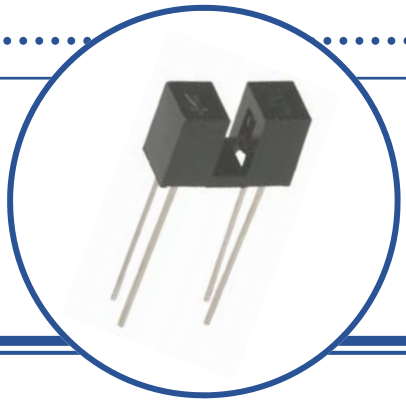
Slotted Optical Switch
OPB202

TT electronics
OPTEK Technology



Features:

- Opaque housing
- Inexpensive plastic housing
- 0.110” (2.79 mm) gap small profile slotted switch
- Customization available

Description:

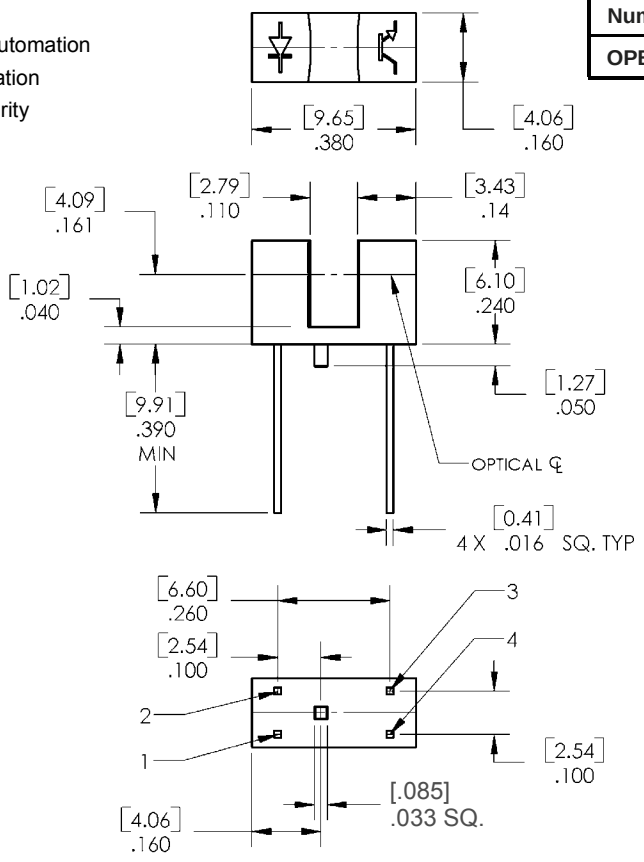
OPB202 consists of an infrared Light Emitting Diode (LED) and an NPN silicon phototransistor mounted on opposite sides of a 0.110 (2.79 mm) slot in an opaque plastic housing. Switching of the phototransistor occurs whenever an opaque object to light wave lengths between 400nm and 1100 nm passes through the slot. The lens on both the LED and phototransistor is 0.6” [1.5 mm] in diameter resulting in an equivalent aperture of 0.6” [1.5 mm].

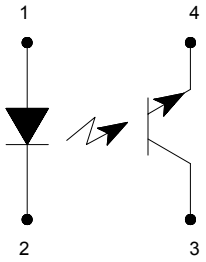
Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

Applications:

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

Ordering Information			
Part Number	**LED Peak Wavelength**	**Sensor**	**Aperture Emitter/Sensor**
OPB202	940 mm	Transistor	.06 [1.5] / .06 [1.5]





Pin #	Description
1	Anode
2	Cathode
3	Collector
4	Emitter

DIMENSIONS ARE IN INCHES AND [MILLIMETERS].

TOLERANCES ARE ±.01 [0.25].

Pb
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°C unless otherwise noted)

Storage & Operating Temperature Range	-25°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

Forward DC Current	50 mA
Peak Forward Current (1 µs pulse width, 300 pps)	1 A
Reverse DC Voltage	2 V
Power Dissipation(2)	75 mW

Output Phototransistor

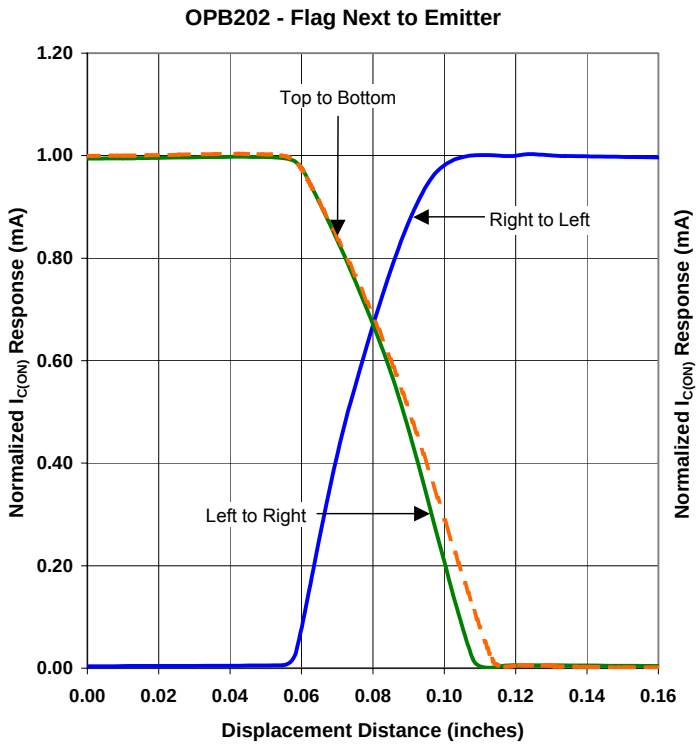
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector DC Current	20 mA
Power Dissipation(2)	100 mW

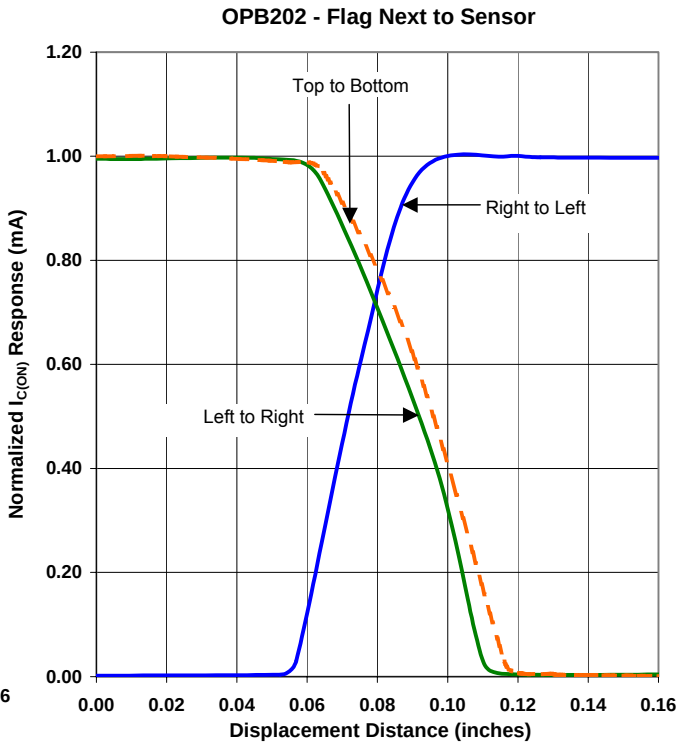
Electrical Characteristics (T_A = 25°C unless otherwise noted)

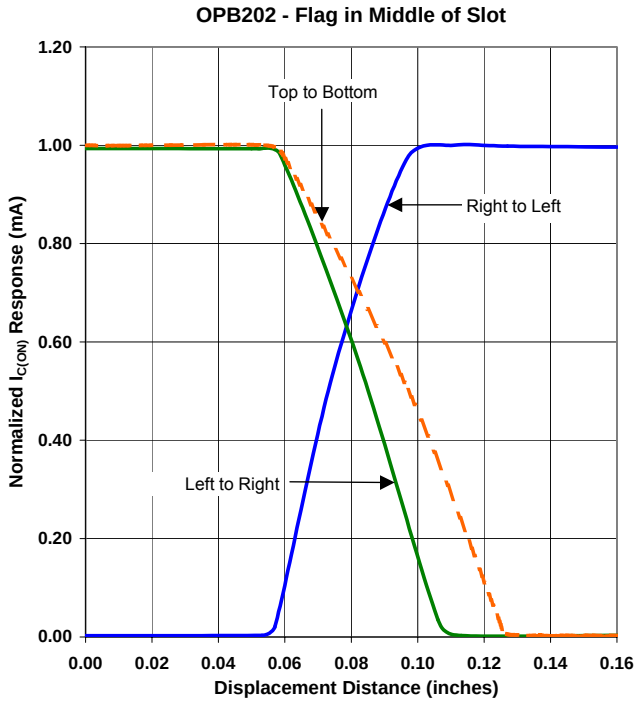
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
V_F	Forward Voltage	-	-	1.6	V	I_F = 20 mA
I_R	Reverse Current	-	-	100	µA	V_R = 2.0 V
Output Phototransistor						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	-	-	V	I_C = 1 mA
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5	-	-	V	I_E = 100 µA
I_{CEO}	Collector Dark Current	-	-	100	nA	V_{CE} = 10 V, I_F = 0, E_E = 0
t_r	Rise Time	-	3	15	µs	V_{CE} = 5 V, I_C = 2 mA, R_L = 100 Ω
t_f	Fall Time	-	4	20	µs	
Combined						
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	-	-	0.4	V	I_C = 2.5 mA, I_F = 20 mA
$I_{C(ON)}$	On-State Collector Current	5.0	-	-	mA	V_{CE} = 5 V, I_F = 20 mA

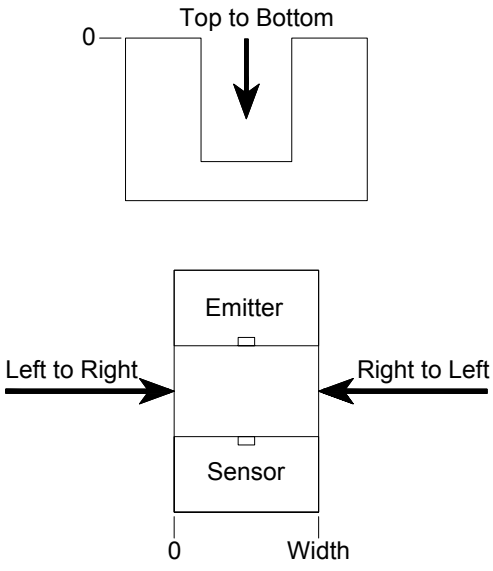
Notes:
(1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
(2) Derate linearly 1.67 mW/°C above 25 ° C.
(3) All parameters tested using pulse techniques.
(4) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.

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

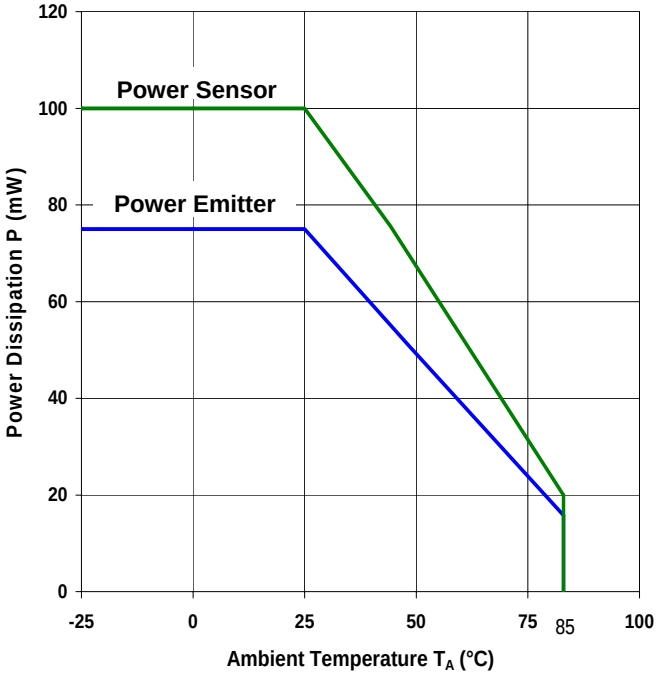




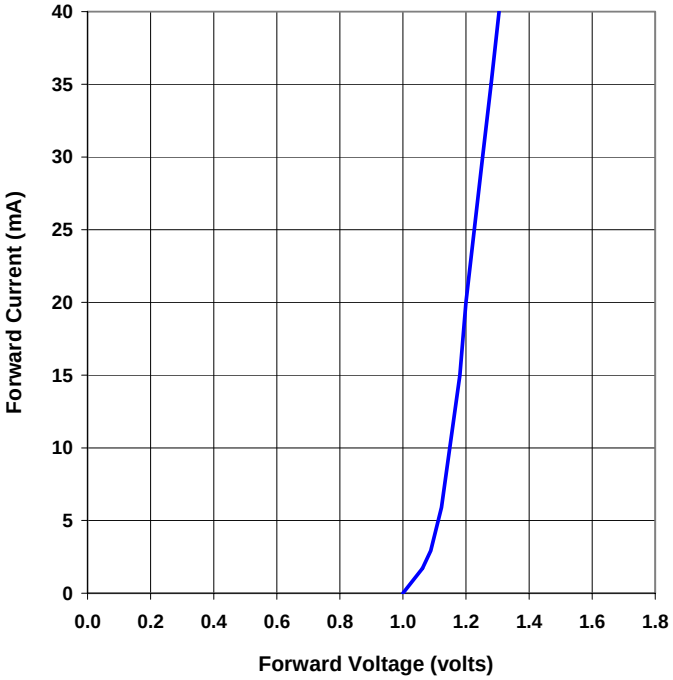




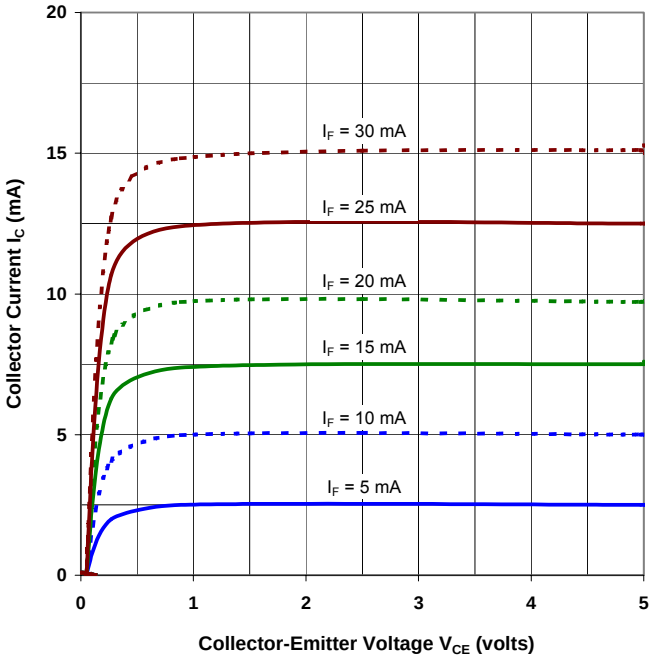
OPB202 - Power Dissipation vs Ambient Temperature



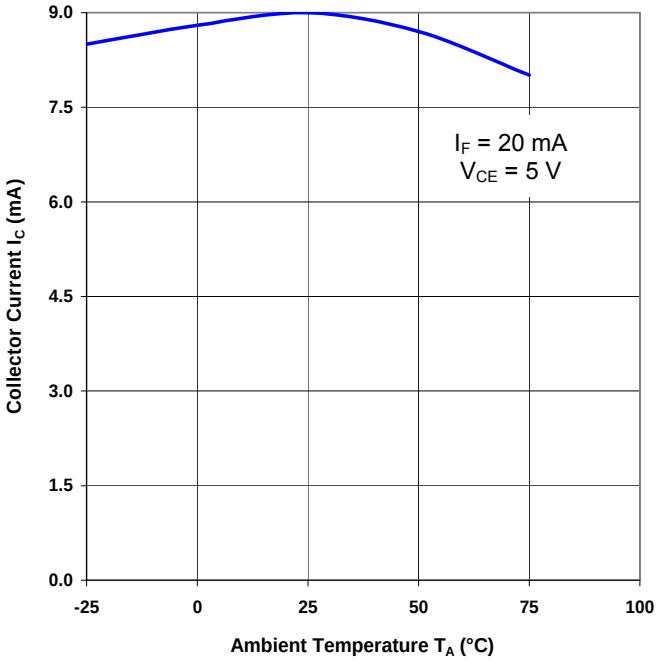
OPB202 - Forward Current vs Forward Voltage



OPB202 - Collector Current vs Collector-Emitter Voltage



OPB202 - Collector Current vs Ambient Temperature



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Response Time vs. Load Resistance