



## Features

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



## PTD90 Series - 9 mm Multi-Ganged Potentiometer

### 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

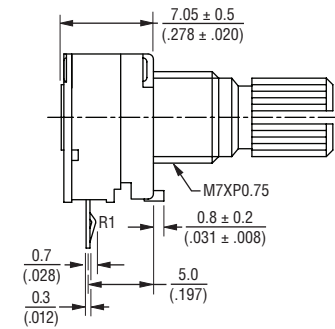
Operating Temperature .....  $-10^\circ\text{C}$  to  $+50^\circ\text{C}$   
 Rotational Life ..... 15,000 cycles  
 IP Rating ..... IP 40  
 Moisture Sensitivity Level ..... 1  
 ESD Classification (HBM) ..... N/A

### Mechanical Characteristics

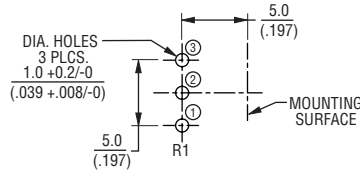
Mechanical Angle .....  $300^\circ \pm 10^\circ$   
 Running Torque ..... 10 to 250 g-cm  
 Stop Strength ..... 4.0 kg-cm  
 Shaft Push/Pull Strength ..... 5.0 kgf min.  
 Shaft Wobble .....  $0.6 \times L/20$  mm p-p max.  
 Mounting Torque ..... 7.0 kg-cm min.  
 Soldering Condition  
 Manual Soldering  
 ..... 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

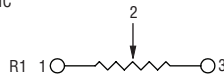
#### PTD901



#### RECOMMENDED PCB LAYOUT

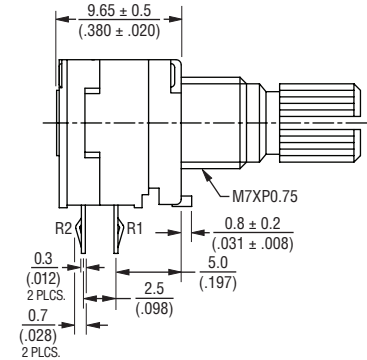


#### SCHEMATIC

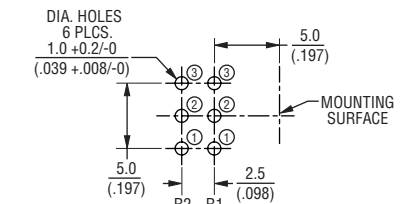


DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

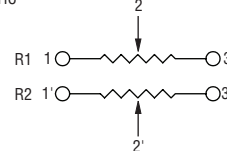
#### PTD902



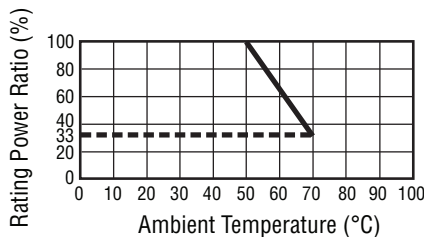
#### RECOMMENDED PCB LAYOUT



#### SCHEMATIC



### Derating Curve



### 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



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

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

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Users should verify actual device performance in their specific applications.

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## Applications

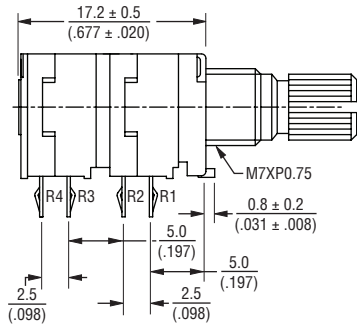
- Audio/TV sets
- Amplifiers/mixers/drum machines/synthesizers/DJ equipment
- Multimedia sound systems
- Portable electronics

# PTD90 Series - 9 mm Multi-Ganged Potentiometer

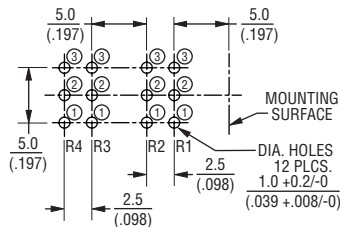
**BOURNS®**

### Product Dimensions

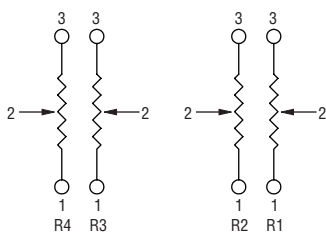
#### PTD904



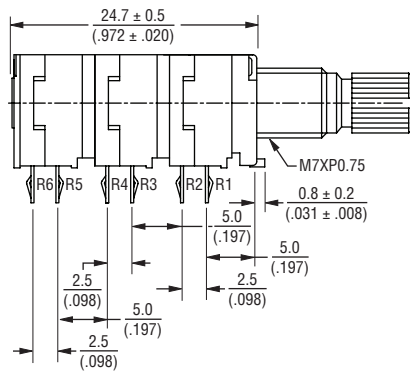
#### RECOMMENDED PCB LAYOUT



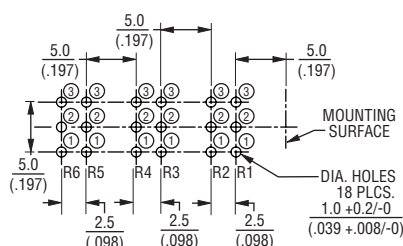
#### SCHEMATIC



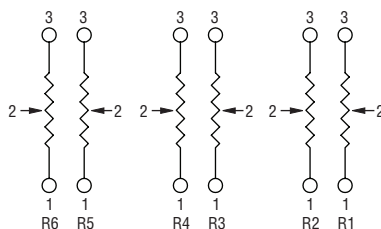
#### PTD906



#### RECOMMENDED PCB LAYOUT

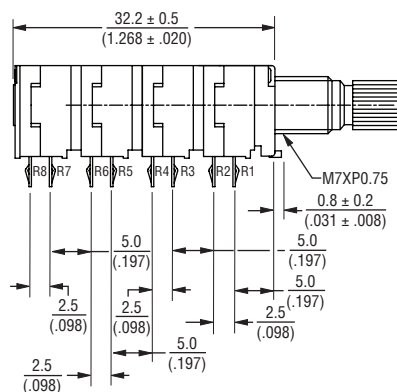


#### SCHEMATIC

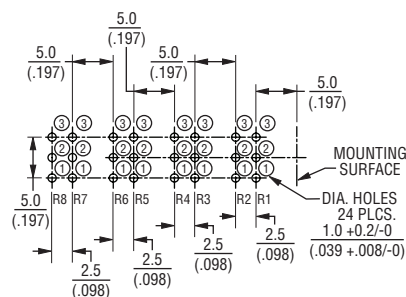


DIMENSIONS:  $\frac{\text{MM}}{\text{INCHES}}$

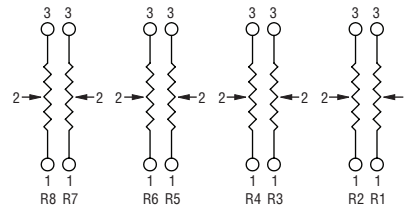
#### PTD908



#### RECOMMENDED PCB LAYOUT



#### SCHEMATIC



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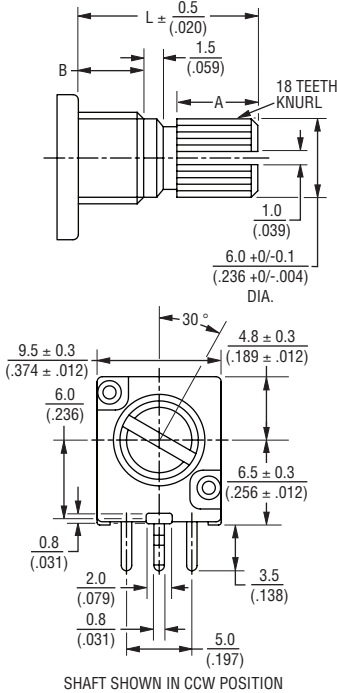
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# PTD90 Series - 9 mm Multi-Ganged Potentiometer

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## Product Dimensions

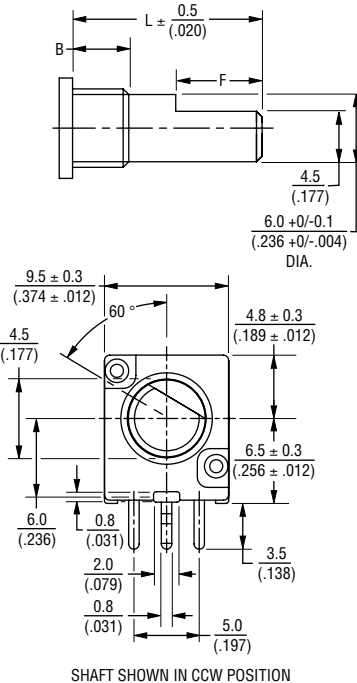
### SHAFT STYLE "K"



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

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

### SHAFT STYLE "F"



L	15 (.591)	20 (.787)	25 (.984)	30 (1.181)
B	5 (.197)	7 (.276)	10 (.394)	10 (.394)
F	7 (.276)	12 (.472)	12 (.472)	12 (.472)

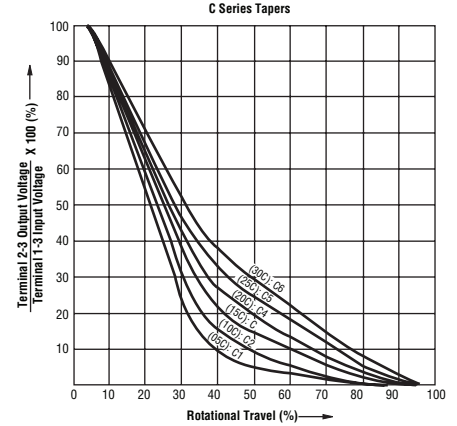
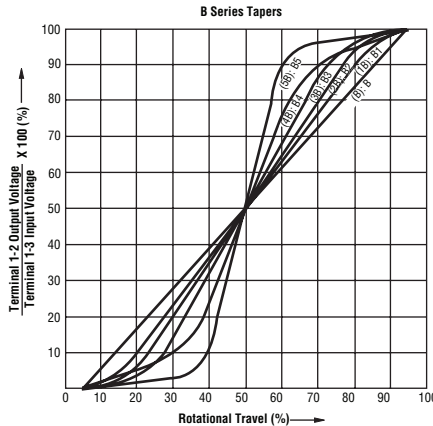
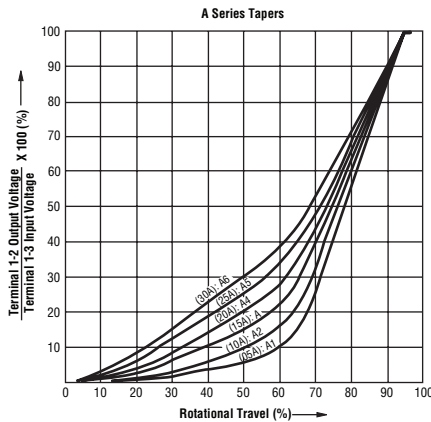
SHAFT SHOWN IN CCW POSITION

## How To Order

**PTD90 1 - 2 0 20 K - B 203**

- Model \_\_\_\_\_
- PTD90 = No 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  $\pm 10\%$  Total Resistance Tolerance
  - 2 = PC Pins vertical/down facing and  $\pm 20\%$  Total Resistance Tolerance
- Center Detent Option \_\_\_\_\_
- 0 = No Detent
  - 2 = Center Detent
- Standard Shaft Length \_\_\_\_\_
- 15 = 15 mm
  - 20 = 20 mm
  - 25 = 25 mm
  - 30 = 30 mm
- Shaft Styles \_\_\_\_\_
- K = Knurled Type Shaft (Metal) 18 Toothed Serration Type
  - F = Flatted Metal Shaft
- Resistance Taper (See Taper Charts) \_\_\_\_\_
- Taper Series followed by Curve Number
- Resistance Code (See Table) \_\_\_\_\_
- Other shaft styles available.

## Tapers



REV. 12/19

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