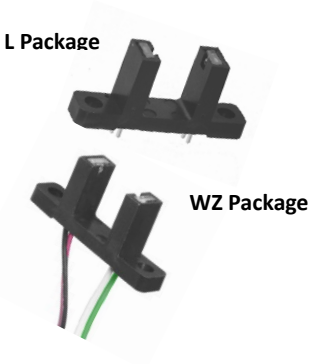
Deep Gap Slotted Switch with Wire and Connector Options

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 GaAlAs 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 printed circuit board solderable leads (OPB815L) or with #26 AWG stranded, UL rated wire with a length of 24” [610 mm] (OPB815WZ).

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

For application information, refer to Application Bulletins 248 and 213.

Ordering Information					
Part Number	**LED Peak Wavelength**	**Sensor**	**Slot Width / Depth**	**Aperture**	**Lead Length**
OPB815L	890 nm	Transistor	0.375" / 0.430”	None	0.10” /.02” sq
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
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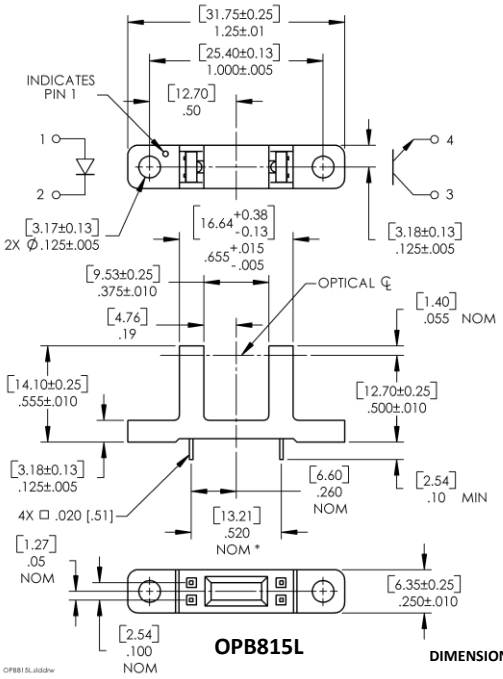
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Deep Gap Slotted Switch with Wire and Connector Options

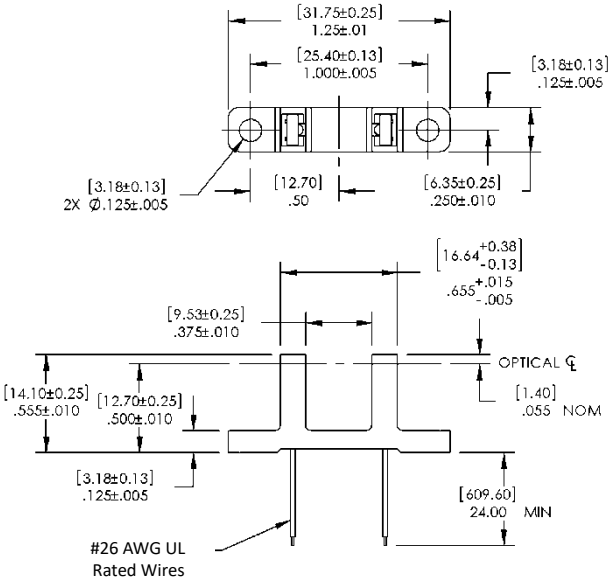
OPB815L, OPB815WZ Series

Packaging



OPB815L

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



OPB815WZ

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 (1.6 mm) from the case for 5 sec. with soldering iron] (3, 5)	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) (4)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Infrared LED						
V_F	Forward Voltage	1.0	-	1.7	V	I_F = 20 mA
I_R	Reverse Current	-	-	100	µA	V_R = 2 V
Output Phototransistor						
$V_{(BR)CEO}$	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

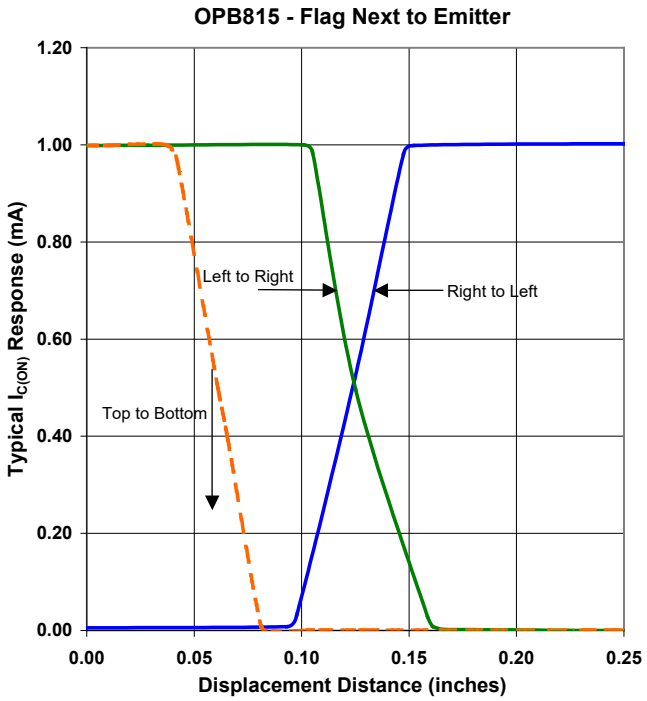
Notes:
(1) All wires are #26 AWG stranded, UL rated.
(2) Derate linearly 1.45 mW/° C above 25° C.
(3) Methanol or isopropanol are recommended as cleaning agents. The plastic housing is soluble in chlorinated hydrocarbons and ketones.
(4) All parameters tested using pulse techniques.
(5) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.

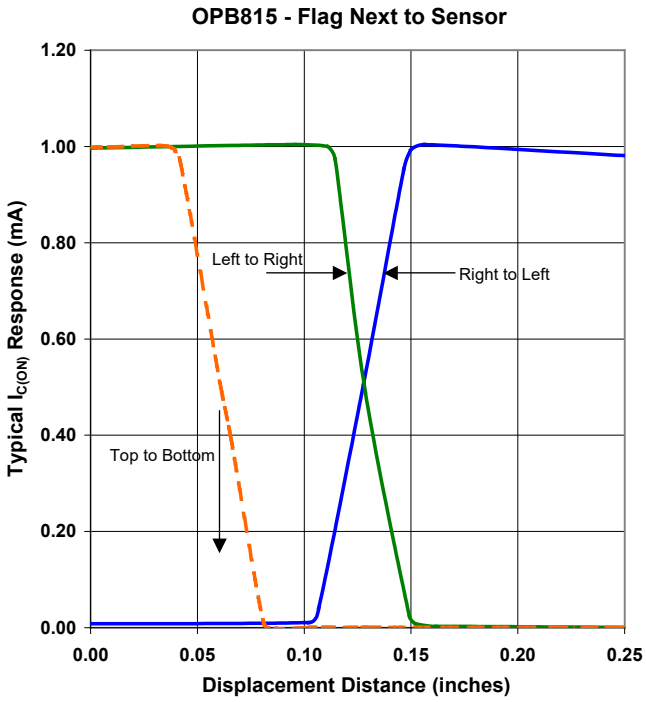
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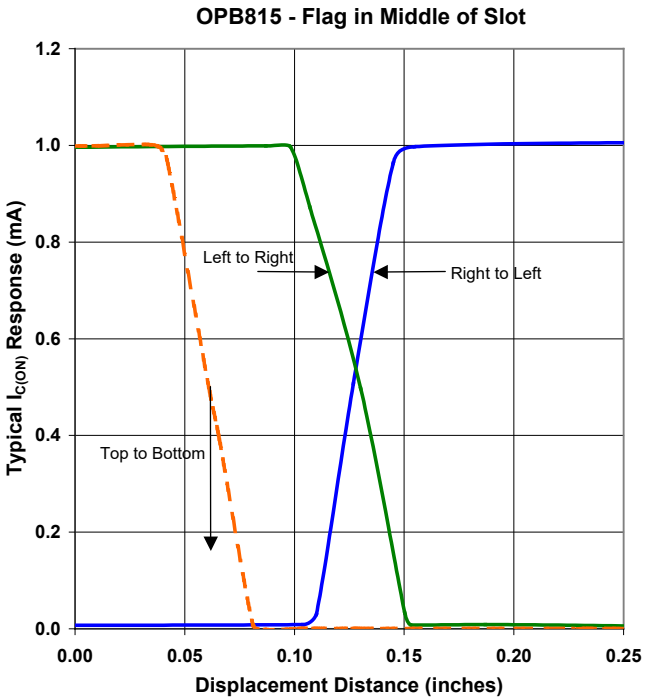
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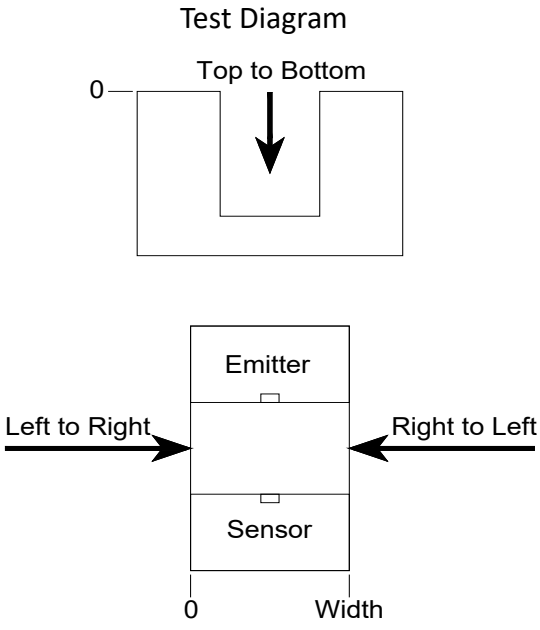
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Typical Performance









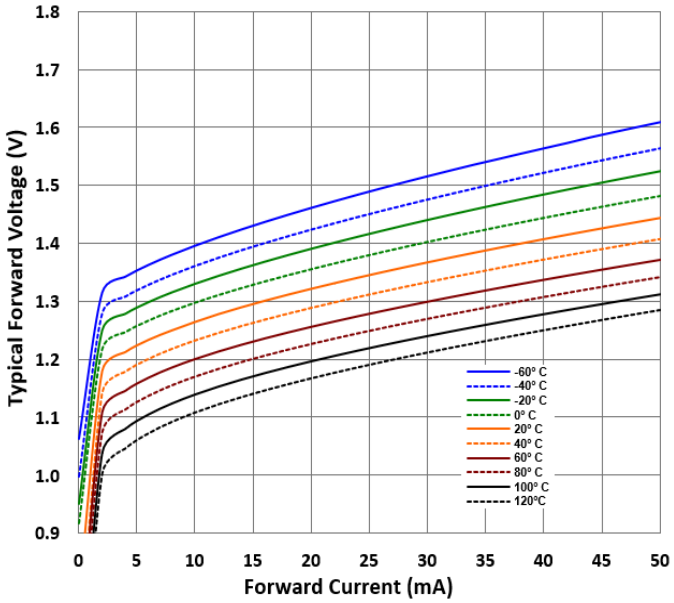
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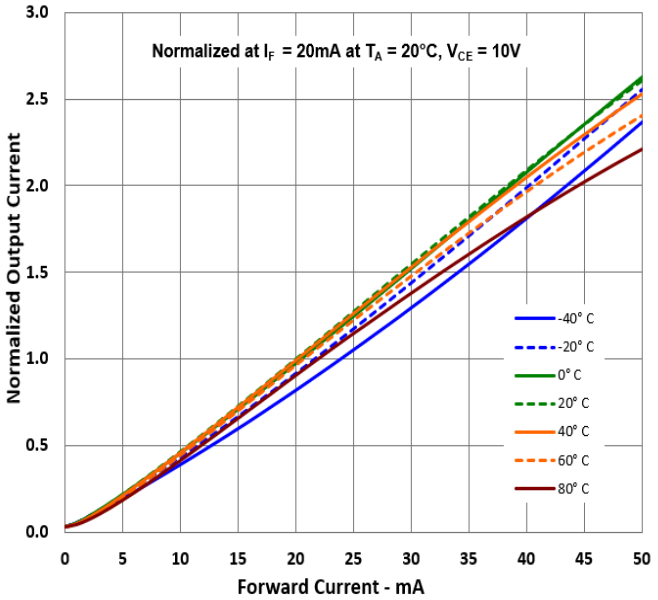
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Typical Performance

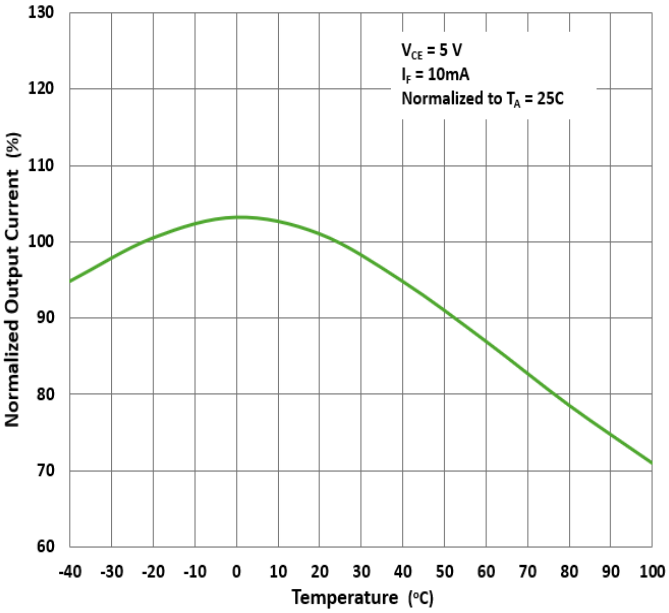
890nm LED Forward Voltage vs I_F vs Temp



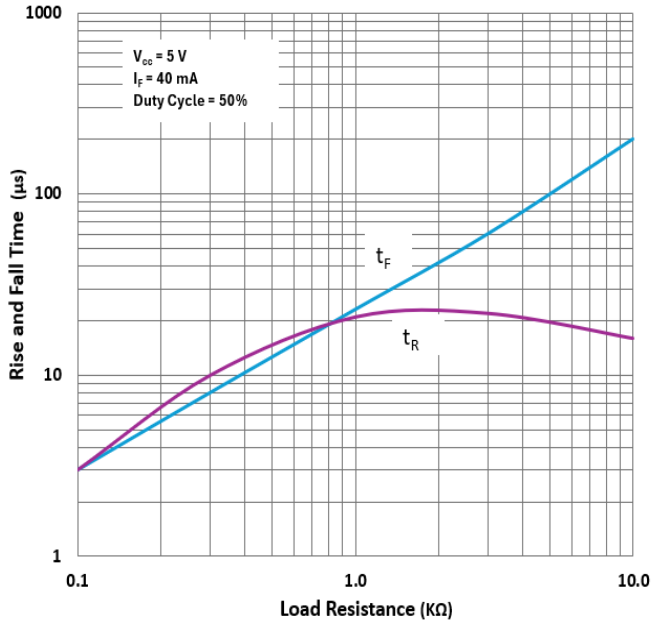
Output Current vs Forward Current vs Temperature



Output Current vs Temperature



Transistor Output - Rise and Fall Time



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