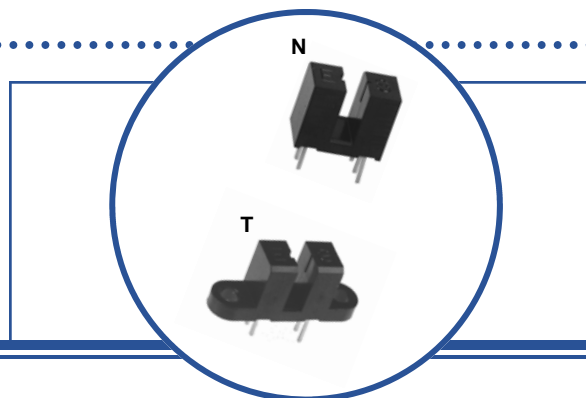


Slotted Optical Switch OPB660N, OPB660T



Features:

- Non-contact switching
- Printed circuit board mounting
- Enhanced signal to noise ratio
- Gap 0.125" (3.18mm) wide and 0.345" (8.76mm) deep slot
- Emitter Aperture 0.05" X 0.06" (1.27mm X 1.52mm),
Sensor Aperture 0.01" X 0.06" (0.25mm X 1.52mm)



Description:

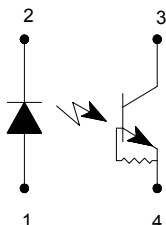
Each **OPB660** slotted optical switch consists of an infrared emitting diode and a NPN silicon phototransistor, combined with an enhanced low current roll-off that improves contrast ratio and provides immunity to background irradiance. Housings are made from an opaque grade of injection-molded plastic to minimize sensitivity to both visible and near-infrared light.

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

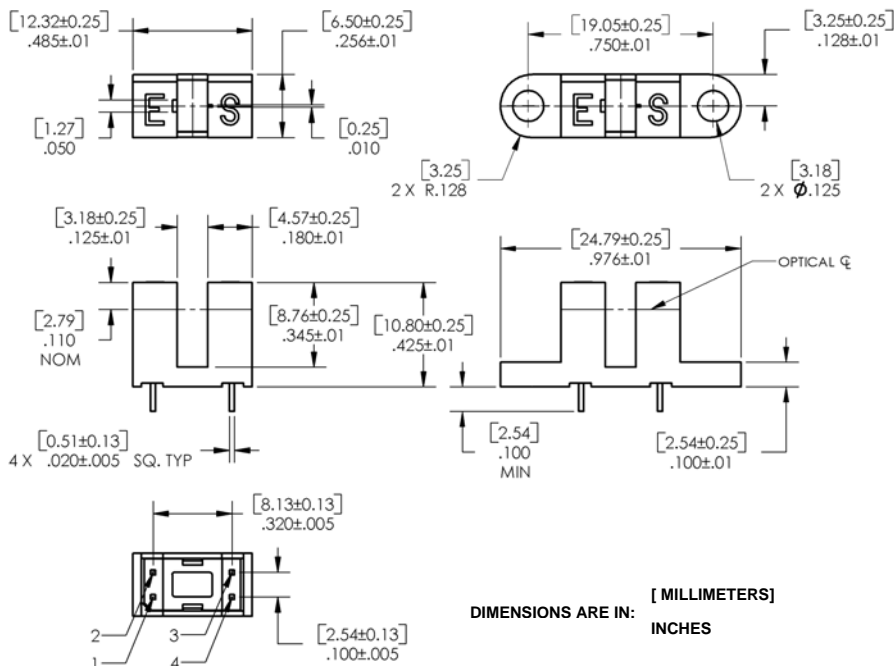
Applications:

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

| Part Number | LED Peak Wavelength | Sensor | Slot Width / Depth | Aperture Emitter/Sensor | Lead Length / Spacing |
|-------------|---------------------|----------------|--------------------|-------------------------|-----------------------|
| OPB660N | 890 nm | Rbe Transistor | 0.125" / 0.345" | 0.05" / 0.01" | 0.100" / 0.320" (MIN) |
| OPB660T | | | | | |



| Pin # | LED | Pin # | Transistor |
|-------|---------|-------|------------|
| 1 | Anode | 3 | Collector |
| 2 | Cathode | 4 | Emitter |



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 +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) | 1 A |
| Reverse DC Voltage | 3 V |
| Power Dissipation ⁽²⁾ | 100 mW |

Output Phototransistor

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

Electrical Characteristics ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|-----------|-----|-----|-----|-------|-----------------|
|--------|-----------|-----|-----|-----|-------|-----------------|

Input Diode

| | | | | | | |
|-------|-----------------|---|---|-----|---------------|-----------------------|
| V_F | Forward Voltage | - | - | 1.6 | V | $I_F = 10 \text{ mA}$ |
| I_R | Reverse Current | - | - | 100 | μA | $V_R = 3 \text{ V}$ |

Output Phototransistor

| | | | | | | |
|---------------|-------------------------------------|-----|---|-----|---------------|----------------------------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | 24 | - | - | V | $I_{CE} = 100 \mu\text{A}$ |
| BV_{ECO} | Emitter Reverse Breakdown Voltage | 0.4 | - | - | V | $I_{EC} = 100 \mu\text{A}$ |
| I_{CEO} | Collector-Emitter Dark Current | - | - | 100 | μA | $V_{CE} = 5 \text{ V}$ |

Combined

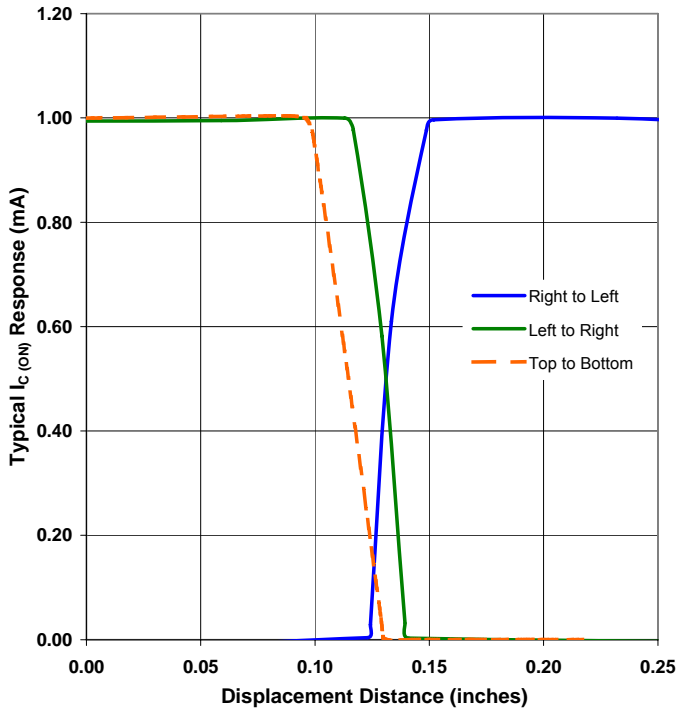
| | | | | | | |
|-------------|--------------------------------------|-----|---|-----|---------------|---|
| V_{SAT} | Collector-Emitter Saturation Voltage | - | - | 0.4 | V | $I_F = 10 \text{ mA}, I_C = 100 \mu\text{A},$ (gap unblocked) |
| $I_{C(ON)}$ | On-State Collector Current | 600 | - | - | μA | $I_F = 10 \text{ mA}, V_{CE} = 5 \text{ V}$ |

Notes:

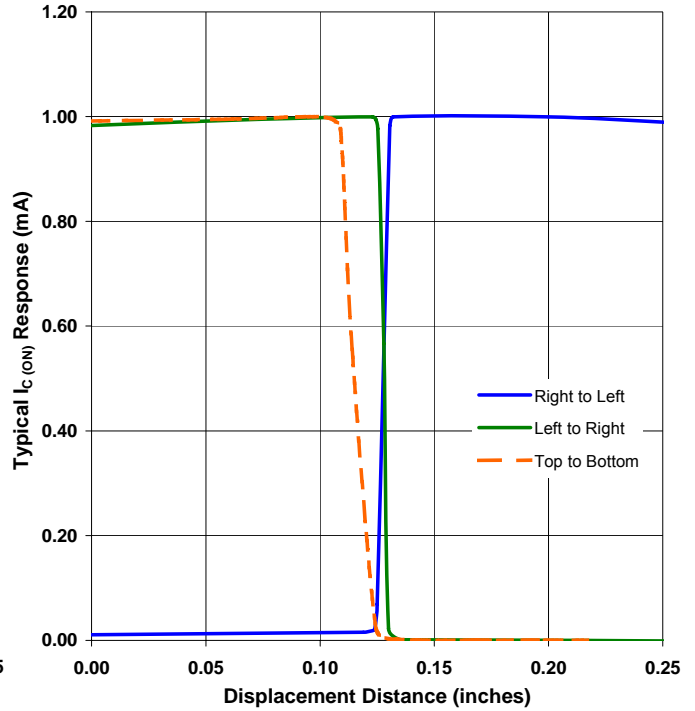
- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering. A maximum of 20 grams force may be applied to leads when soldering.
- (2) Derate linearly 1.33 mW/° C above 25° C.
- (3) Derate linearly 2.0 mW/° C above 25° C.

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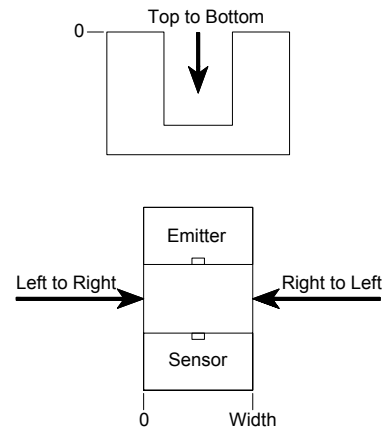
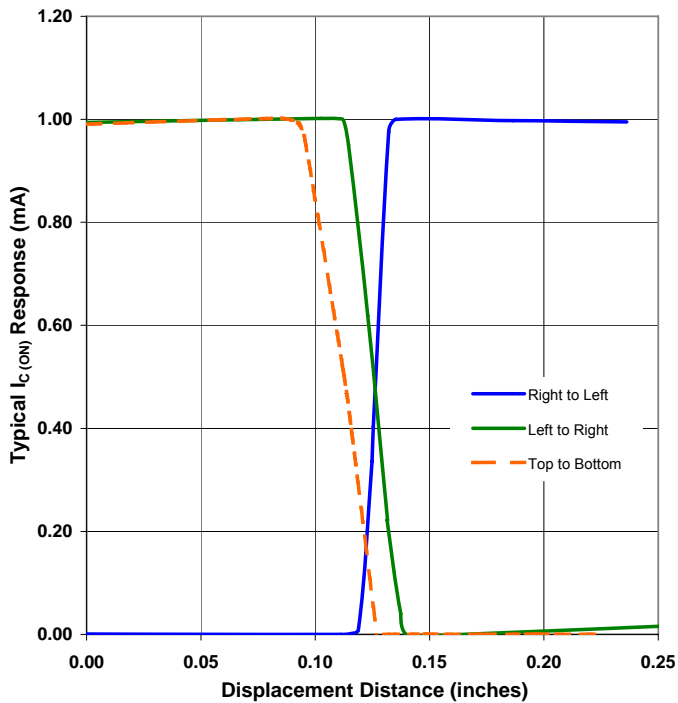
OPB660 - Flag Next to Emitter



OPB660 - Flag Next to Sensor



OPB660 - Flag in Middle of Slot



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