

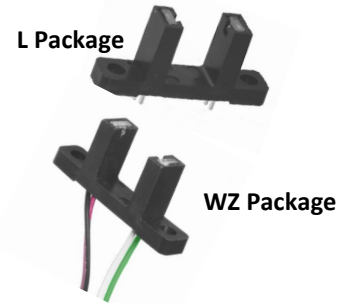
# Deep Gap Slotted Switch with Wire and Connector Options

## OPB815L, OPB815WZ Series



### Features:

- Wide slot width: 0.375" (9.5 mm)
- Deep slot depth: 0.430" (10.9 mm)



### Description:

The **OPB815** consists of an infrared Light Emitting Diode (LED) and an NPN silicon phototransistor mounted in a low-cost plastic housing. The device is designed to switch electrical states when an opaque object is passed through the slot. The slot is wider and deeper than many slotted switches and will accommodate a variety of different materials.

This device can be ordered with PCBoard solderable leads (OPB815L) or with 26 AWG stranded, UL rated wire length of 24" [610 mm] (OPB815WZ).

Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

| Ordering Information |        |            |                 |          |               |
|----------------------|--------|------------|-----------------|----------|---------------|
|                      |        |            |                 | Aperture | Lead          |
| OPB815L              | 890 nm | Transistor | 0.375" / 0.430" | None     | 0.10" / 0.53" |
| OPB815WZ             | 890 nm | Transistor | 0.375" / 0.430" | None     | 24" / 26 AWG  |

### Applications:

- Non-contact object sensing
- Assembly line automation
- Machine automation
- Equipment security
- Machine safety



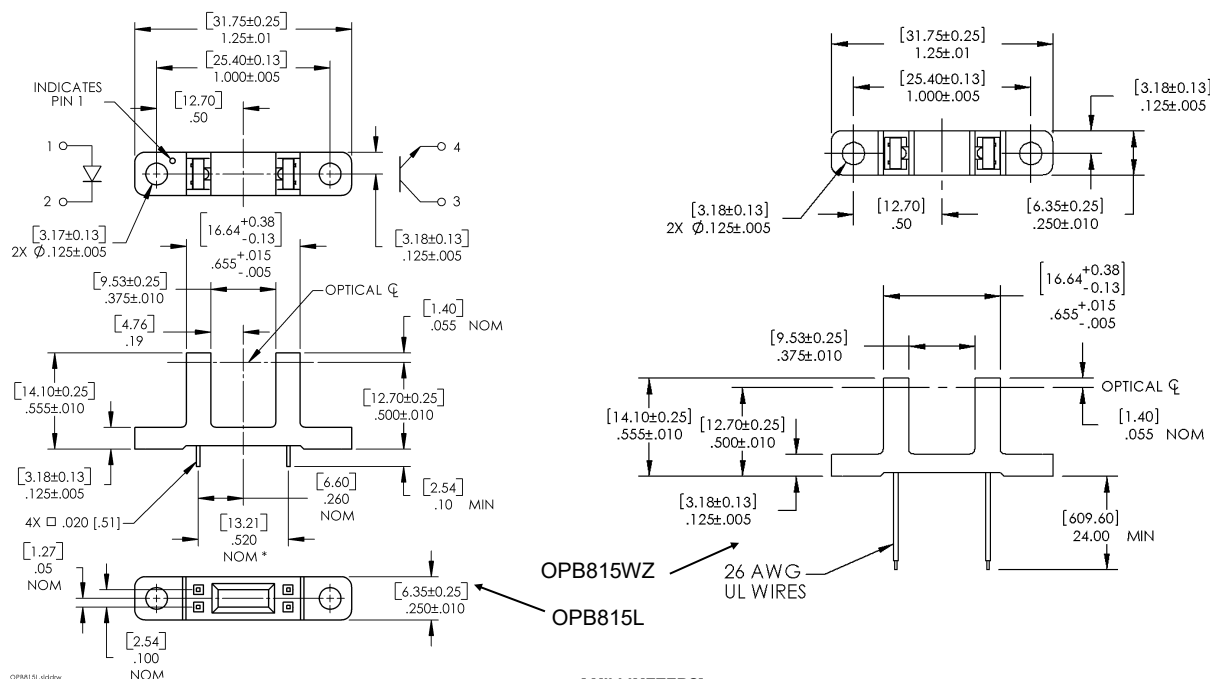
General Note  
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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DIMENSIONS ARE IN: [ MILLIMETERS]  
INCHES

| Pin # | Description |
|-------|-------------|
| 1     | Anode       |
| 2     | Cathode     |
| 3     | Collector   |
| 4     | Emitter     |

| Color | Description |
|-------|-------------|
| Red   | Anode       |
| Black | Cathode     |
| White | Collector   |
| Green | Emitter     |

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## Electrical Specifications

**Absolute Maximum Ratings** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

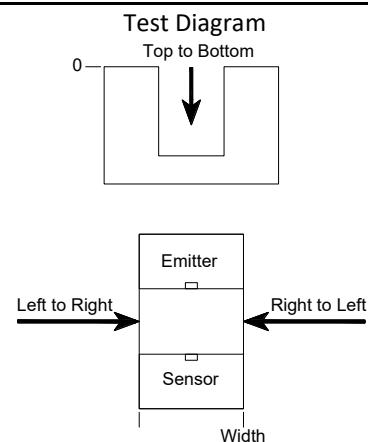
|   |                  |
|---|------------------|
| Storage & Operating Temperature Range   | -40° C to +80° C |
| Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron] | 260° C           |
| <b>Input Infrared LED</b>   |                  |
| Continuous Forward Current  | 50 mA            |
| Reverse Voltage   | 2 V              |
| Power Dissipation <sup>(2)</sup>  | 100 mW           |
| <b>Output Phototransistor</b>   |                  |
| Collector-Emitter Voltage   | 30 V             |
| Emitter-Collector Voltage   | 5 V              |
| Power Dissipation <sup>(2)</sup>  | 100 mW           |

**Electrical Characteristics** ( $T_A = 25^{\circ}\text{C}$  unless otherwise noted)

| SYMBOL   | PARAMETER                            | MIN | TYP | MAX | UNITS         | TEST CONDITIONS                              |
|--|--------------------------------------|-----|-----|-----|---------------|--|
| <b>Input Infrared LED</b> (see OP240 for additional information)     |                                      |     |     |     |               |  |
| $V_F$  | Forward Voltage                      | -   | -   | 1.7 | V             | $I_F = 20 \text{ mA}$                        |
| $I_R$  | Reverse Current                      | -   | -   | 100 | $\mu\text{A}$ | $V_R = 2 \text{ V}$                          |
| <b>Output Phototransistor</b> (see OP550 for additional information) |                                      |     |     |     |               |  |
| $V_{(BR)CEO}$  | Collector-Emitter Breakdown Voltage  | 30  | -   | -   | V             | $I_C = 1 \text{ mA}$                         |
| $V_{(BR)ECO}$  | Emitter-Collector Breakdown Voltage  | 5   | -   | -   | v             | $I_E = 100 \mu\text{A}$                      |
| $I_{CEO}$  | Collector-Emitter Dark Current       | -   | -   | 100 | nA            | $V_{CE} = 10 \text{ V}, I_F = 0, E_E = 0$    |
| <b>Coupled</b>   |                                      |     |     |     |               |  |
| $V_{CE(SAT)}$  | Collector-Emitter Saturation Voltage | -   | -   | 0.4 | V             | $I_C = 500 \mu\text{A}, I_F = 20 \text{ mA}$ |
| $I_{C(ON)}$  | On-State Collector Current           | 3.5 | -   | 16  | mA            | $V_{CE} = 10 \text{ V}, I_F = 20 \text{ mA}$ |

### Notes:

- (1) All wires are 26 AWG stranded, UL rated.
- (2) Derate linearly 1.67mW/°C above 25° C.
- (3) Methanol or isopropanol are recommended as cleaning agents. The plastic housing is soluble in chlorinated hydrocarbons and ketones.
- (4) All parameters tested using pulse techniques.



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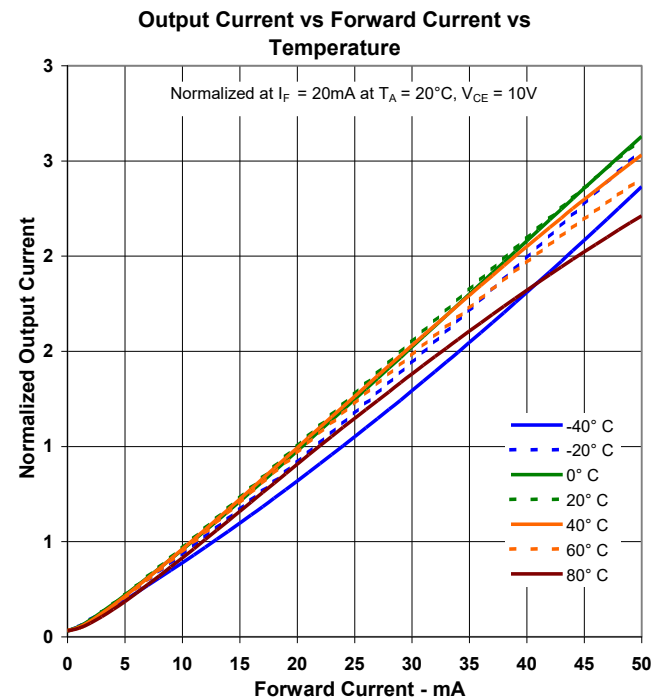
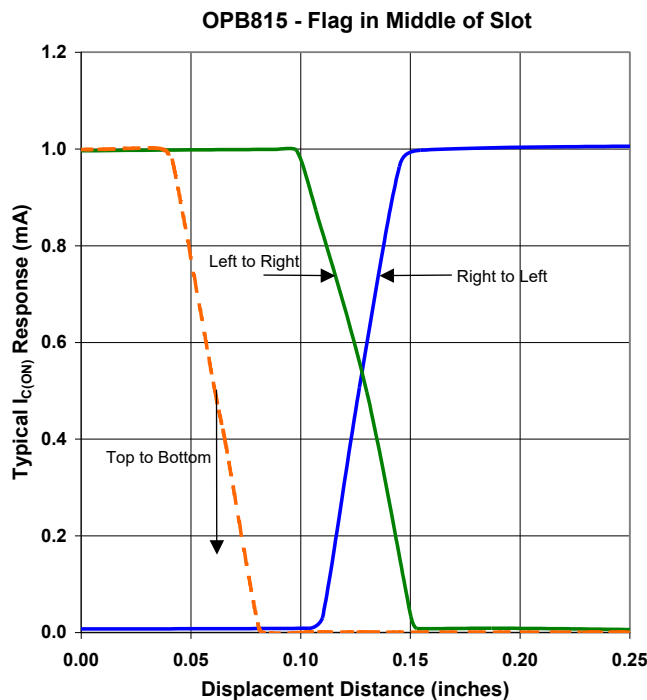
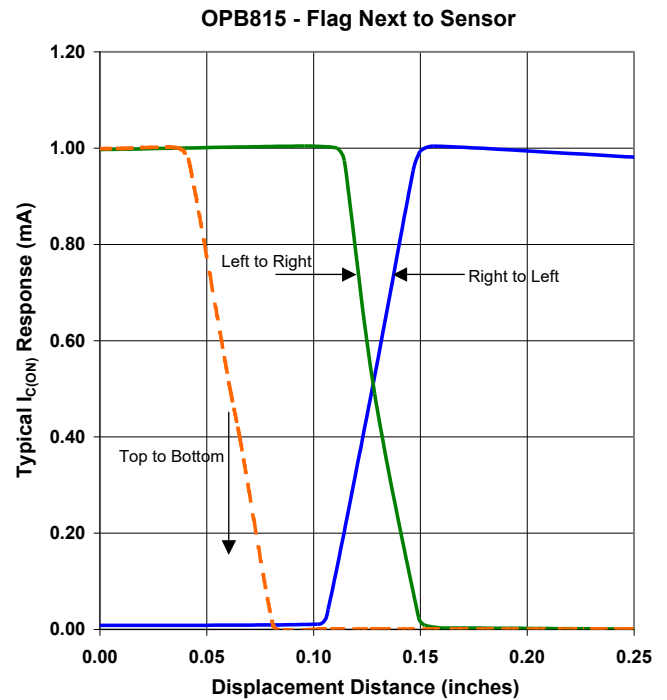
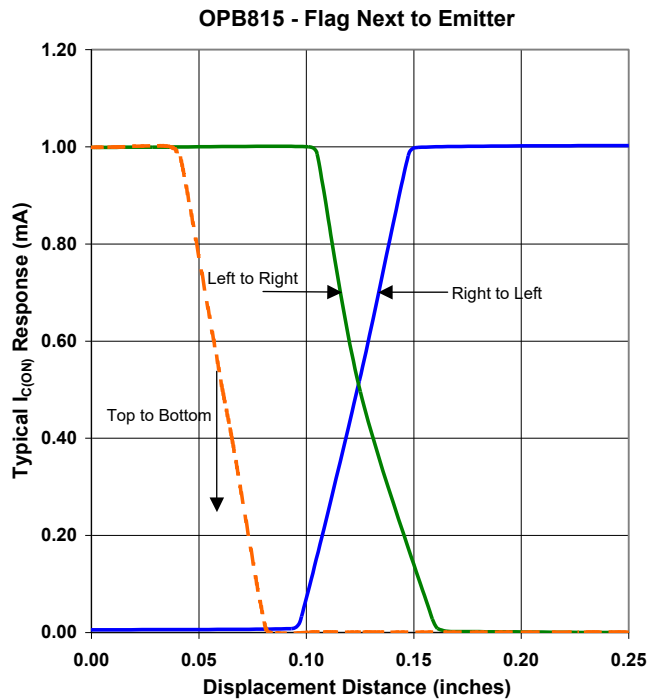
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### Performance



Refer to Test Diagram on page 2 for definition of “Top to Bottom”, “Left to Right” and “Right to Left”

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