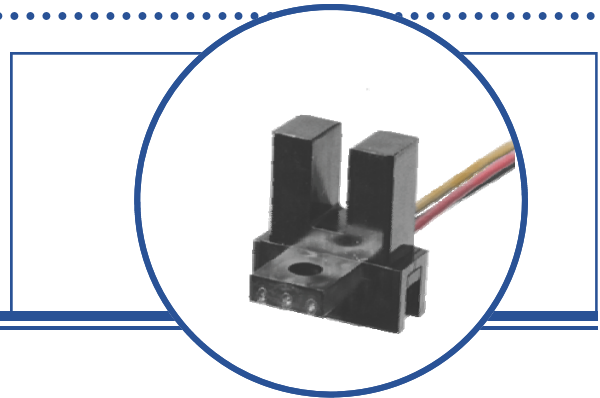


Slotted Optical Switch OPB857Z



Features:

- Choice of opaque or IR transmissive shell material
- Three lead wires for electrical connection
- Sealed plastic housing
- Non-contact switching (fast switching speed)
- 11.5" (292 mm) minimum length 26 AWG lead wires



Description:

OPB857Z consists of a NPN silicon phototransistor and an infrared Light Emitting Diode (LED) which are mounted on opposite sides of a 0.15" (3.8 mm) wide slot in an expensive plastic housing, which reduces interference from ambient light and provides dirt and dust protection.

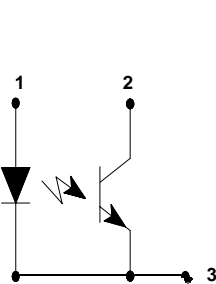
The **OPB857Z** uses an OP140 or OP240 LED and an OP550 family sensor.

Switching of the phototransistor occurs when an opaque object passes through the slot.

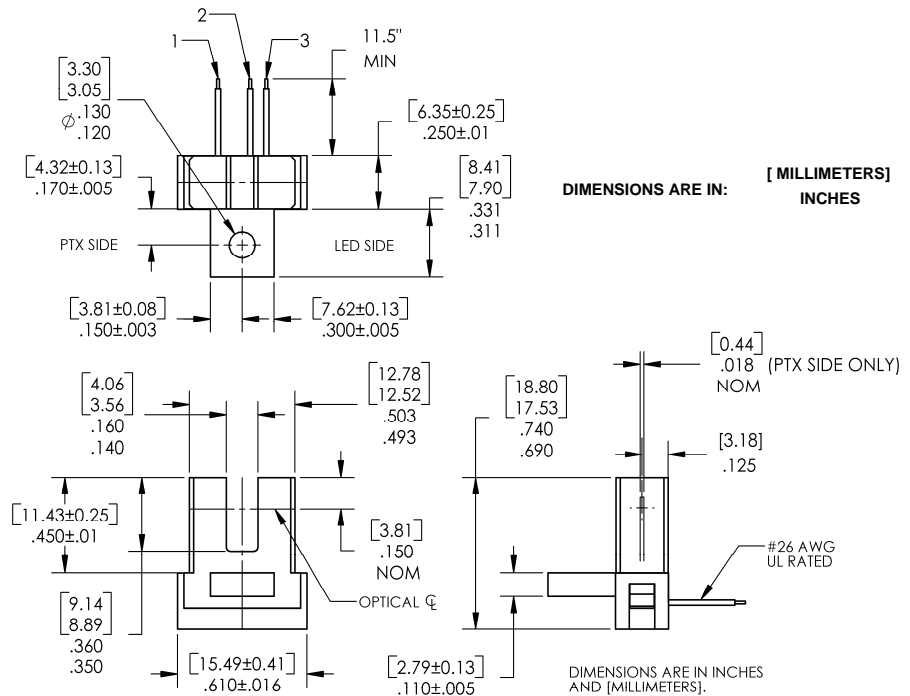
Applications:

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

Ordering Information					
Part Number	LED Peak Wavelength	Sensor	Slot Width / Depth	Aperture Emitter/Sensor	Lead Length / Spacing
OPB857Z	890 nm or	Transistor	0.150" / 0.355"	None	11.5" / 26 AWG



Color/Pin #	Description
Red—1	Collector
Brown—2	Anode
Black—3	Common



RoHS

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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] ⁽¹⁾	260° C

Input Diode

Forward DC Current	50 mA
Peak Forward Current (1 μs pulse width, 300 pps)	3 A
Reverse DC Voltage	2 V
Power Dissipation ⁽²⁾	100 mW

Output Phototransistor

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5.0 V
Power Dissipation ⁽²⁾	100 mW

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
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Input Diode (see OP140 or OP240 for additional information)

V_F	Forward Voltage	-	-	1.7	V	$I_F = 20 \text{ mA}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2 \text{ V}$

Output Phototransistor (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 Dark Current	-	-	100	nA	$V_{CE} = 10 \text{ V}, I_F = 0, E_E = 0$

Combined

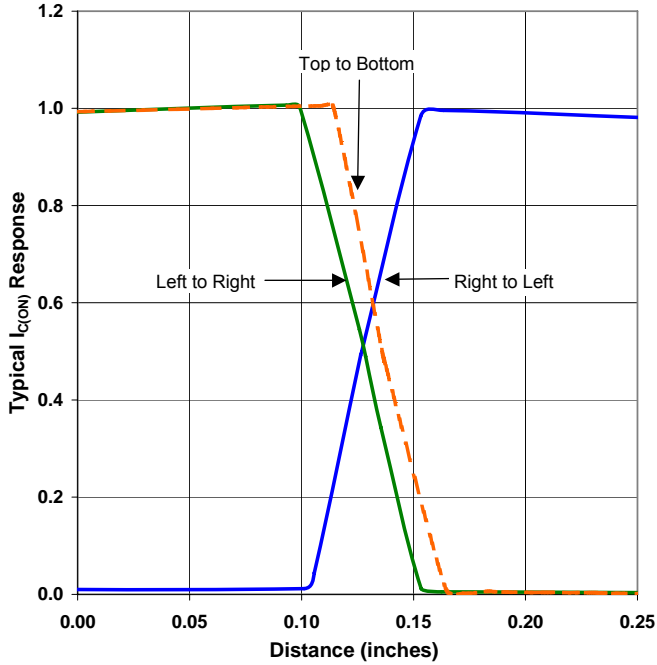
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	-	-	0.4	V	$I_C = 1.50 \text{ mA}, I_F = 20 \text{ mA}$
$I_{C(ON)}$	On-State Collector Current	1.5	-	17	mA	$I_F = 20 \text{ mA}, V_{CE} = 10 \text{ V}$

Notes:

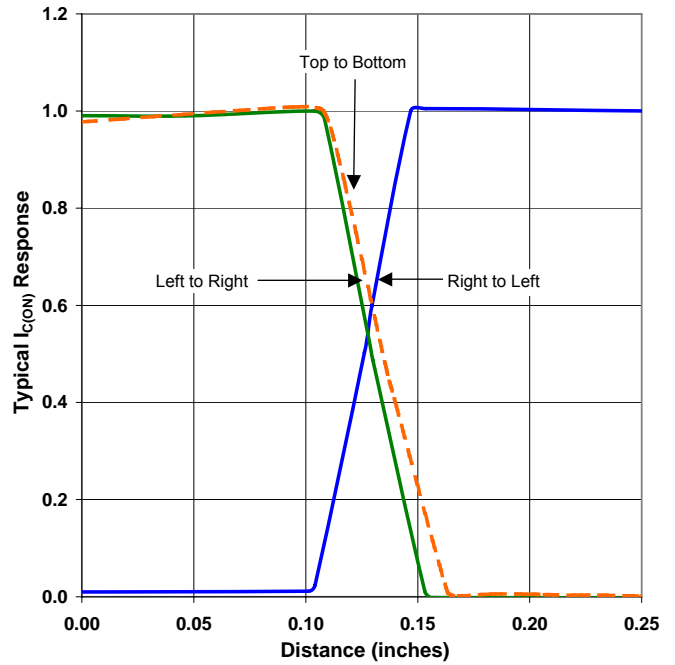
- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly 1.67 mW/°C above 25 ° C.
- (3) All parameters tested using pulse techniques.
- (4) Lead spacing of 0.220" (5.59 mm) or 0.320" (8.13 mm) is available. Leads are 0.20" sq. (5.08 mm) and 0.425" (10.80 mm) long (min).
- (5) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.
- (6) Polarity is denoted by color of housing top (gray or clear LED, black sensor).

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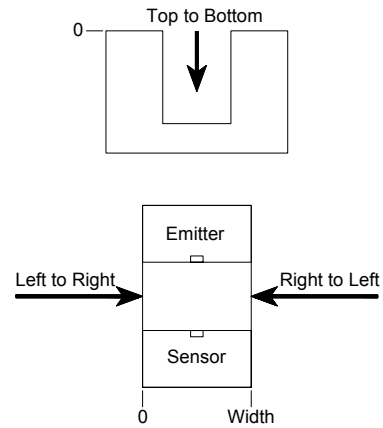
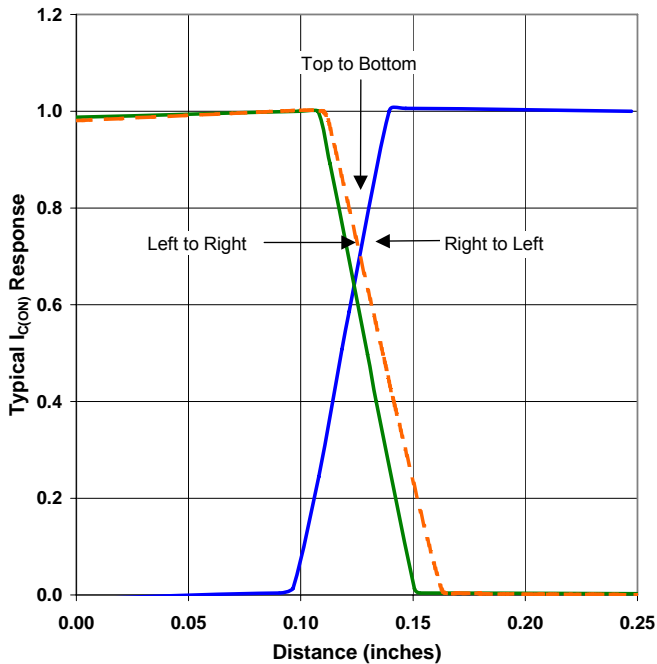
OPB857Z - Flag Next to Emitter



OPB817Z - Flag Next to Sensor



OPB857Z - Flag in Middle of Slot



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