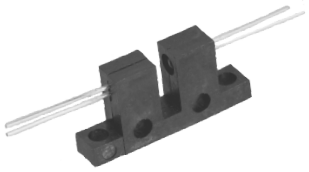
Slotted Optical Switch

OPB806

Features:

- Non-contact switching
- Base or side mounting
- 0.125” (3.175 mm) slot width



Description:

The OPB806 slotted optical switch consists of an infrared emitting diode (LED) and a NPN silicon phototransistor, mounted on opposite sides of a 0.125” (3.175 mm) wide slot.

The OPB806 has two sets of mounting tabs allowing Base or Side mounting of the device. The LED and phototransistor leads project from each side of the housing on 0.050” (1.27 mm) centers.

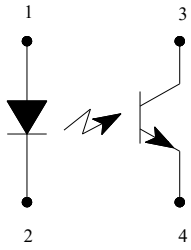
Phototransistor switching takes place whenever an opaque object passes through the slot.

RoHS

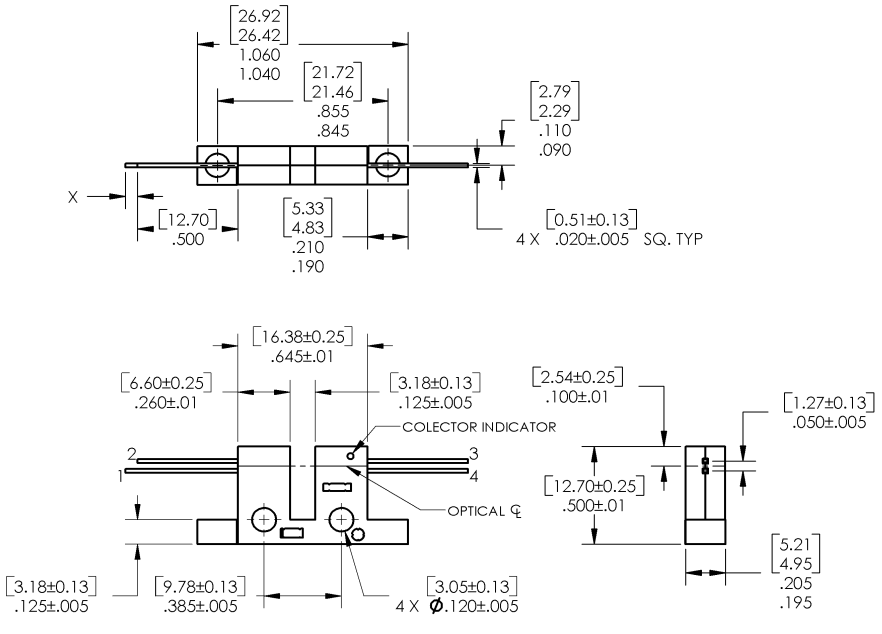
Applications:

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

Part Number	LED Peak Wavelength	Sensor	Slot Width / Depth	Aperture	Lead Length
OPB806	935 nm	Transistor	0.125" / 0.375”	None	0.500"



Pin #	Description
1	Anode
2	Cathode
3	Collector
4	Emitter



DIMENSIONS ARE IN: [MILLIMETERS] INCHES

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Electrical Specifications

Absolute Maximum Ratings (T_A=25°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] (1)	260° C

Input Diode

Continuous Forward Current	50 mA
Peak Forward Current (1 µs pulse width, 300 pps)	3 A
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 Diode (See OP165 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 OP505 for additional information)						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	-	-	V	I_C = 100 µA
$V_{(BR)ECO}$	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
Combined						
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	-	-	0.5	V	I_C = 200 µA, I_F = 20 mA
$I_{C(ON)}$	On-State Collector Current	0.4	-	-	mA	V_{CE} = 0.5 V, I_F = 20 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) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.
(4) All parameters were tested using pulse technique.

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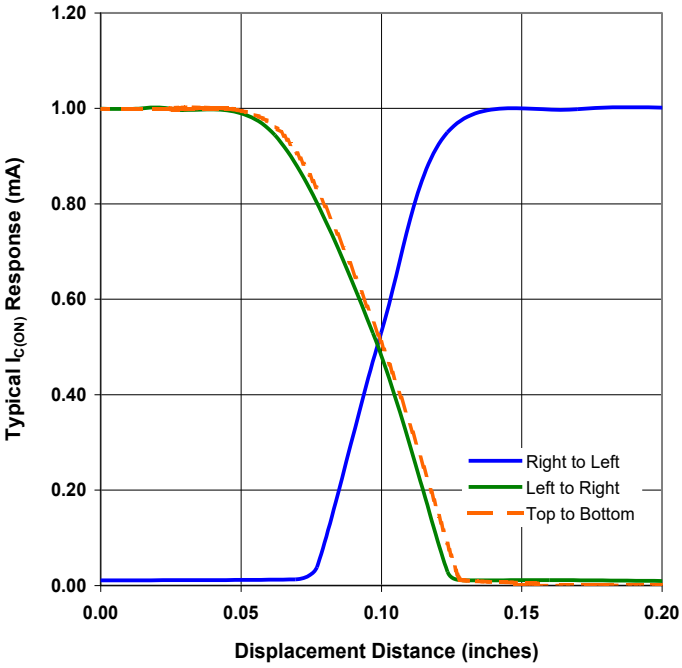
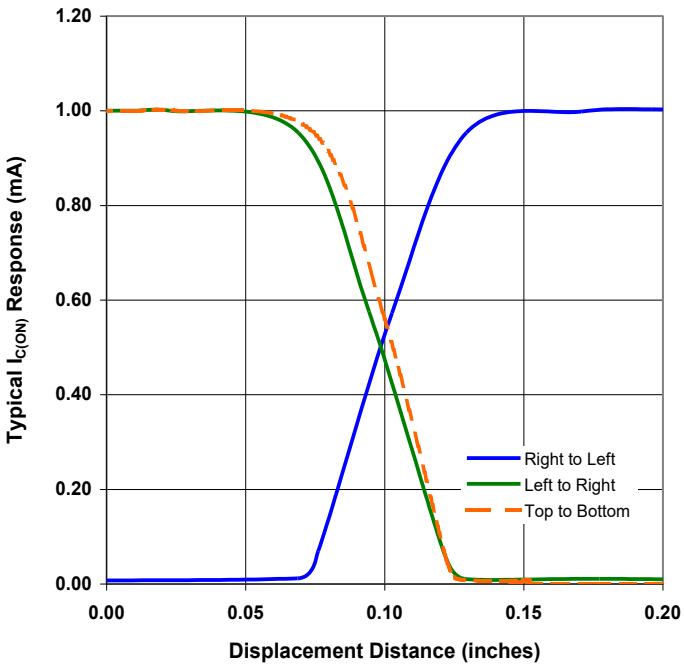
Performance

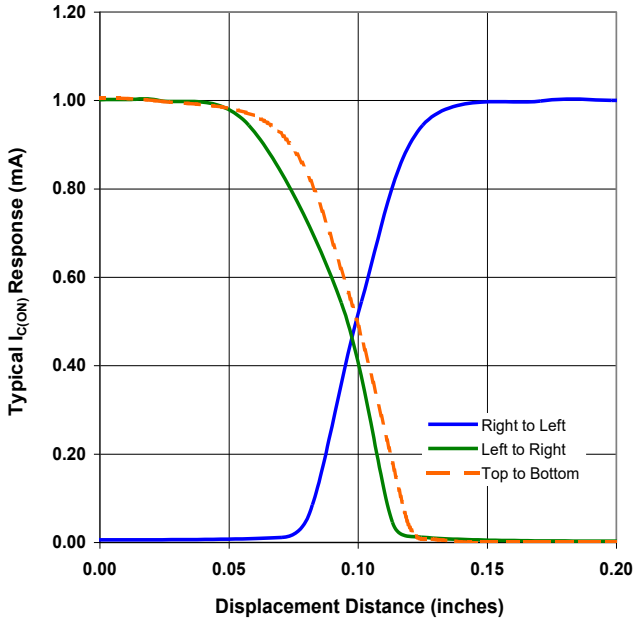
OPB806 - Flag Next to Emitter



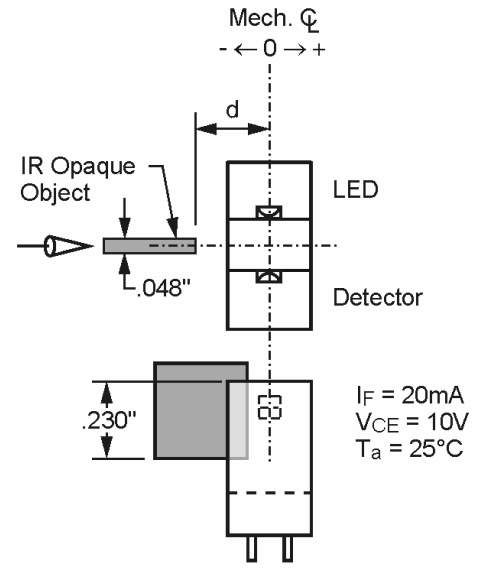
OPB806 - Flag Next to Sensor



OPB806 - Flag in Middle of Slot



Test Schematic



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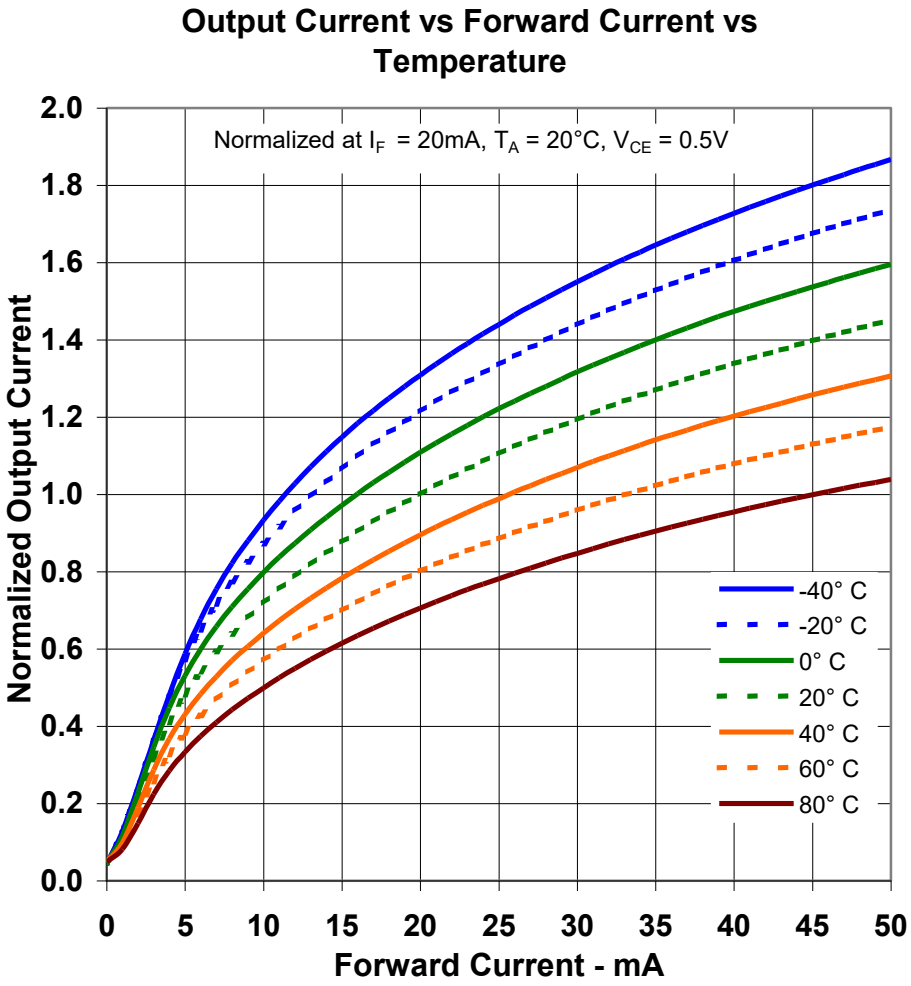

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