



## Features

- Carbon element
- Red, orange, green, amber and white LED colors
- Center detent option
- Assortment of resistance tapers
- Various travel lengths
- Various lever sizes



## PTL Series Slide Potentiometer w/LED

### Electrical Characteristics

|                                 |                          |
|---------------------------------|--------------------------|
| Standard Resistance Range       | .....1K ohms to 1 megohm |
| Standard Resistance Tolerance   | .....±20 %               |
| End Resistance                  |                          |
| 20 mm Travel                    | ..... 10 ohms max.       |
| 30 mm Travel                    | ..... 20 ohms max.       |
| 45 mm Travel                    | ..... 20 ohms max.       |
| 60 mm Travel                    | ..... 30 ohms max.       |
| 100 mm Travel                   | ..... 30 ohms max.       |
| Insulation Resistance @ 250 VDC | ..... 100 megohms min.   |
| Dielectric Withstanding Voltage | ..... 300 VAC            |
| Standard Taper                  | ..... Linear, Audio      |
| Power Rating - Linear           |                          |
| 20 mm Travel                    | ..... 0.05 watt          |
| 30 mm Travel                    | ..... 0.1 watt           |
| 45 mm Travel                    | ..... 0.125 watt         |
| 60 mm Travel                    | ..... 0.2 watt           |
| 100 mm Travel                   | ..... 0.2 watt           |
| Power Rating - Audio            |                          |
| 20 mm Travel                    | ..... 0.025 watt         |
| 30 mm Travel                    | ..... 0.05 watt          |
| 45 mm Travel                    | ..... 0.06 watt          |
| 60 mm Travel                    | ..... 0.1 watt           |
| 100 mm Travel                   | ..... 0.1 watt           |
| Slider Noise                    | ..... 200 mV max.        |

### Environmental Characteristics

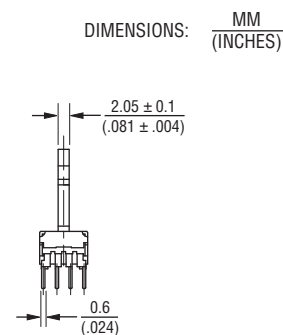
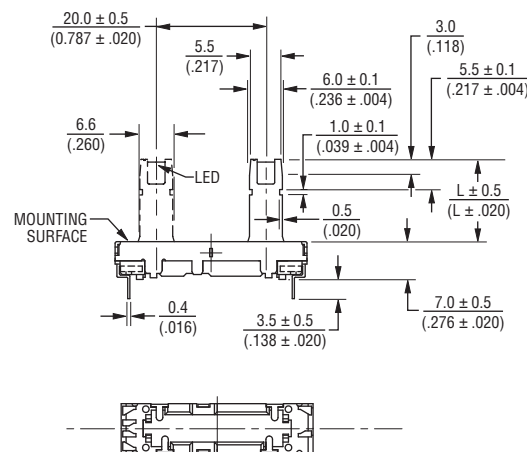
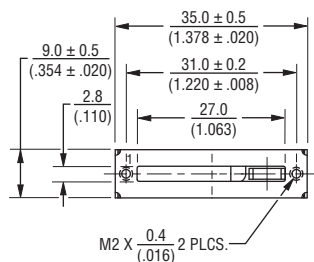
|                             |                        |
|-----------------------------|------------------------|
| Operational Life            | ..... 15,000 cycles    |
| TR Shift                    | ..... ±15 %            |
| Operating Temperature Range | ..... -10 °C to +55 °C |
| Resistance to Solder Heat   | ..... ±5 %             |
| Moisture Sensitivity Level  | ..... 1                |
| ESD Classification (HBM)    | ..... N/A              |

### Mechanical Characteristics

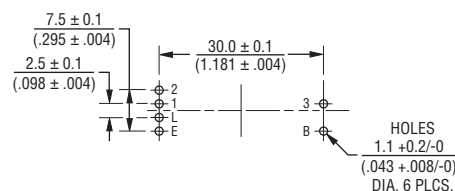
|                     |                               |
|---------------------|-------------------------------|
| Mechanical Travel   | ..... Length ±0.5 mm          |
| Operating Force     | ..... 30 gf to 250 gf         |
| Center Detent Force | ..... 20 gf to 200 gf         |
| Stop Strength       | ..... 5 kgf min.              |
| Shaft Axial Force   | ..... 5 kgf min.              |
| Shaft Wobble        | ..... 2(2 x L/20) mm p-p max. |
| Soldering Condition |                               |
| Manual              | ..... 300 °C ±5 °C for 3 sec. |
| Wave                | ..... 260 °C ±5 °C for 5 sec. |
| Wash                | ..... Not recommended         |

### Product Dimensions

#### 20 mm Length of Travel



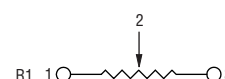
#### Mounting Hole Detail



### 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             |

### Schematic



**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

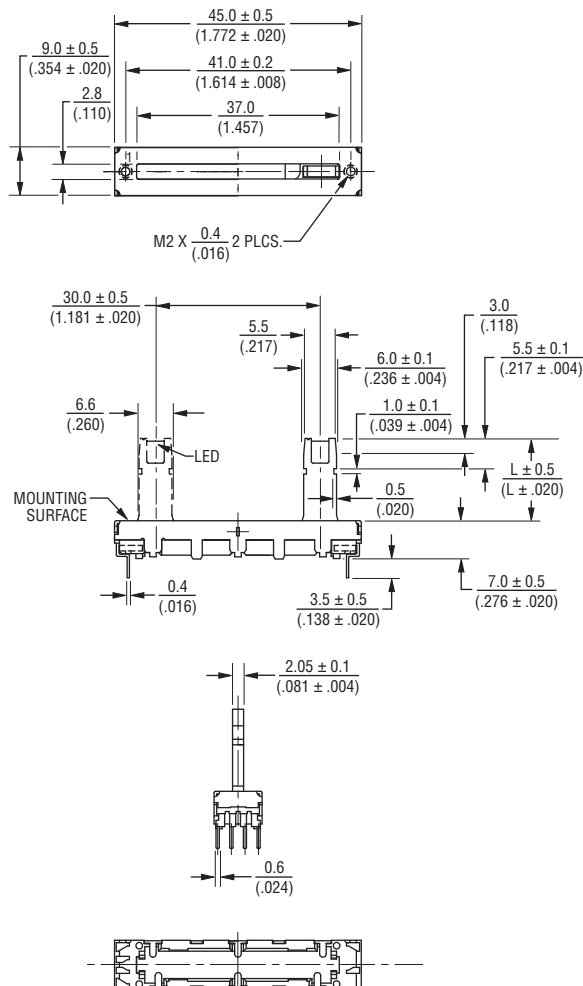
- Mixing consoles
- Drum machines
- Keyboards and synthesizers
- Equalizers

# PTL Series Slide Potentiometer w/LED

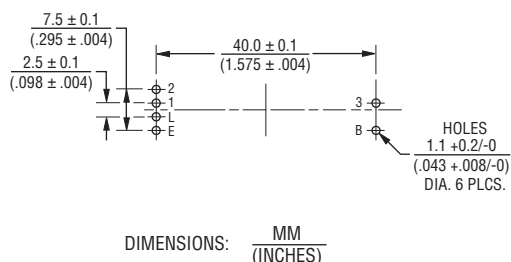
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## Product Dimensions

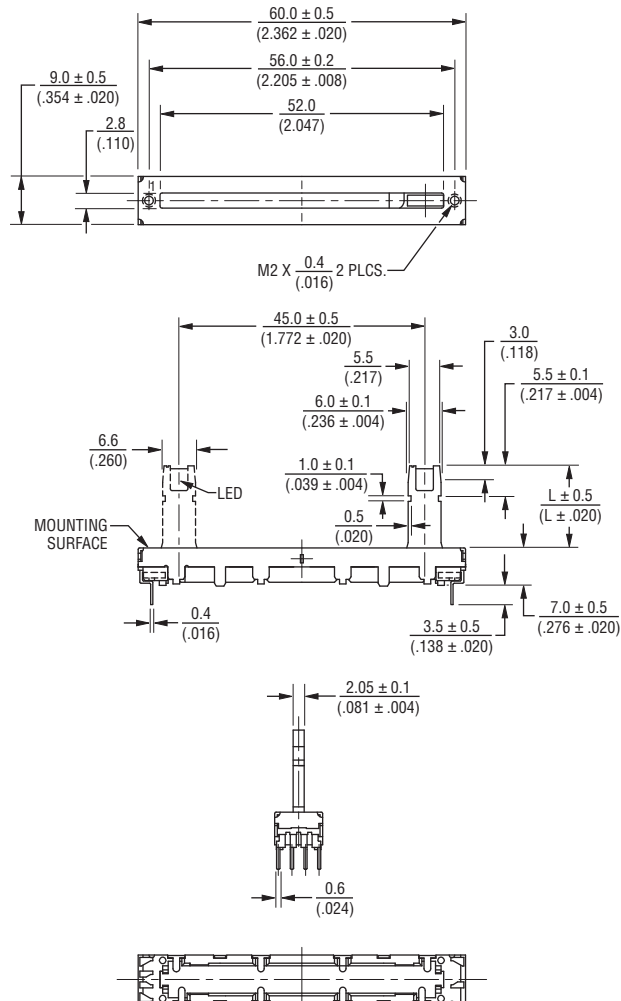
### 30 mm Length of Travel



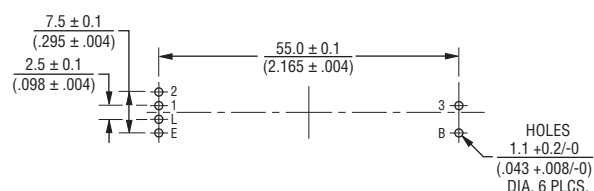
### Mounting Hole Detail



### 45 mm Length of Travel



### Mounting Hole Detail



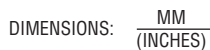
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### 60 mm Length of Travel



Technical drawing of the LED strip light assembly, showing dimensions in inches and millimeters.

**Top View Dimensions:**

- Total length:  $128.0 \pm 0.5$  (5.039  $\pm$  .020)
- Length to first LED:  $120.0 \pm 0.2$  (4.724  $\pm$  .008)
- Length to last LED:  $107.6$  (4.236)
- Mounting hole diameter:  $2.8$  (.110)
- Mounting hole offset:  $9.3 \pm 0.5$  (.366  $\pm$  .020)
- Mounting hole pitch:  $M3 \times .5$  (2 PLCS. (.020))

**Side View Dimensions:**

- LED height:  $3.0$  (.118)
- LED pitch:  $5.5 \pm 0.1$  (.217  $\pm$  .004)
- LED width:  $6.0 \pm 0.1$  (.236  $\pm$  .004)
- LED offset:  $1.0 \pm 0.1$  (.039  $\pm$  .004)
- LED thickness:  $0.5$  (.020)
- Mounting hole offset:  $6.6$  (.260)
- Mounting hole diameter:  $0.4$  (.016)
- Mounting hole pitch:  $2.05 \pm 0.1$  (.081  $\pm$  .004)
- Mounting hole offset:  $7.0 \pm 0.5$  (.276  $\pm$  .020)
- Mounting hole pitch:  $3.5 \pm 0.5$  (.138  $\pm$  .020)
- Mounting hole offset:  $5.5 \pm 0.1$  (.217  $\pm$  .004)
- Mounting hole pitch:  $L \pm 0.5$  (L  $\pm$  .020)

**End View Dimensions:**

- LED height:  $3.0$  (.118)
- LED pitch:  $5.5 \pm 0.1$  (.217  $\pm$  .004)
- LED width:  $6.0 \pm 0.1$  (.236  $\pm$  .004)
- LED offset:  $1.0 \pm 0.1$  (.039  $\pm$  .004)
- LED thickness:  $0.5$  (.020)
- Mounting hole offset:  $6.6$  (.260)
- Mounting hole diameter:  $0.4$  (.016)
- Mounting hole pitch:  $2.05 \pm 0.1$  (.081  $\pm$  .004)
- Mounting hole offset:  $7.0 \pm 0.5$  (.276  $\pm$  .020)
- Mounting hole pitch:  $3.5 \pm 0.5$  (.138  $\pm$  .020)
- Mounting hole offset:  $5.5 \pm 0.1$  (.217  $\pm$  .004)
- Mounting hole pitch:  $L \pm 0.5$  (L  $\pm$  .020)

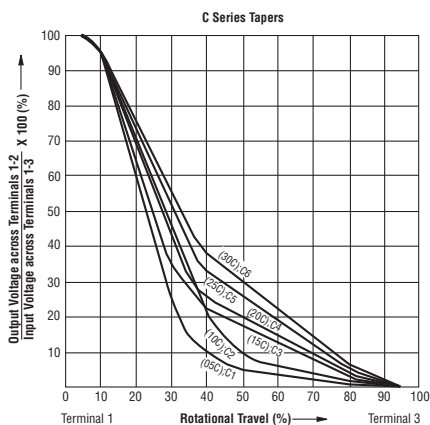
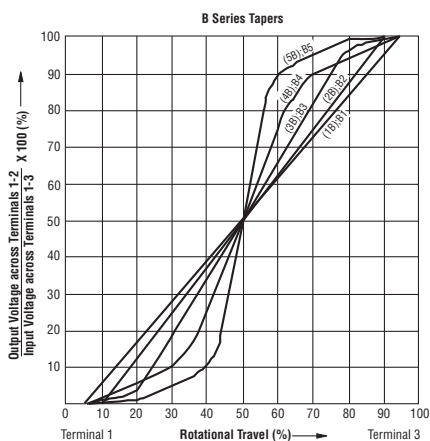
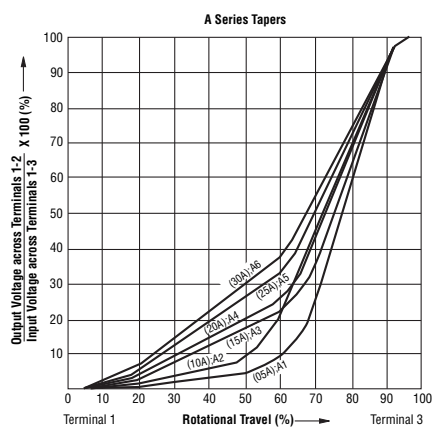
Figure 1 is a dimensioned drawing of a shaft. The shaft has a total length of 123.0 ± 0.1 (4.843 ± .004). It features a central hole with a diameter of 2.0 ± 0.2/-0 (0.079 ± .008/-0) and a length of 2 PLCS. There are also two smaller holes with a diameter of 1.1 ± 0.2/-0 (0.043 ± .008/-0) and a length of 6 PLCS. The shaft is supported by bearings, and the dimensions are given in inches and millimeters.

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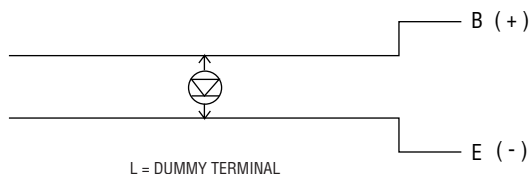
# PTL Series Slide Potentiometer w/LED

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## Tapers



## Circuit



## How To Order

**PTL 30 - 10 R 0 - 103 B2**

Model Number

Designator  
PTL = Slide  
Potentiometer  
w/LED

Length of Travel

20 = 20 mm 45 = 45 mm 01 = 100 mm  
30 = 30 mm 60 = 60 mm

Lever Length

10 = 10 mm  
15 = 15 mm  
19 = 19 mm

LED Color

R = Red A = Amber  
O = Orange W = White  
G = Green

Detent Option

0 = No Detent  
1 = Center Detent

Resistance Code

(See Standard Resistance Table)

Resistance Taper (See Taper Charts)

Taper Series followed by Curve Number

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# PTL Series Slide Potentiometer w/LED

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## LED Characteristics

| Emitter Color | Item                     | Symbol          | Test Conditions       | Min. | Typ. | Max. | Unit |
|---------------|--------------------------|-----------------|-----------------------|------|------|------|------|
| Red           | Forward Voltage          | $V_F$           | $I_F = 20 \text{ mA}$ |      | 1.8  | 2.0  | V    |
|               | Luminous Intensity       | $I_V$           |                       | 12   | 20   |      | mcd  |
|               | Peak Emission Wavelength | $\lambda_p$     |                       |      | 660  |      | nm   |
|               | Dominant Wavelength      | $\lambda_d$     |                       |      | 643  |      | nm   |
|               | Spectral Line Half Width | $\Delta\lambda$ |                       |      | 20   |      | nm   |
| Orange        | Forward Voltage          | $V_F$           | $I_F = 20 \text{ mA}$ |      | 2.0  | 2.7  | V    |
|               | Luminous Intensity       | $I_V$           |                       | 9    | 15   |      | mcd  |
|               | Peak Emission Wavelength | $\lambda_p$     |                       |      | 610  |      | nm   |
|               | Dominant Wavelength      | $\lambda_d$     |                       |      | 605  |      | nm   |
|               | Spectral Line Half Width | $\Delta\lambda$ |                       |      | 35   |      | nm   |
| Green         | Forward Voltage          | $V_F$           | $I_F = 20 \text{ mA}$ |      | 3.3  | 4.0  | V    |
|               | Luminous Intensity       | $I_V$           |                       | 105  | 175  |      | mcd  |
|               | Peak Emission Wavelength | $\lambda_p$     |                       |      | 530  |      | nm   |
|               | Dominant Wavelength      | $\lambda_d$     |                       |      | 35   |      | nm   |
|               | Spectral Line Half Width | $\Delta\lambda$ |                       |      | 160  |      | nm   |
| Amber         | Forward Voltage          | $V_F$           | $I_F = 20 \text{ mA}$ |      | 2.1  | 2.6  | V    |
|               | Luminous Intensity       | $I_V$           |                       |      | 5.0  |      | mcd  |
|               | Peak Emission Wavelength | $\lambda_p$     |                       |      | 585  |      | nm   |
|               | Dominant Wavelength      | $\lambda_d$     |                       | 582  | —    | 595  | nm   |
|               | Spectral Line Half Width | $\Delta\lambda$ |                       |      | 35   |      | nm   |
| White         | Forward Voltage          | $V_F$           | $I_F = 20 \text{ mA}$ |      | 3.2  | 3.6  | V    |
|               | Luminous Intensity       | $I_V$           |                       |      | 1000 |      | mcd  |
|               | Peak Emission Wavelength | $\lambda_p$     |                       |      | —    |      | nm   |
|               | Dominant Wavelength      | $\lambda_d$     |                       | 460  | —    | 470  | nm   |
|               | Spectral Line Half Width | $\Delta\lambda$ |                       |      | 35   |      | nm   |

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