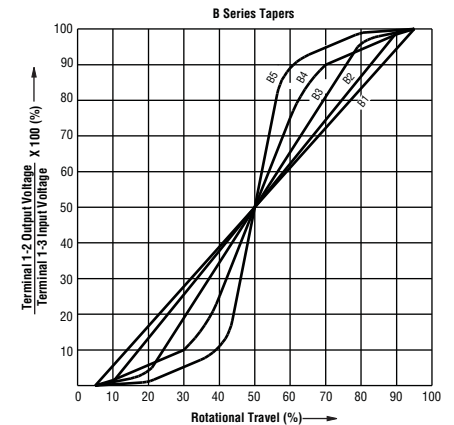
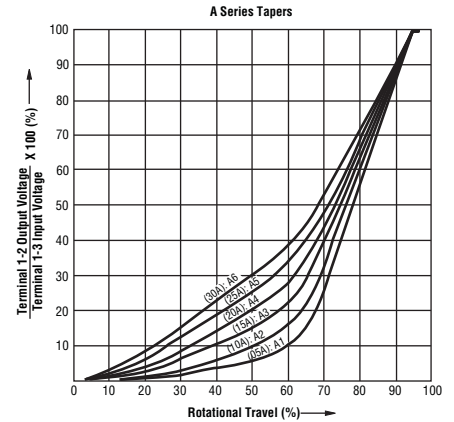


Processing Method: Reflow soldering with **hot air** (only once).

## 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.

## Taper Charts



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