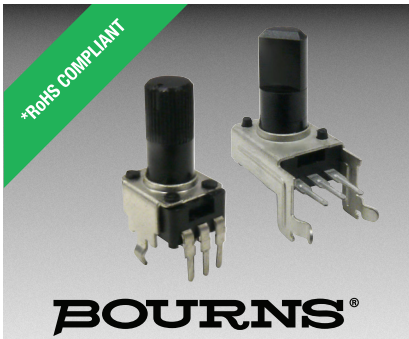




**THE DATASHEET OF  
PTV09A-4020F-A103**





## Features

- Carbon element
- Insulated shaft
- Wide variety of mounting styles
- Center detent option
- RoHS compliant\*

## Additional Information

Click these links for more information:



# PTV09 Series - 9 mm Potentiometer

### Electrical Characteristics

Taper.....Linear, audio  
 Standard Resistance Range  
 ..... 1 K ohms to 1 M ohms  
 Standard Resistance Tolerance..... $\pm 20\%$   
 Residual Resistance  
 .....500 ohms or  $\pm 1\%$  max.

### Environmental Characteristics

Operating Temperature..... $-10\text{ }^{\circ}\text{C}$  to  $+50\text{ }^{\circ}\text{C}$   
 Power Rating  
 (Linear and Audio).....0.05 watt  
 Maximum Operating Voltage  
 (Linear and Audio)..... 20 VDC, 50 VAC  
 Sliding Noise ..... 100 mV max.

### Mechanical Characteristics

Mechanical Angle ..... $280\text{ }^{\circ} \pm 10\text{ }^{\circ}$   
 Rotational Torque ..... 10 to 100 g-cm  
 Detent Torque .....20 to 200 gf-cm  
 Stop Strength ..... 2 kg-cm min.  
 Rotational Life ..... 10,000 cycles  
 Soldering Condition  
 ..... $300\text{ }^{\circ}\text{C}$  max. within 3 seconds  
 Hardware ..... One flat washer and one  
 hex nut supplied with bushing version

### How To Order

**PTV09A - 2 0 20 F - B 203**

Model \_\_\_\_\_

Terminal Configuration \_\_\_\_\_  
 (Pin Layout)

1 = Horizontal/Rear Mount w/Sleeve Bushing  
 2 = Vertical/Side Mount, Bushingless, 10 mm Height  
 3 = Vertical/Side Mount, Bushingless, 6.5 mm Height  
 4 = Horizontal/Rear Mount, Bushingless  
 5 = Horizontal/Rear Mount w/Plastic Plain Bushing  
 6 = Horizontal/Rear Mount w/Metal Threaded Bushing  
 7 = Vertical/Side Mount w/Sleeve Bushing, 6.5 mm Height  
 8 = Vertical/Side Mount w/Sleeve Bushing, 10 mm height

Option \_\_\_\_\_  
 0 = No Detent 2 = Center

Standard Shaft Length \_\_\_\_\_  
 15 = 15 mm\*\* 25 = 25 mm  
 20 = 20 mm 30 = 30 mm

Shaft Style \_\_\_\_\_  
 F = Flat Type Insulated Shaft  
 S = Insulated Knurled (18 Teeth)  
 U = Insulated Knurled (40 Teeth)

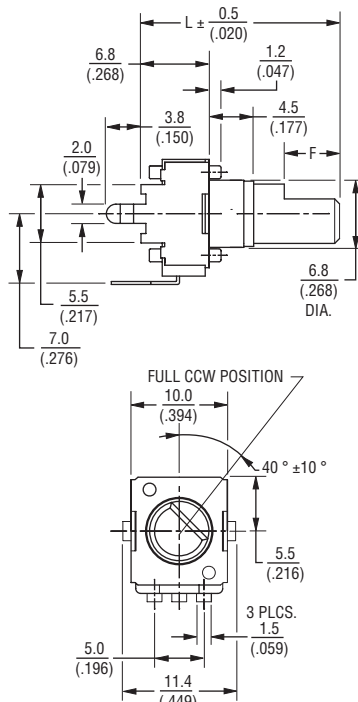
Resistance Taper \_\_\_\_\_  
 Taper Series followed by Curve Number

Resistance Code (See Table) \_\_\_\_\_

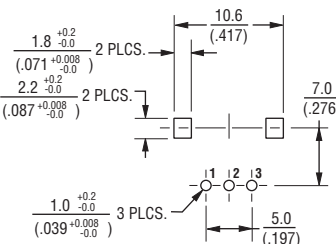
Other styles available.  
 \*\* Bushingless version only.

### Product Dimensions

**PTV09A-1**  
 (Horizontal/Rear Mount w/Sleeve Bushing)

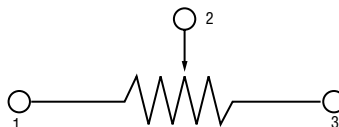


RECOMMENDED PCB LAYOUT  
 (HORIZONTAL/REAR MOUNT)

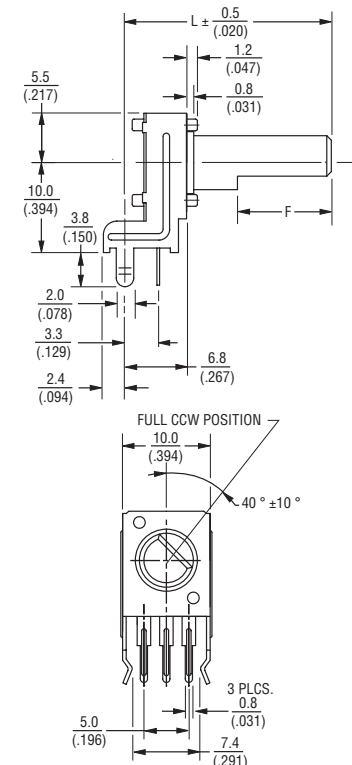


DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

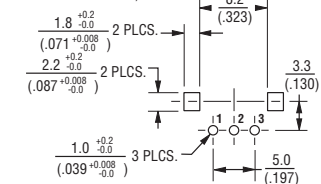
### Schematic



**PTV09A-2**  
 (Vertical/Side Mount,  
 Bushingless, 10 mm Height)



RECOMMENDED PCB LAYOUT  
 (VERTICAL/SIDE MOUNT)



### 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             |

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

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

## Applications

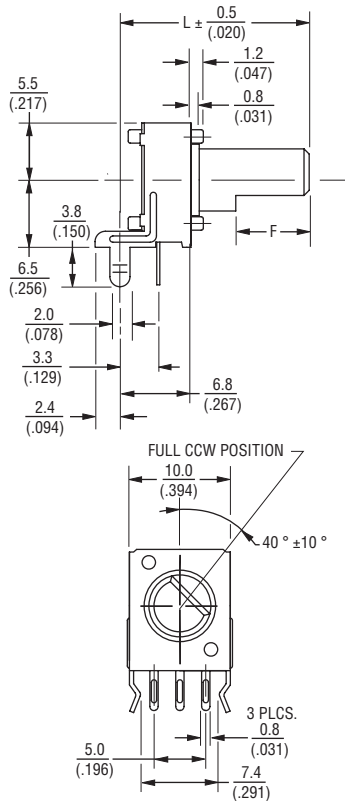
- Commercial communications equipment
- Portable electronics
- Amplifiers/mixers/drum machines/synthesizers
- Consumer goods
- Commercial appliances

# PTV09 Series - 9 mm Potentiometer

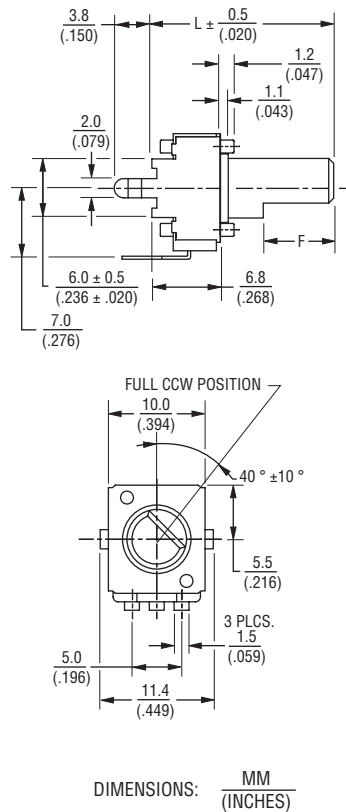
# BOURNS®

## Product Dimensions (Continued)

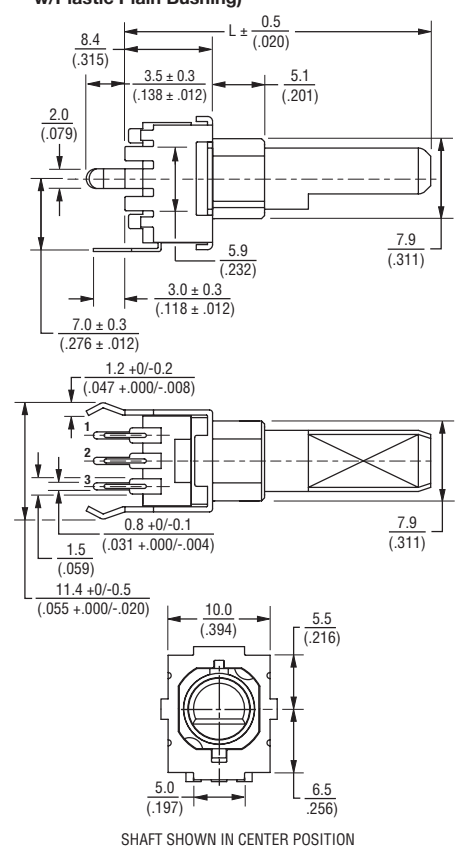
**PTV09A-3**  
(Vertical/Side Mount,  
Bushings, 6.5 mm Height)



**PTV09A-4**  
(Horizontal/Rear Mount, Bushingless)

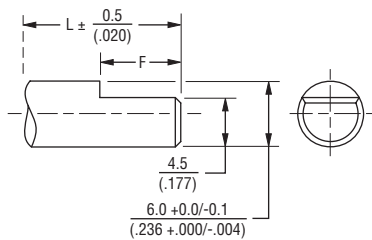


**PTV09A-5**  
(Horizontal/Rear Mount  
w/Plastic Plain Bushing)



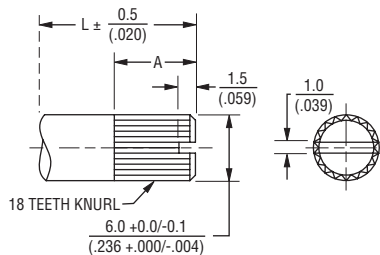
## Shaft Styles

**F-Type**



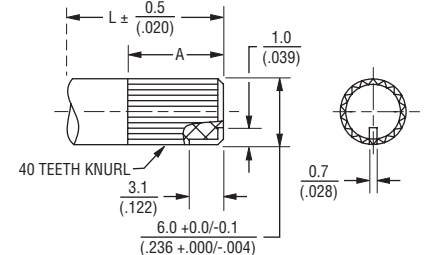
|   |              |              |              |               |
|---|--------------|--------------|--------------|---------------|
| L | 15<br>(.591) | 20<br>(.787) | 25<br>(.984) | 30<br>(1.181) |
| F | 6<br>(.236)  | 7<br>(.275)  | 12<br>(.472) | 12<br>(.472)  |

**S-Type**



|   |              |              |              |               |
|---|--------------|--------------|--------------|---------------|
| L | 15<br>(.591) | 20<br>(.787) | 25<br>(.984) | 30<br>(1.181) |
| A | 7<br>(.275)  | 7<br>(.275)  | 7<br>(.275)  | 7<br>(.275)   |

**U-Type**



|   |              |              |              |               |
|---|--------------|--------------|--------------|---------------|
| L | 15<br>(.591) | 20<br>(.787) | 25<br>(.984) | 30<br>(1.181) |
| A | 6<br>(.236)  | 7<br>(.275)  | 7<br>(.275)  | 7<br>(.275)   |

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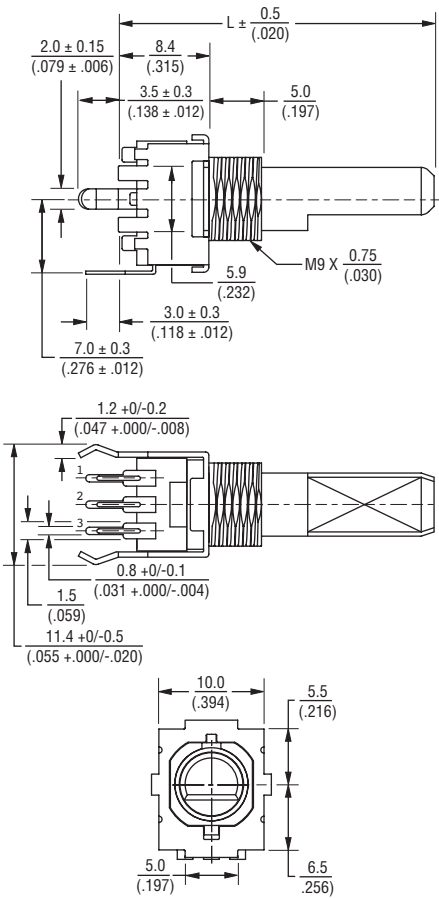
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# PTV09 Series - 9 mm Potentiometer

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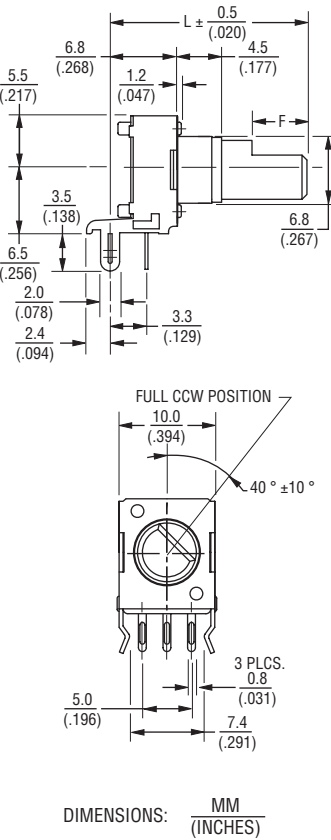
## Product Dimensions (Continued)

**PTV09A-6**  
(Horizontal/Rear Mount  
w/Metal Threaded Bushing)

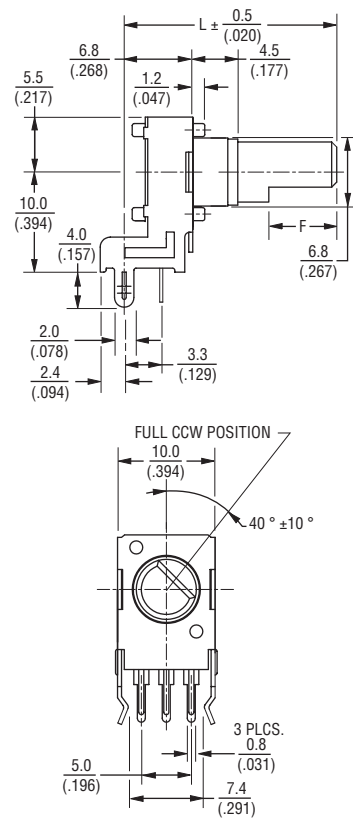


SHAFT SHOWN IN CENTER POSITION

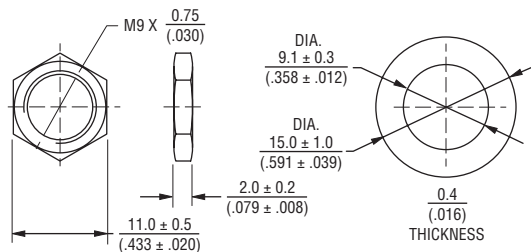
**PTV09A-7**  
(Vertical/Side Mount  
w/Sleeve Bushing, 6.5 mm Height)



**PTV09A-8**  
(Vertical/Side Mount  
w/Sleeve Bushing, 10 mm Height)



## Mounting Hardware



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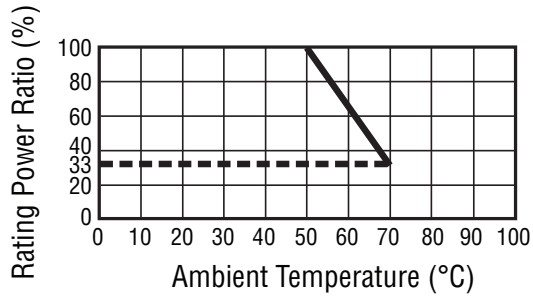
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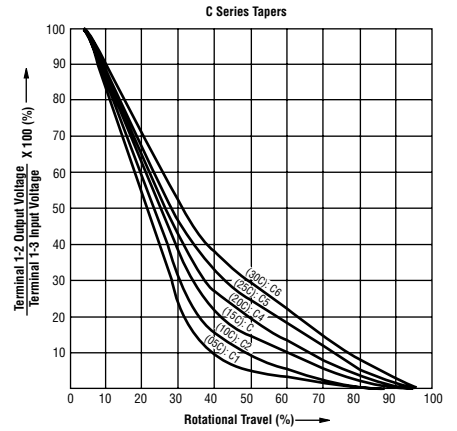
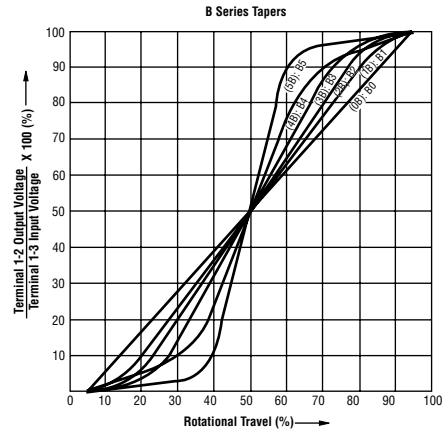
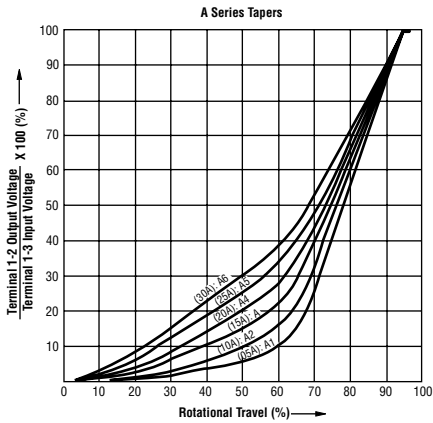
# PTV09 Series - 9 mm Potentiometer

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## Derating Curve



## Tapers



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