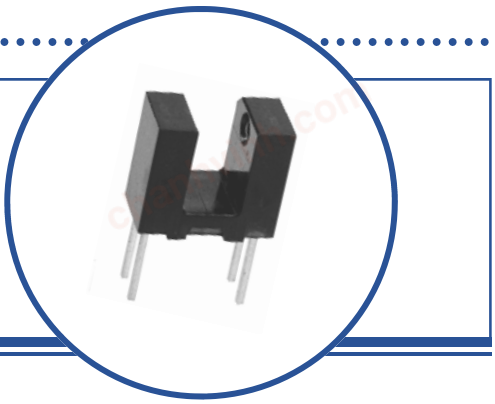
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Slotted Optical Switch
OPB610, OPB611, OPB620, OPB621

TT electronics
OPTEK Technology



Features:

- Non-contact switching
- Printed circuit board mounting
- Enhanced signal to noise ratio
- PIN photodiode sensor for high speed (OPB611, OPB621)
- Lead centers: 0.275” (OPB61_) / 0.320” (OPB62_)
- Gap: 0.150” (OPB61_) / 0.190” (OPB62_)

Description:

The **OPB610** and **OPB620** slotted optical switches consist of an infrared emitting diode and an NPN silicon phototransistor with an enhanced low current roll-off to improve contrast ratio and immunity to background irradiance.

The **OPB611, OPB621** slotted optical switch consists of an infrared emitting diode and a PIN photodiode with a polysulfone housing that is opaque to visible light, but transmissive to infrared. The low t_r/t_f of the PIN photodiode is ideal for high-speed operation. The sensitivity to ambient radiation is minimized.

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

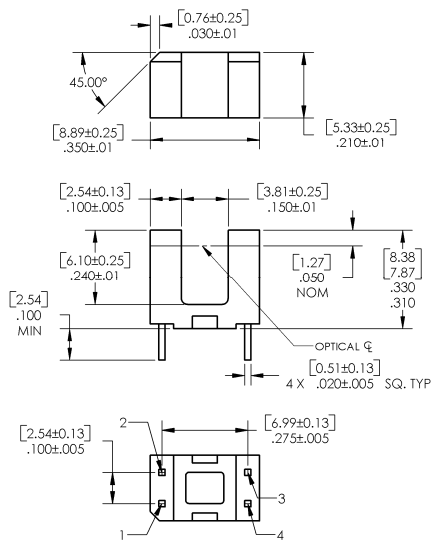
Applications:

- Non-contact reflective object sensor
- Assembly line automation
- Machine automation
- Machine safety
- End of travel sensor
- Door sensor

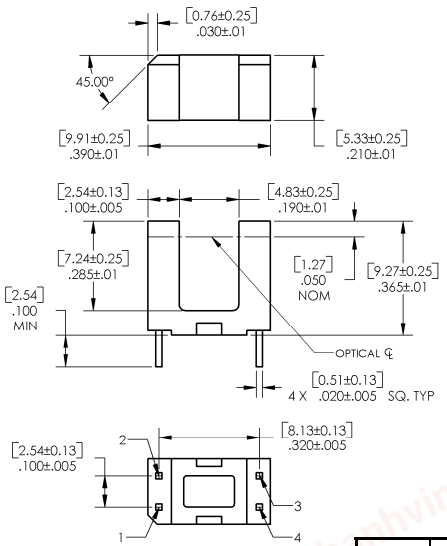
Ordering Information

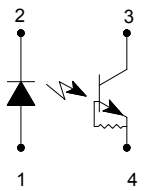
Part Number	LED Peak Wavelength	Sensor	Slot Width / Depth	Aperture Emitter / Sensor	Lead Length / Spacing
OPB610	890 nm	Rbe Transistor	0.150" / 0.240”	0.06” / 0.06”	0.100" / 0.275"
OPB611		Diode			
OPB620		Rbe Transistor	0.190" / 0.285”		0.100" / 0.320"
OPB621		Diode			

OPB610, OPB611

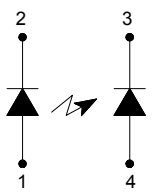


OPB620, OPB621





OPB610, OPB620



OPB611, OPB621

Pin #	LED	Pin #	Transistor / Diode
1	Anode	4	Emitter / Anode
2	Cathode	3	Collector / Cathode

DIMENSIONS ARE IN: [MILLIMETERS] INCHES

RoHS

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

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Slotted Optical Switch
OPB610, OPB611, OPB620, OPB621

TT electronics
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Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Storage and Operating Temperature Range	-40°C to +100° 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	3 V
Power Dissipation(2)	100 mW

Output Photodiode (OPB621)

Reverse Breakdown Voltage	60 V
Power Dissipation	100 mW

Output Phototransistor (OPB610, OPB620)

Collector-Emitter Voltage	24 V
Emitter-Collector Voltage	10 mA
Collector DC Current	30 mA
Power Dissipation(3)	200 mW

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

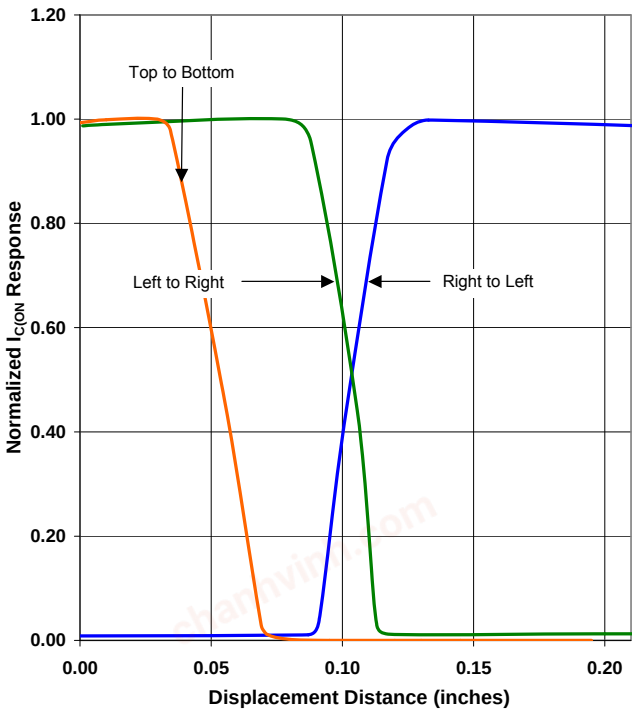
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode (See OP240 for additional information)						
V_F	Forward Voltage OPB610, OPB620 OPB621	 - 1.15	 - -	 1.6 1.45	 V V	 I_F = 10 mA I_F = 10 mA
I_R	Reverse Current	-	-	100	µA	V_R = 3 V
Output Phototransistor (OPB610, OPB620) (See OP505 for additional information)						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	24	-	-	V	I_C = 100 µA
BV_{ECO}	Emitter-Collector Breakdown Voltage	0.4	-	-	V	I_{CE} = 100 µA
I_{CEO}	Collector-Emitter Dark Current	-	-	100	nA	V_{CE} = 5 V
Output Photodiode (OPB611, OPB621) (See OP999 for additional information)						
I_D	Dark Current	-	-	65	nA	V_R = 30 V, E_E = 0 mW
$V_{(BR)R}$	Reverse Breakdown Voltage	60	-	-	V	IR = 100 µA, E_E = 0 mW
V_F	Forward Voltage	-	-	1.0	V	I_F = 1 mA, E_E = 0 mW
Combined						
V_{SAT}	Collector-Emitter Saturation Voltage OPB610, OPB620	-	-	0.4	V	I_F = 5 mA, I_C = 100 µA
$I_{C(ON)}$	On-State Collector/Diode Current OPB610, OPB620 OPB611, OPB621	 1 9	 - -	 - 90	 mA µA	 I_F = 5 mA, V_{CE} = 5 V (gap unblocked) V_R = 5 V, I_F = 20 mA (gap unblocked)

Notes:
(1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering. A maximum of 20 grams force may be applied to leads when soldering.
(2) Derate linearly 1.33 mW/°C above 25 ° C.
(3) Derate linearly 2.0 mW/°C above 25 ° C.
(4) Plastic body is soluble in chlorinated hydrocarbons and keytones. It is recommended that a trial exposure to flux & cleaning chemicals is performed to ensure sensor is not damaged.

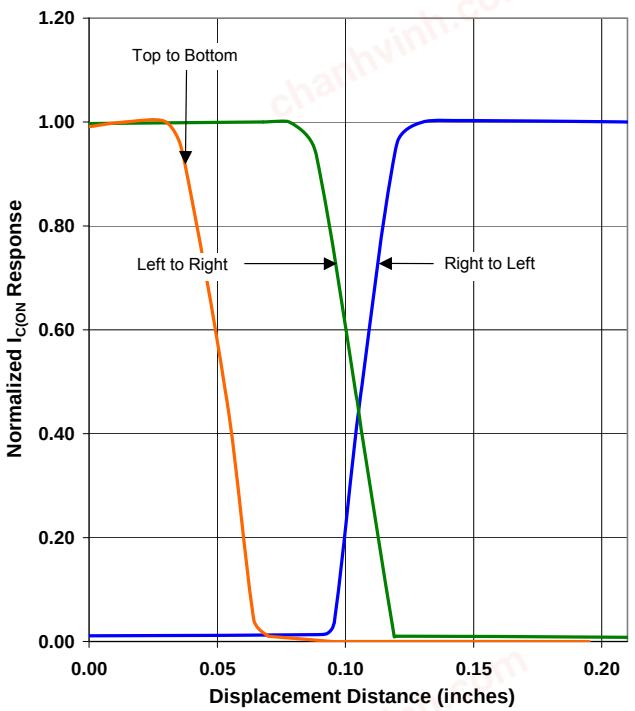
OPTEK Technology Inc. — 1645 Wallace Drive, Carrollton, Texas 75006
Phone: (972) 323-2200 or (800) 341-4747 FAX: (972) 323-2396 sensors@optekinc.com www.optekinc.com

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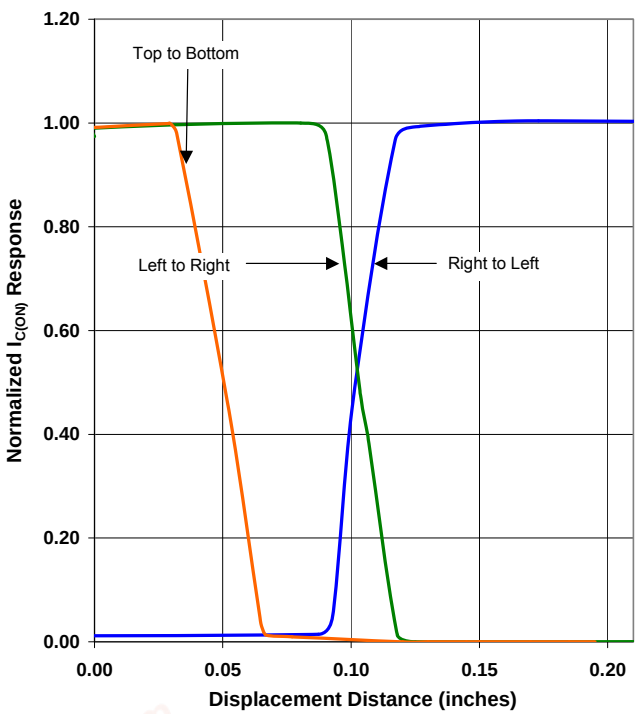
OPB610 - Flag Next to Emitter

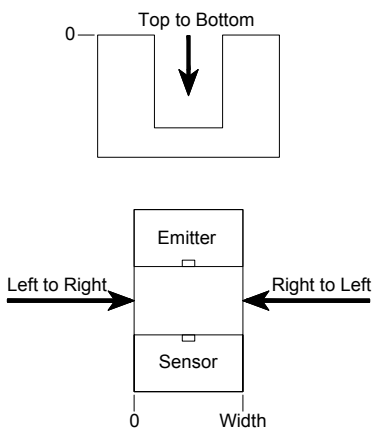


OPB610 - Flag Next to Sensor



OPB610 - Flag in Middle of Slot

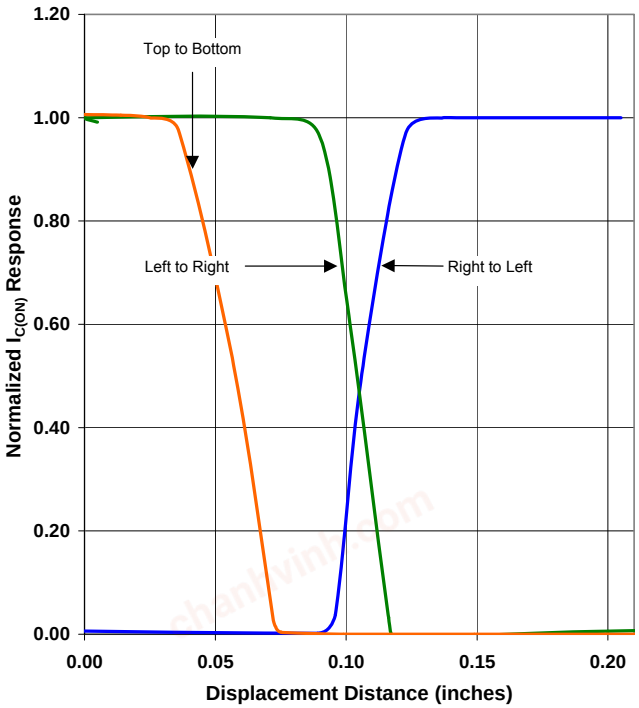




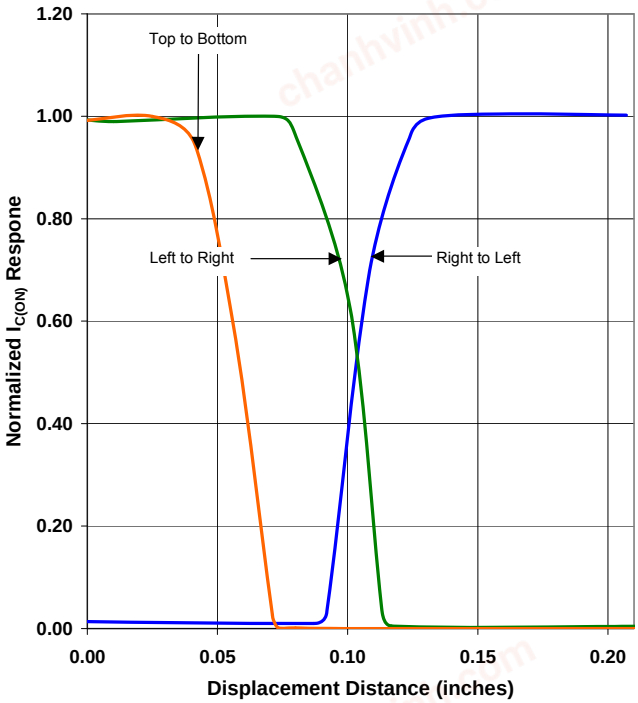
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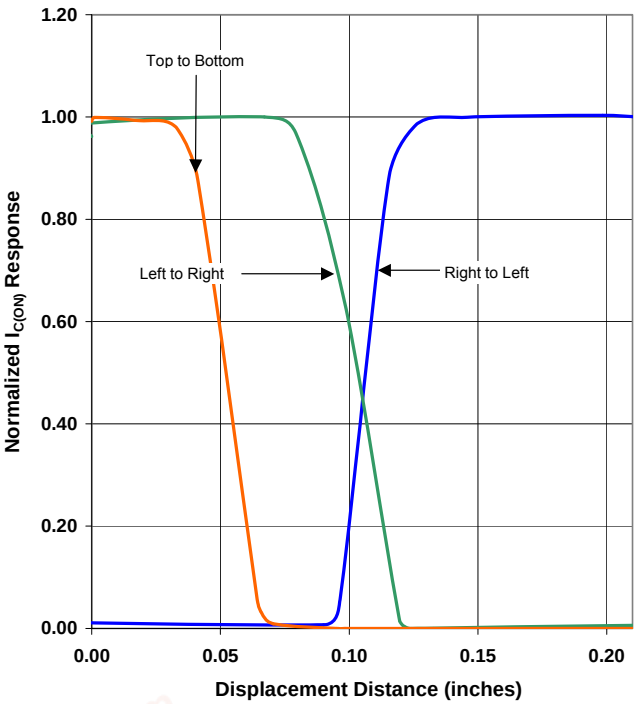
OPB620 - Flag Next to Emitter

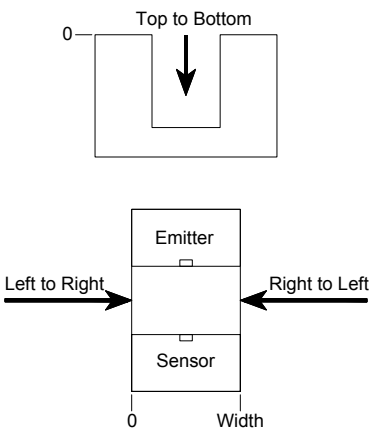


OPB620 - Flag Next to Sensor



OPB620 - Flag in Middle of Slot





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