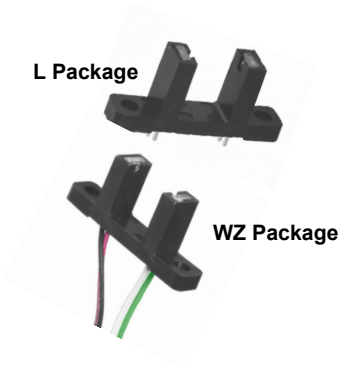
Deep Gap Slotted Switch with Wire and Connector Options

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					
Part	LED Peak		Slot	Aperture Emitter /Sensor	Lead Length /
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

RoHS

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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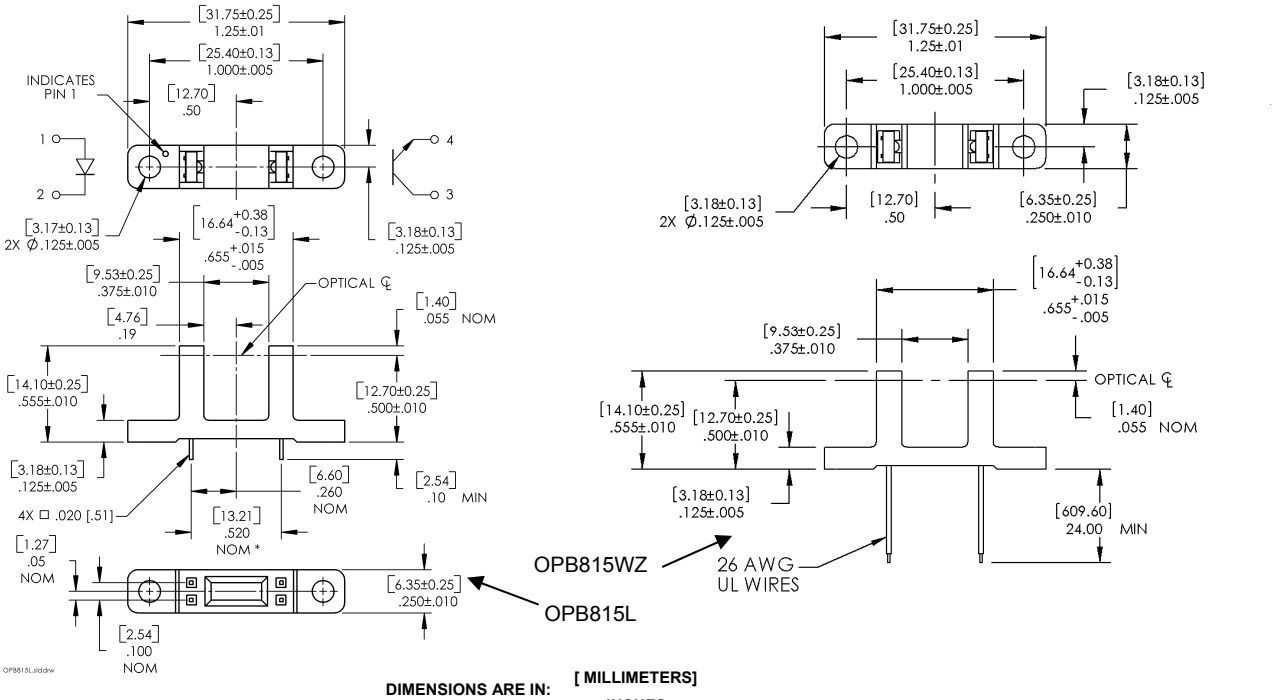

DIMENSIONS ARE IN: **[MILLIMETERS]**
INCHES

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

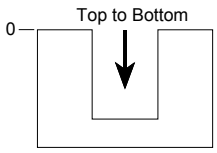
Absolute Maximum Ratings (T_A=25°C unless otherwise noted)	
Storage & Operating Temperature Range	-40° C to +80° C
Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron]	260° C
Input Infrared LED	
Continuous Forward Current	50 mA
Reverse Voltage	2 V
Power Dissipation(2)	100 mW
Output Phototransistor	
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Power Dissipation(2)	100 mW

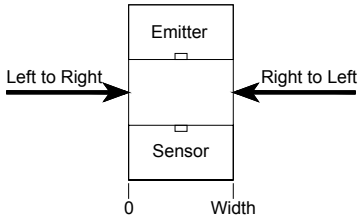
Electrical Characteristics (T_A = 25°C unless otherwise noted)

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

Test Diagram





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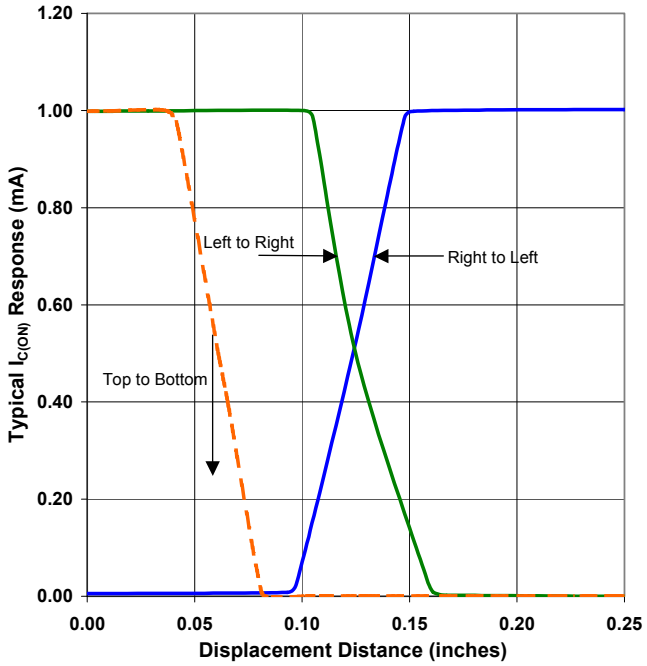
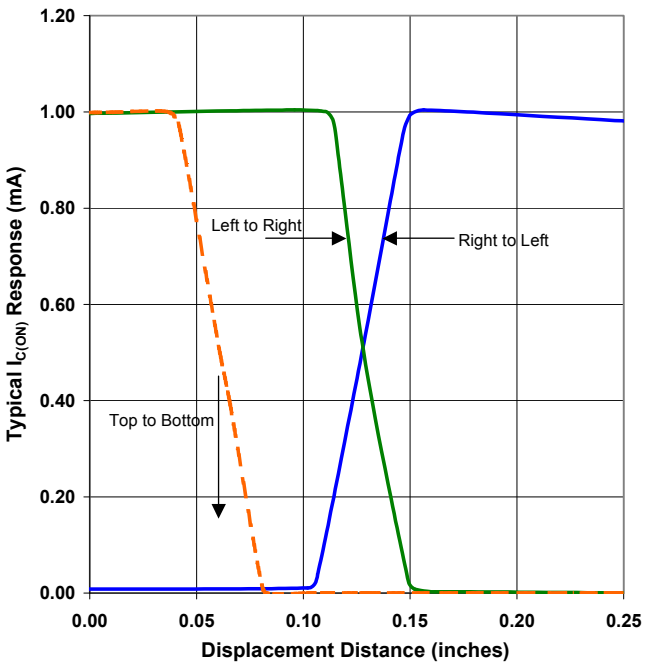
Performance

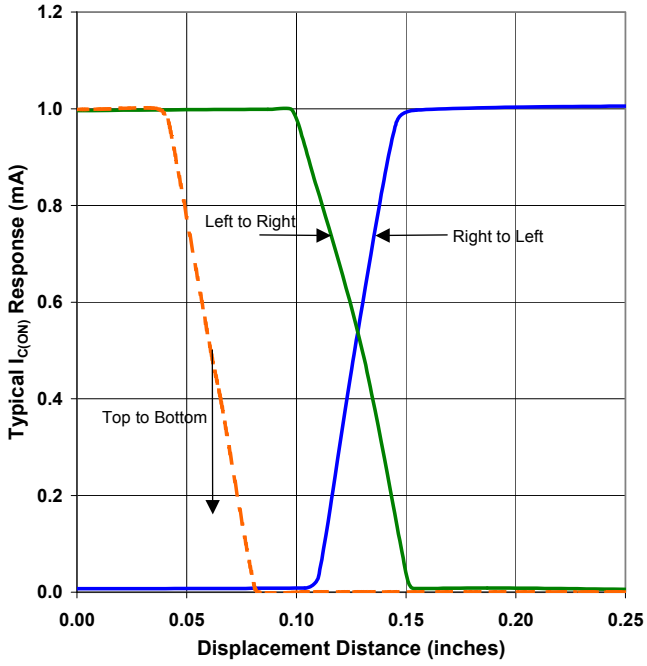
OPB815 - Flag Next to Emitter



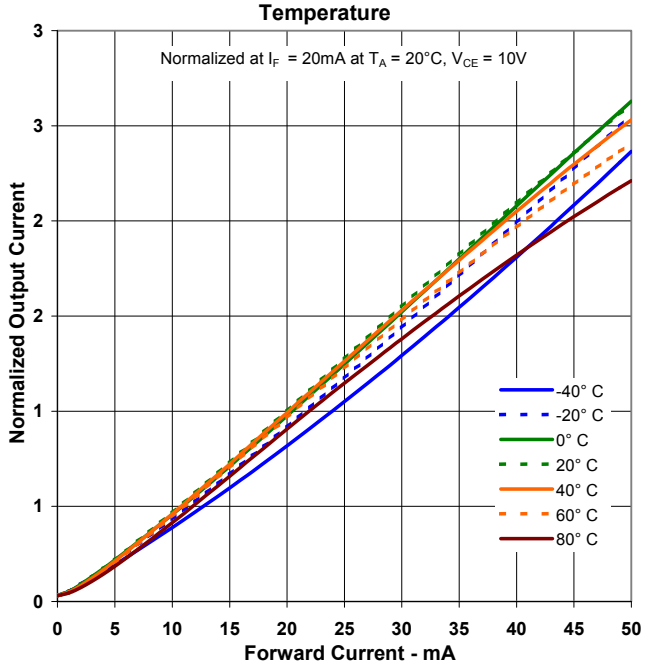
OPB815 - Flag Next to Sensor



OPB815 - Flag in Middle of Slot



Output Current vs Forward Current vs Temperature



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

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