# Slotted Optical Switch

## OPB660N

Obsolete (OPB660T)



### Features:

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

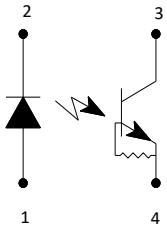
### Description:

The OPB660N 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.

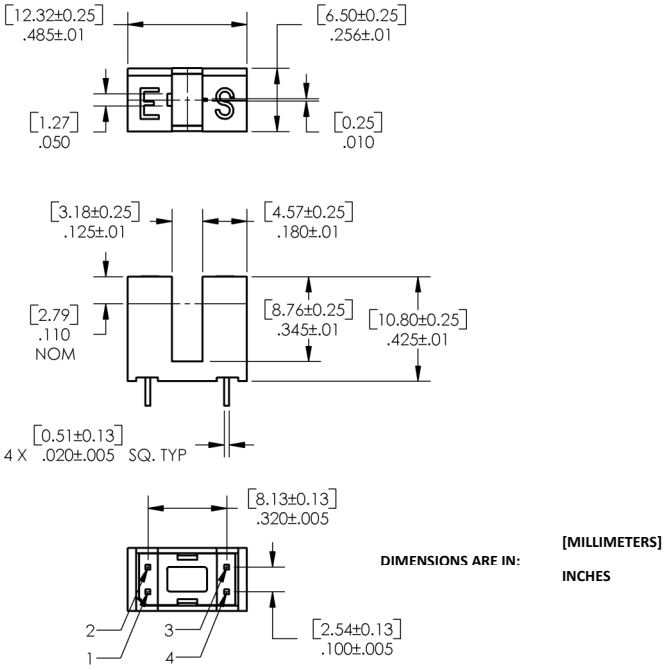
### Applications:

- 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 Obsolete | | | | | |




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




General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics’ own data and is considered accurate at time of going to print.

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## Electrical Specifications

### Absolute Maximum Ratings ($T_A$ = 25° C unless otherwise noted)

| | |
|---|---|
| Storage & Operating Temperature Range | -40° C to +100° C |
| Lead Soldering Temperature [1/16 inch (1.6 mm) 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° C unless otherwise noted)

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---|---|---|---|---|---|---|
| **Input Diode** | | | | | | |
| $V_F$ | Forward Voltage | - | - | 1.6 | V | $I_F$ = 10 mA |
| $I_R$ | Reverse Current | - | - | 100 | µA | $V_R$ = 3 V |
| **Output Phototransistor** | | | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | 24 | - | - | V | $I_{CE}$ = 100 µA |
| $BV_{ECO}$ | Emitter Reverse Breakdown Voltage | 0.4 | - | - | V | $I_{EC}$ = 100 µA |
| $I_{CEO}$ | Collector-Emitter Dark Current | - | - | 100 | µA | $V_{CE}$ = 5 V |
| **Combined** | | | | | | |
| $V_{SAT}$ | Collector-Emitter Saturation Voltage | - | - | 0.4 | V | $I_F$ = 10 mA, $I_C$ = 100 µA, (gap unblocked) |
| $I_{C(ON)}$ | On-State Collector Current | 600 | - | - | µA | $I_F$ = 10 mA, $V_{CE}$ = 5 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.

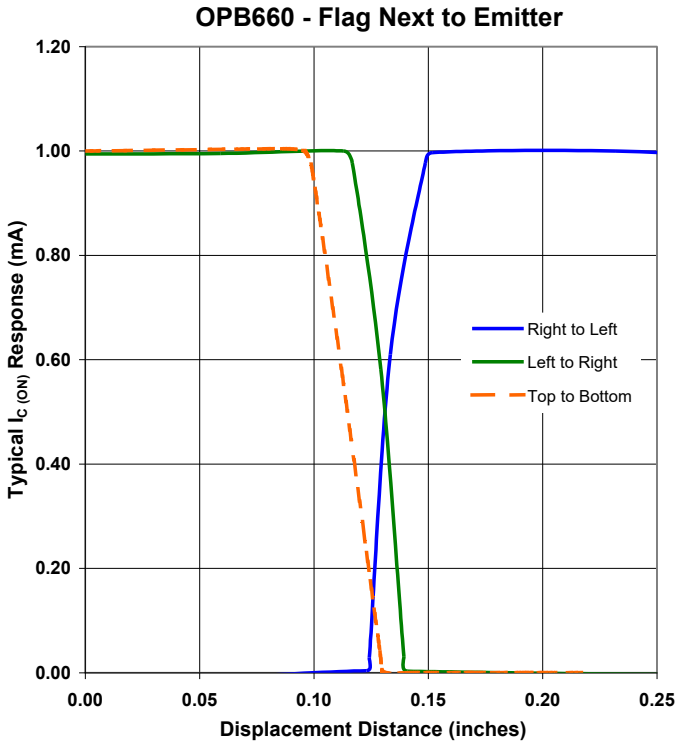
(3) Derate linearly 2.0 mW/° C above 25° C.

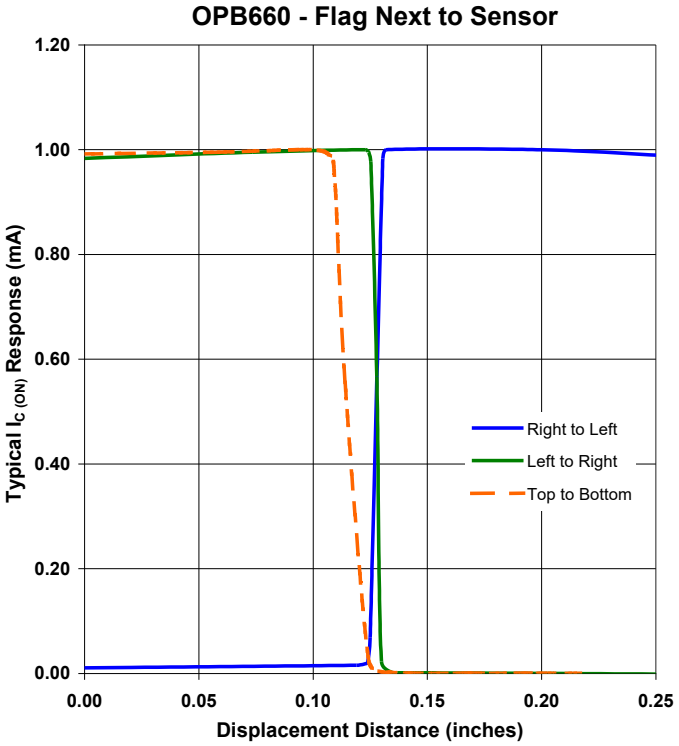

General Note

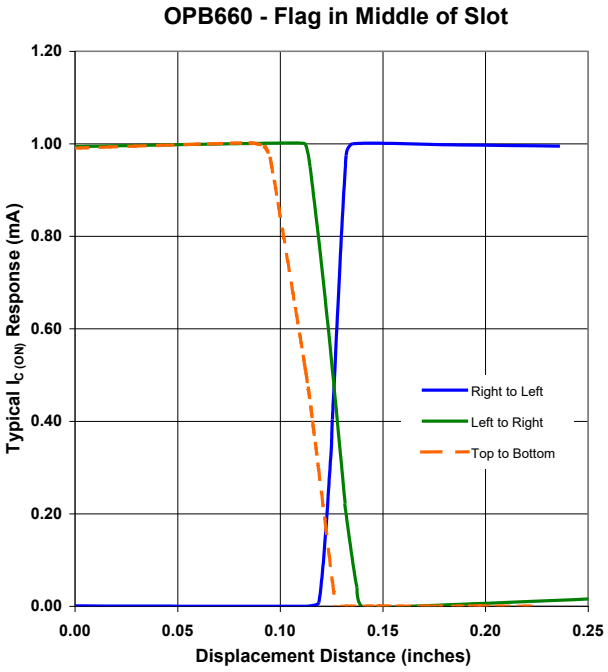
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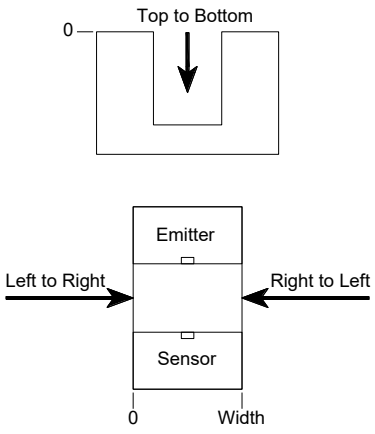
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## Performance





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WCR1206-200KFI WH10-100RJI WHS3-33RJA1 BPR10101J LR1206-R10FW LRMAP3920C-R001FT OPB802W55Z PCF0603PR-1K-BT1 PCF0603R-100KBT1 WH25-8R2JI ASC1206-150KFT5 OAR5 - R020FI APC0805RD-10KBT5 MFR3-10RFC P160KNP-0QC20A10K PCF0402PR-180RBT1 RC55Y-210KBI MFC0805-R10FT5 OARS-XP-0R001 OPB829CZ CAW104R70JLF SQP7S-82RJB15 W24-33KJI WA84-180RJI WDBR122RKT 67WR5KLFTB OVLBB4C7 WCR0805-82KFI WH5-50RJI WP4S-1R5JA2