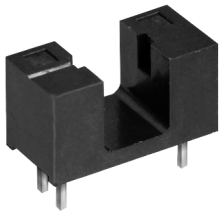
Slotted Optical Switch

OPB855

Features:

- Low profile 0.27” (6.86 mm) overall height
- Printed PCBoard mounting
- 0.205” (5.21 mm) wide and 0.220 (5.59 mm) deep slot
- 0.380” (9.65 mm) lead spacing
- Opaque plastic housing

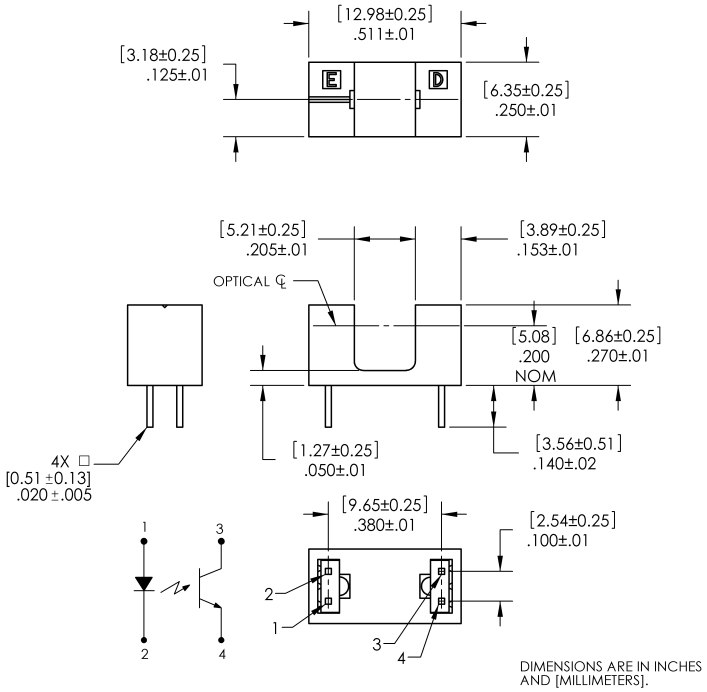


Description:

The OPB855 slotted optical switch consists of an infrared emitting diode and a NPN silicon phototransistor, mounted on opposite sides of a 0.205” (5.21 mm) wide slot in an inexpensive plastic housing. Switching of the phototransistor occurs whenever an opaque object passes through the slot.

Applications:

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



Pin #	Description
1	Anode
2	Cathode
3	Collector
4	Emitter

RoHS

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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 (See OP140 for additional information)

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

Output Phototransistor (See OP550 for additional information)

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector DC Current	30 mA
Power Dissipation[(2)]	100 mW

Electrical Characteristics (T_A = 25°C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
V_F	Forward Voltage	-	1.30	1.80	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
Combined						
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	-	-	0.4	V	I_C = 400 µA, I_F = 20 mA
$I_{C(ON)}$	On-State Collector Current	1.50	-	20.0	mA	V_{CE} = 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 tested using pulse technique.

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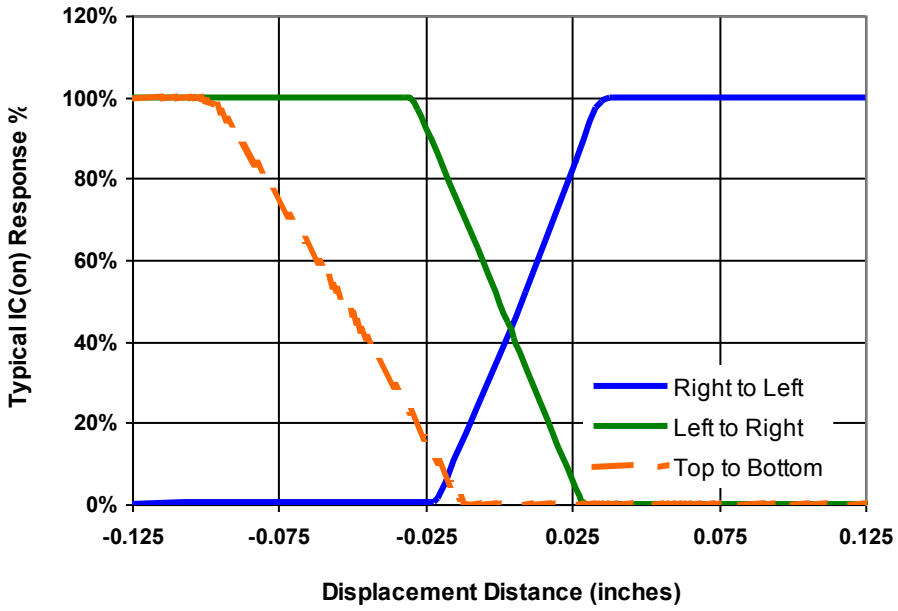
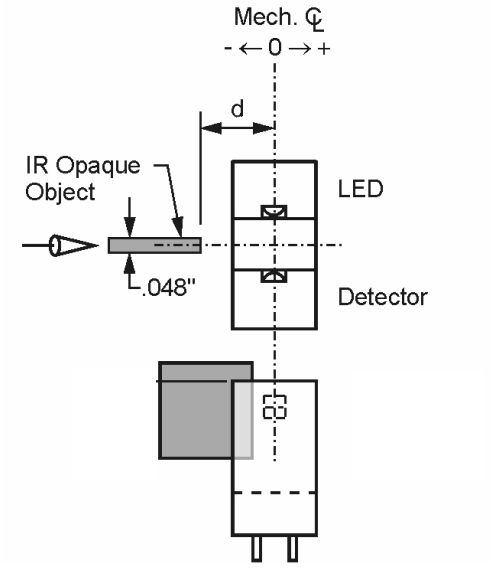
OPB855 - Flag in Middle of Slot



Test Schematic



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