

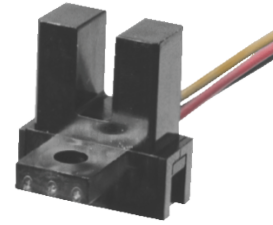
# Slotted Optical Switch

OPB857Z



## Features:

- Three wires for economy in electrical connection
- Water resistant, no optical openings in upper plastic body
- Internal narrow aperture for high motion resolution



## Description:

OPB857Z is a non-contact optical switch with a NPN silicon phototransistor and infrared Light Emitting Diode (LED) which are mounted on opposite sides of a 0.150" ( 3.8 mm) wide slot.

The device upper body is a single molded piece IR transparent plastic that is tinted to reduce ambient light interference and offers water resistance as well as dirt/dust protection. The phototransistor has a internal aperture that offers good optical resolution. LED emissions are near-infrared (850 – 940nm).

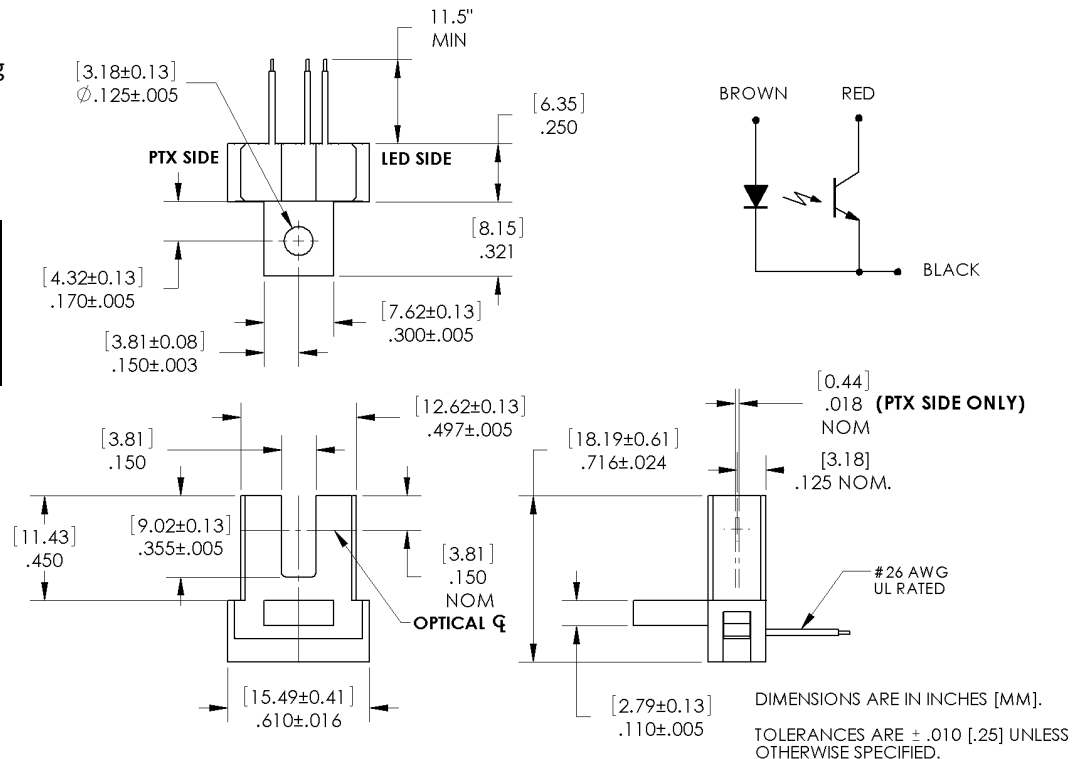
## Applications:

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

Wire Color	Description
Red	Collector
Brown	Anode
Black	Common



RoHS



## Notes:

- (1) Wire is 26AWG, UL Rated PVC insulation.
- (2) Ideal torque for bolt or screw 0.45 to 0.68 Nm ( 4 to 6 Lb-in ).
- (3) When using a thread lock compound, ND Industries "ND Vibra-Tite" Formula 3" will avoid stress cracking plastic.
- (4) Plastic is soluble in chlorinated hydrocarbons and ketones. Methanol or isopropanol are recommended as cleaning agents.

## 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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### Electrical Specifications

#### Absolute Maximum Ratings

Storage & Operating Temperature Range	-40°C to +80° C
<b>Input Diode</b>	
Input Diode Power Dissipation	100 mW <sup>(5)</sup>
Input Diode Forward D.C. Current, $T_A = 25^\circ\text{C}$	50 mA <sup>(5)</sup>
Input Diode Peak Forward Pulse Current, $T_A = 25^\circ\text{C}$ (1µs pulse width, 300pps)	1 A
Input Diode Reverse D.C. Voltage, $T_A = 25^\circ\text{C}$	2 V
<b>Phototransistor</b>	
Power Dissipation	100 mW <sup>(5)</sup>
Collector - Emitter Voltage	30V
Emitter - Collector Voltage	5.0V

#### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ )

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	-	-	1.70	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	$I_C = 1 \text{ mA}, E_E = 0$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0	-	-	V	$I_E = 100 \text{ µA}, E_E = 0$
$I_{CEO}$	Collector Dark Current	-	-	100	nA	$V_{CE} = 10 \text{ V}, I_F = 0, E_E = 0$

#### Coupled

$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	-	-	0.40	V	$I_C = 1.50 \text{ mA}, I_F = 20 \text{ mA}$
$I_{C(ON)}$	On-State Collector Current	1.5	-	17.0	mA	$V_{CE} = 10 \text{ V}, I_F = 20 \text{ mA}$

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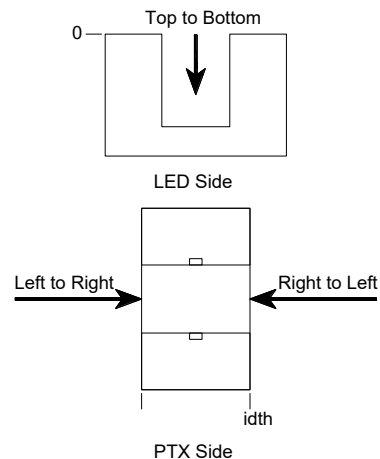
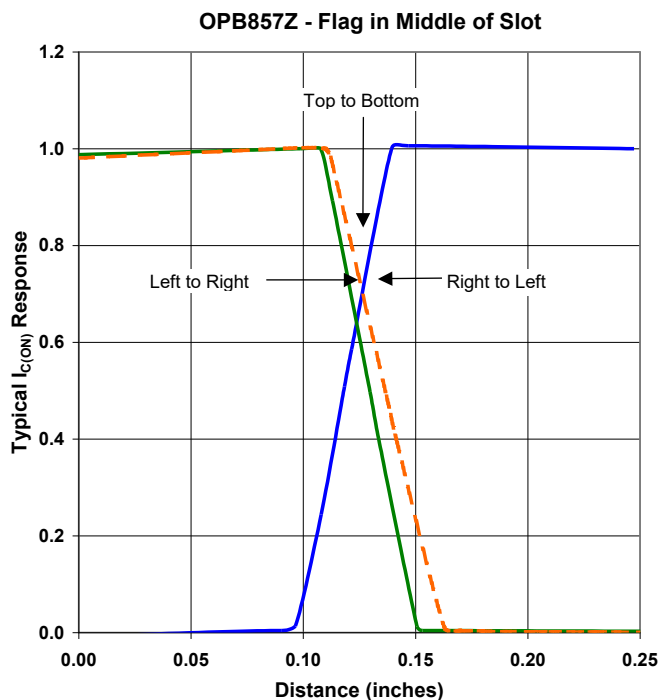
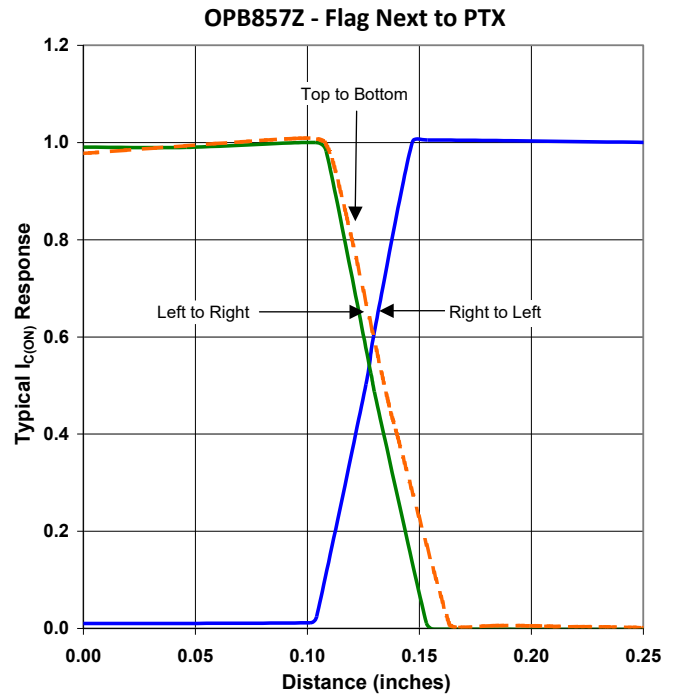
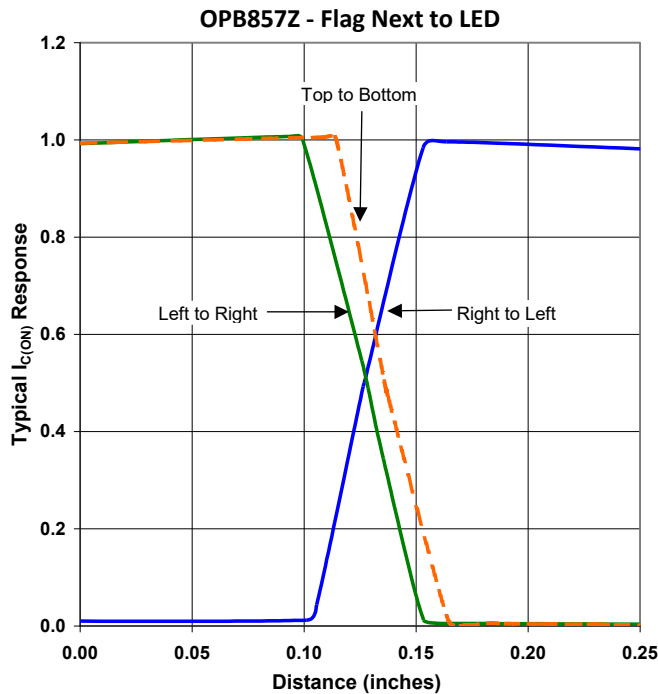
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## Performance



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