

## Features

- Carbon element
- Ganging up to 8 sections available
- Knurled and flatted shaft styles
- Audio taper option
- Tracking error within 3 dB
- RoHS compliant\*



## PTR90 Series - 9 mm Multi-Ganged Potentiometer w/Rotary Switch

### Electrical Characteristics

Standard Resistance Range ..... 1 K ohms to 1 M ohms  
 Total Resistance Tolerance .....  $\pm 10\%$  or  $\pm 20\%$   
 Standard Tapers ..... Linear & audio  
 Maximum Operating Voltage ..... 150 VAC, 20 VDC  
 Rated Power  
 Linear Taper ..... 0.05 watts  
 Audio Taper ..... 0.025 watts  
 Noise ..... 100 mV max.  
 Insulation Resistance @ 250 VDC ..... 100 M ohms  
 Dielectric Withstanding Voltage ..... 300 VAC  
 End Resistance ..... 20 ohms max.  
 Tracking Error (-40 dB to 0 dB) .....  $\pm 3$  dB

### Environmental Characteristics

Operating Temperature ..... -10 °C to +50 °C  
 Rotational Life ..... 15,000 cycles  
 IP Rating ..... IP 40

### Switch Characteristics

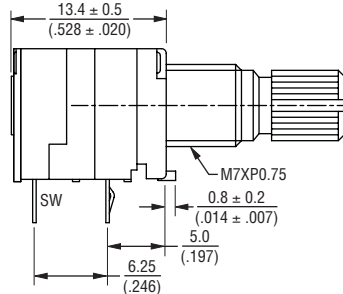
Contact Resistance ..... 50 milliohms max.  
 Rated Power ..... 3 A @ 16 VDC  
 Detent Torque ..... 400 g-cm max.  
 Switch Activation Angle ..... 50 ° max.

### Mechanical Characteristics

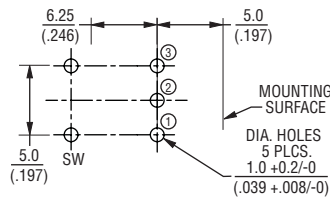
Mechanical Angle .....  $300^\circ \pm 10^\circ$   
 Running Torque ..... 10 to 250 g-cm  
 Stop Strength ..... 4.0 kg-cm  
 Shaft Push/Pull Strength ..... 5.0 kgf min.  
 Shaft Wobble ..... 0.6 x L/20 mm p-p max.  
 Mounting Torque ..... 7.0 kg-cm min.  
 Soldering Condition  
 Manual Soldering  
 ..... 96.5 Sn/3.0 Ag/0.5 Cu solid wire  
 or no-clean rosin cored wire  
 270 °C max. for 3 seconds  
 Wave Soldering  
 ..... 96.5 Sn/3.0 Ag/0.5 Cu solder  
 with no-clean flux  
 260 °C max. for 5 seconds  
 Wash Process ..... Not recommended  
 Mounting Hardware ..... One flat washer  
 and one mounting nut supplied  
 per potentiometer

### Product Dimensions

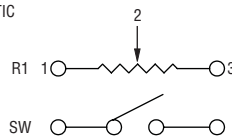
PTR901



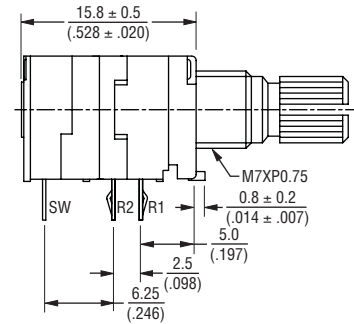
RECOMMENDED PCB LAYOUT



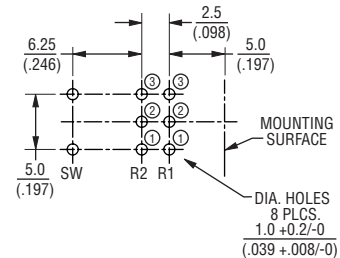
SCHEMATIC



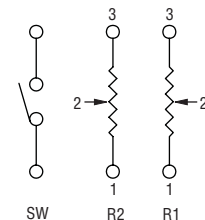
PTR902



RECOMMENDED PCB LAYOUT



SCHEMATIC



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

\*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.

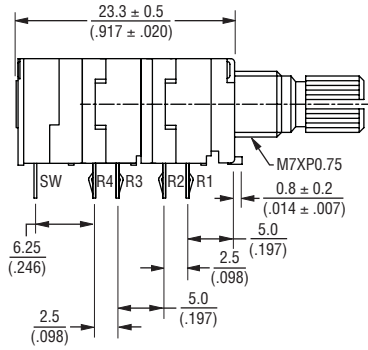
# Applications

- Audio/TV sets
- Automotive sound systems
- Amplifiers/mixers/drum machines/synthesizers/DJ equipment
- Multimedia sound systems
- Portable electronics

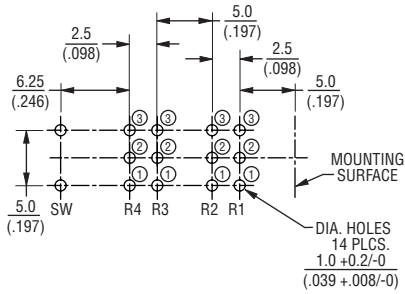
## PTR90 Series - 9 mm Multi-Ganged Potentiometer w/Rotary Switch BOURNS®

### Product Dimensions

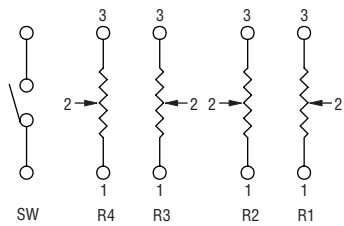
**PTR904**



RECOMMENDED PCB LAYOUT

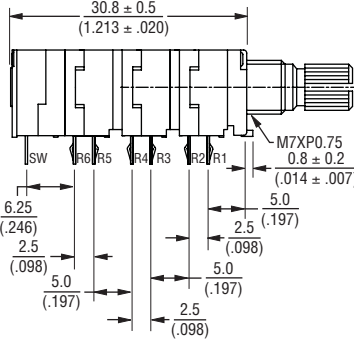


SCHEMATIC

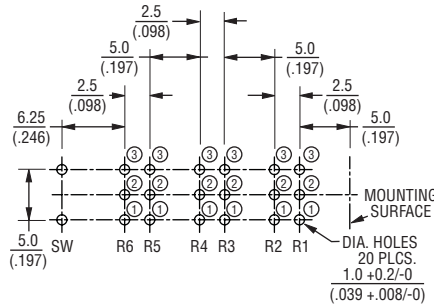


DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

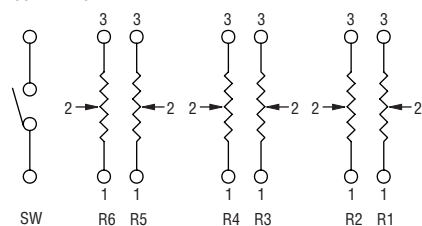
**PTR906**



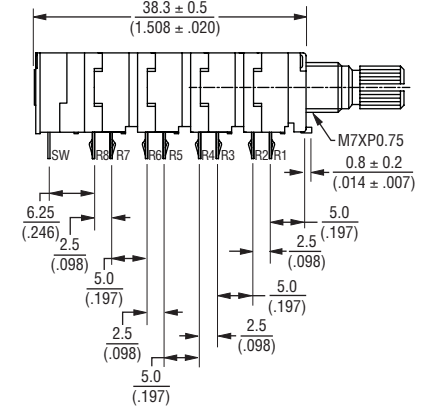
RECOMMENDED PCB LAYOUT



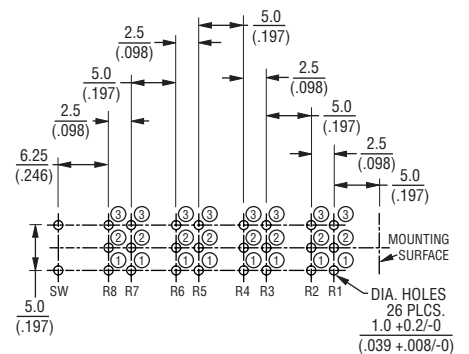
SCHEMATIC



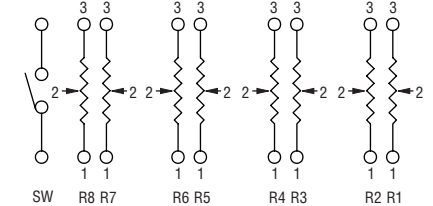
**PTR908**



RECOMMENDED PCB LAYOUT



SCHEMATIC



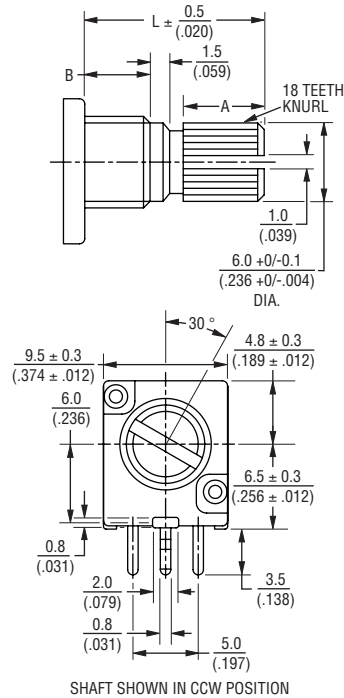
Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

# PTR90 Series - 9 mm Multi-Ganged Potentiometer w/Rotary Switch

# BOURNS®

## Product Dimensions

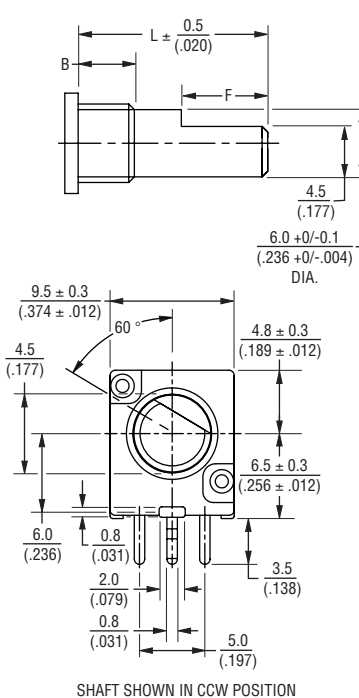
### SHAFT STYLE "K"



L	$\frac{15}{(.591)}$	$\frac{20}{(.787)}$	$\frac{25}{(.984)}$
B	$\frac{5}{(.197)}$	$\frac{7}{(.276)}$	$\frac{10}{(.394)}$
A	$\frac{6}{(.236)}$	$\frac{10}{(.394)}$	$\frac{12}{(.472)}$

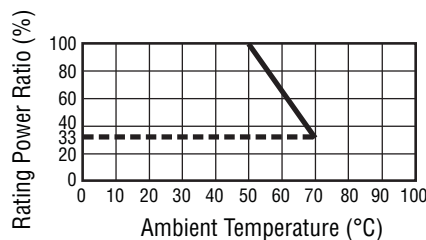
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

### SHAFT STYLE "F"



L	$\frac{15}{(.591)}$	$\frac{20}{(.787)}$	$\frac{25}{(.984)}$
B	$\frac{5}{(.197)}$	$\frac{7}{(.276)}$	$\frac{10}{(.394)}$
F	$\frac{7}{(.276)}$	$\frac{12}{(.472)}$	$\frac{12}{(.472)}$

## Derating Curve



## How To Order

**PTR90 1 - 2 0 20 K - B 203**

Model

- PTR90 = With Rotary Switch

No. of Sections

- 1 = 1 Section
- 2 = 2 Sections
- 3 = 3 Sections
- 4 = 4 Sections
- 5 = 5 Sections
- 6 = 6 Sections
- 8 = 8 Sections

Pin Style

- 1 = PC Pins vertical/down facing and ±10 % Total Resistance Tolerance
- 2 = PC Pins vertical/down facing and ±20 % Total Resistance Tolerance

Center Detent Option

- 0 = No Detent
- 2 = Center Detent

Standard Shaft Length

- 15 = 15 mm
- 20 = 20 mm
- 25 = 25 mm

Shaft Styles

- K = Knurled Type Shaft (Metal) 18 Toothed Serration Type
- F = Flatted Metal Shaft

Resistance Taper

- A = Audio Taper
- B = Linear Taper

Resistance Code (See Table)

Other taper and shaft styles available.

## Standard Resistance Table

Resistance (Ohms)	Resistance Code
1,000	102
2,000	202
5,000	502
10,000	103
20,000	203
50,000	503
100,000	104
200,000	204
500,000	504
1,000,000	105

REV. 05/10

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