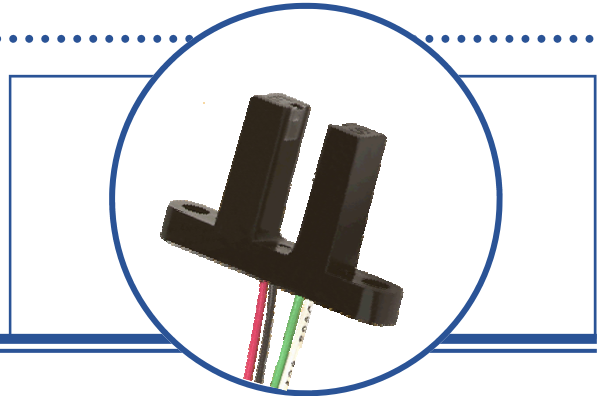


# Slotted Optical Switch OPB817Z



## Features:

- 0.20" (5.08 mm) wide gap, 0.86" (21.84 mm) deep slot
- 24" (609 mm) 26 AWG wires
- Dust protection
- Two mounting tabs



## Description:

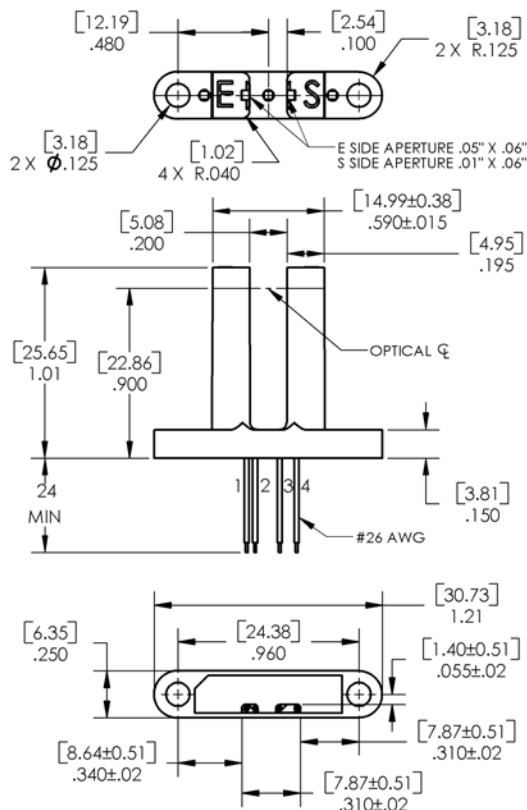
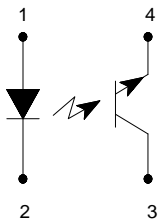
The **OPB817Z** slotted switch consists of an infrared emitting diode and a NPN silicon phototransistor mounted in an opaque housing with clear windows for dust protection. Switching of the phototransistor occurs whenever an opaque object passes through the slot.

The **OPB817Z** has an 0.86" (21.844 mm) deep slot allowing for a longer reach of the optical center line from the mounting plane. The phototransistor internal apertures are 0.10" x 0.06" (0.25 mm x 1.52 mm) on the sensor side ("S") and 0.05" x 0.06" (1.27 mm x 1.52 mm) on the emitter side ("E").

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

## Applications:

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



Ordering Information	
Part Number	Description
OPB817Z	Slotted switch

Color/	Description
Red-1	Anode
Black-2	Cathode
White-3	Collector
Green-4	Emitter

DIMENSIONS ARE IN INCHES AND [MILLIMETERS].



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 +85° C
Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron] <sup>(1)</sup>	260° C

**Input Diode**

Forward DC Current	50 mA
Peak Forward Current (1 $\mu\text{s}$ pulse width, 300 pps)	3 A
Reverse DC Voltage	2 V
Power Dissipation <sup>(2)</sup>	100 mW

**Output Phototransistor**

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector DC Current	30 mA
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
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**Input Diode** (see OP140 for additional information)

$V_F$	Forward Voltage	-	-	1.8	V	$I_F = 20 \text{ mA}$
$I_R$	Reverse Current	-	-	100	$\mu\text{A}$	$V_R = 2 \text{ V}$

**Output Phototransistor** (see OP552 for additional information)

$V_{(BR)(CEO)}$	Collector-Emitter Breakdown Voltage	30	-	-	V	$I_C = 1 \text{ mA}, I_F = 0, E_E = 0$
$V_{(BR)(ECO)}$	Emitter-Collector Breakdown Voltage	5	-	-	V	$I_E = 100 \mu\text{A}, I_F = 0, E_E = 0$
$I_{CEO}$	Collector-Emitter Leakage Current	-	-	100	nA	$V_{CE} = 10 \text{ V}, I_F = 0, E_E = 0$

**Coupled**

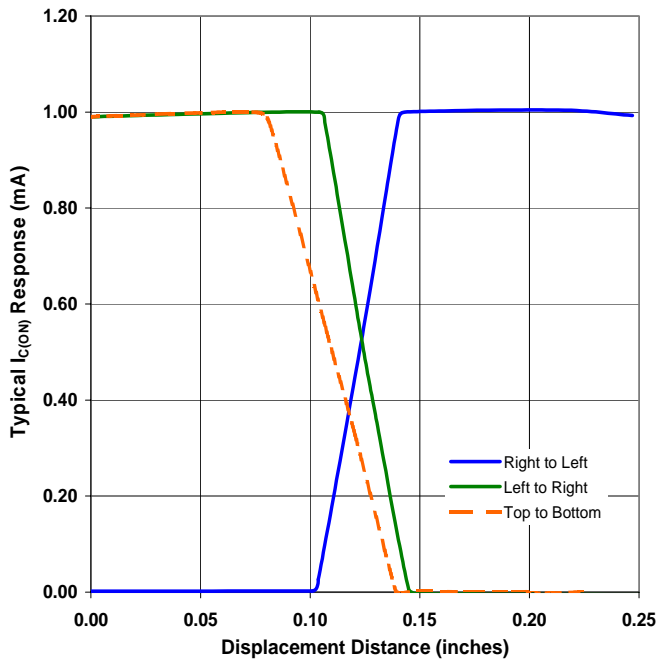
$I_{C(ON)}$	On-State Collector Current	1.0	-	10.0	mA	$V_{CE} = 5 \text{ V}, I_F = 20 \text{ mA}$
$V_{CE(SAT)}$	Collector-Emitter	-	-	0.4	V	$I_C = 100 \mu\text{A}, I_F = 20 \text{ mA}$

Notes:

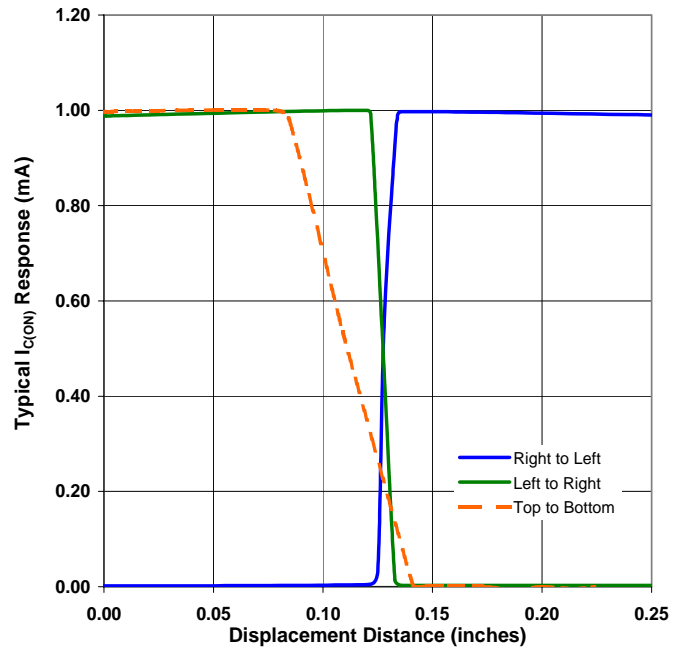
- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly 1.67 mW/°C above 25° C.
- (3) All parameters were tested using pulse techniques.
- (4) Lead spacing of 0.220" (5.59 mm) or 0.320" (8.13 mm) is available. Leads are 0.20" square (5.08 mm) and 0.425" long (10.80 mm), which is the minimum.
- (5) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones. Spray and wipe; do not submerge.
- (6) Polarity is denoted by color of housing top: LED (gray or clear), sensor (black).
- (7) Clear dust protection.

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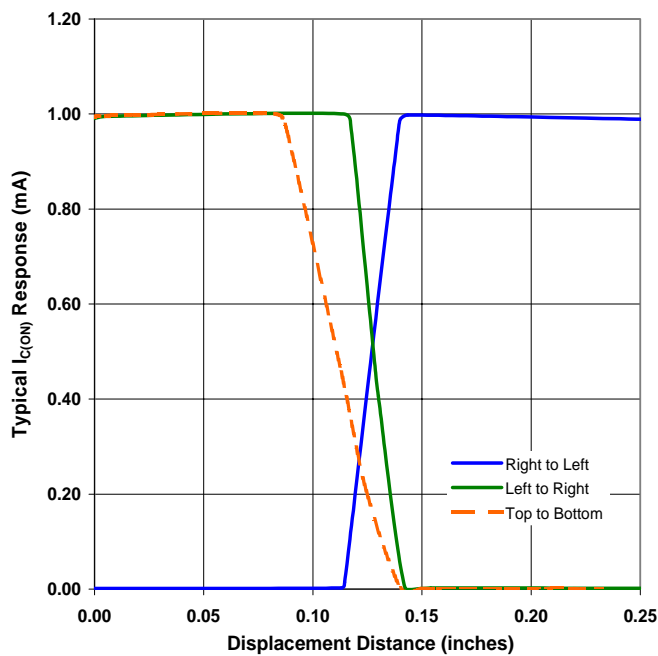
OPB817Z - Flag Next to Emitter



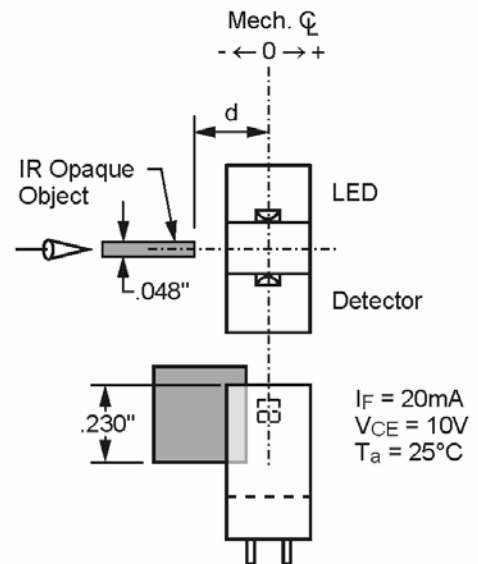
OPB817Z - Flag Next to Sensor



OPB817Z - Flag in Middle of Slot



Test Schematic



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