

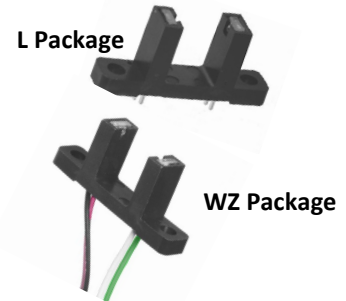


**THE DATASHEET OF  
OPB815WZ**



# 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



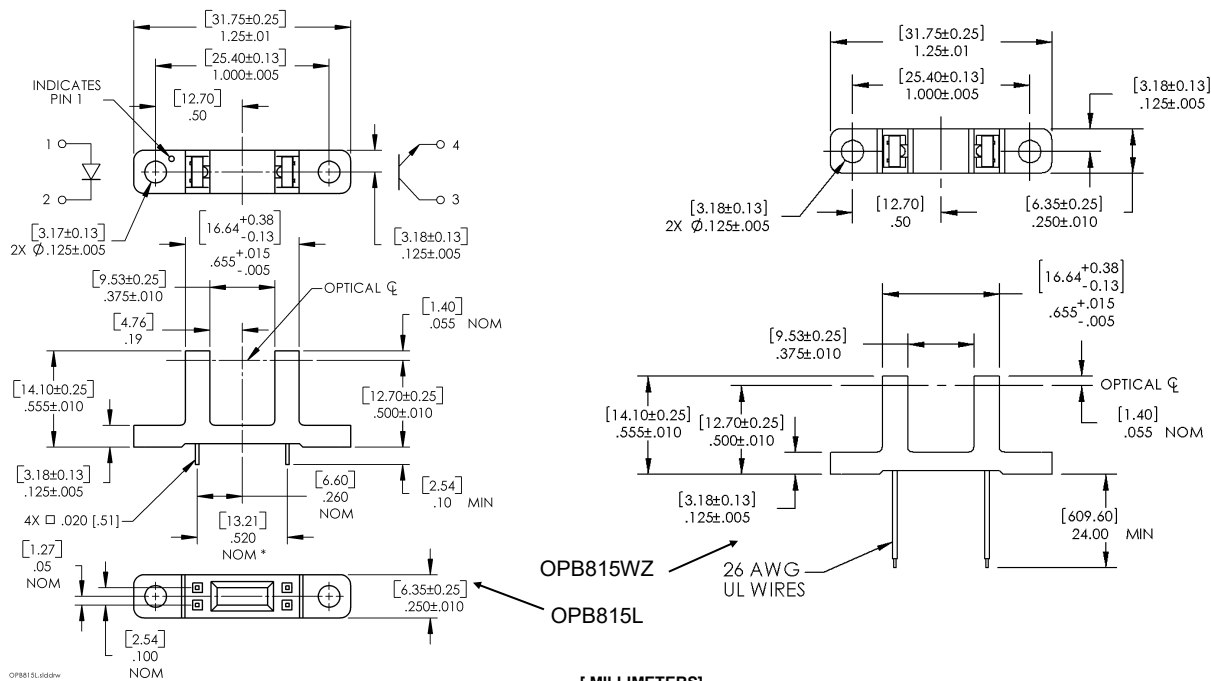
General Note  
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DIMENSIONS ARE IN: [ MILLIMETERS]  
INCHES

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)

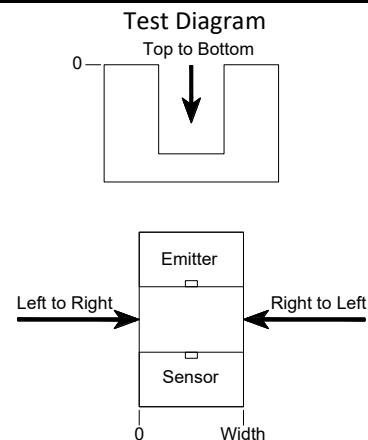
Storage & Operating Temperature Range	-40° C to +80° C
Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron]	260° C
<b>Input Infrared LED</b>	
Continuous Forward Current	50 mA
Reverse Voltage	2 V
Power Dissipation <sup>(2)</sup>	100 mW
<b>Output Phototransistor</b>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



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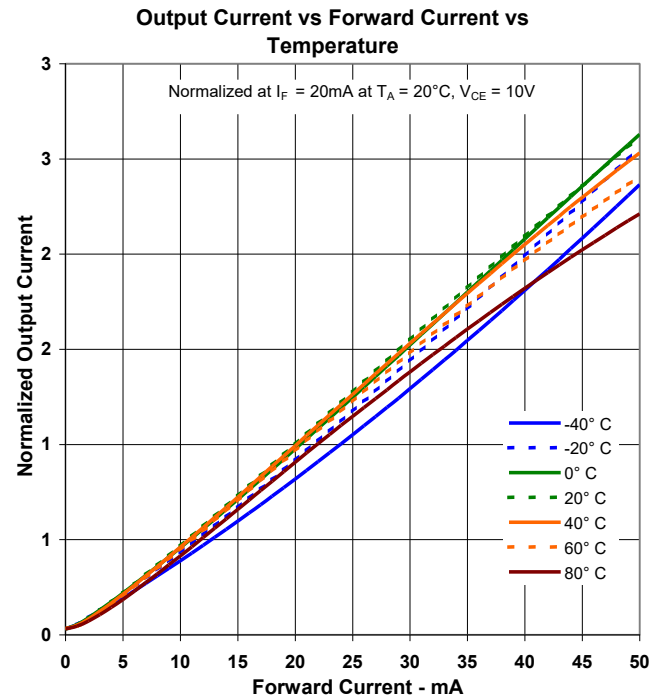
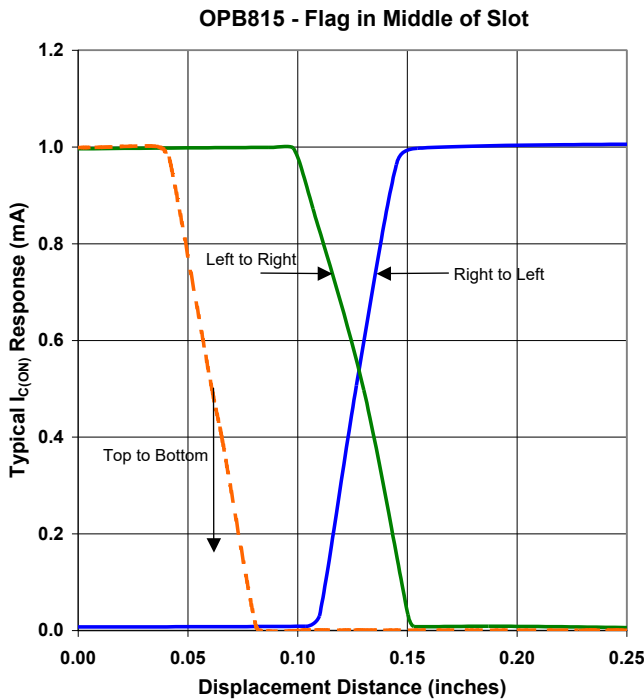
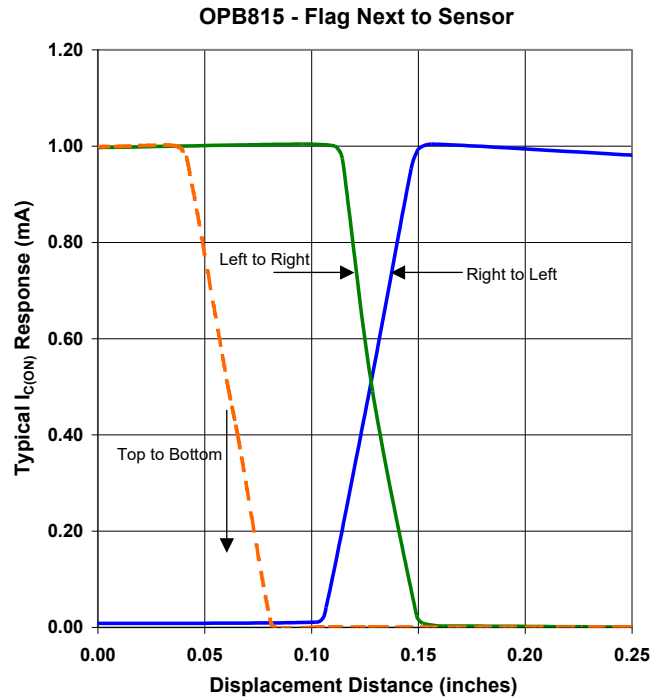
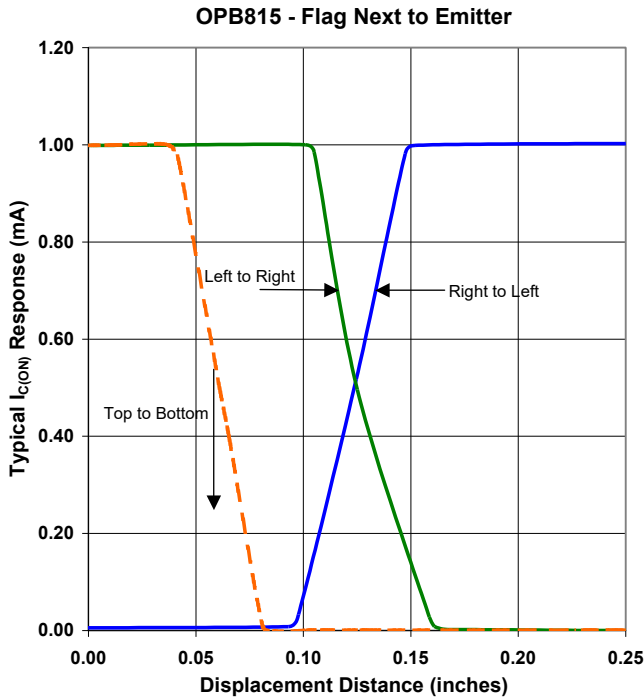
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### Performance



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

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