

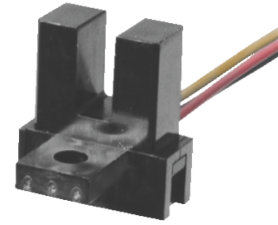
Slotted Optical Switch

OPB857Z



Features:

- Three wires for economy in electrical connection
- Water resistant, no optical openings in upper plastic body
- Internal narrow aperture for high motion resolution



Description:

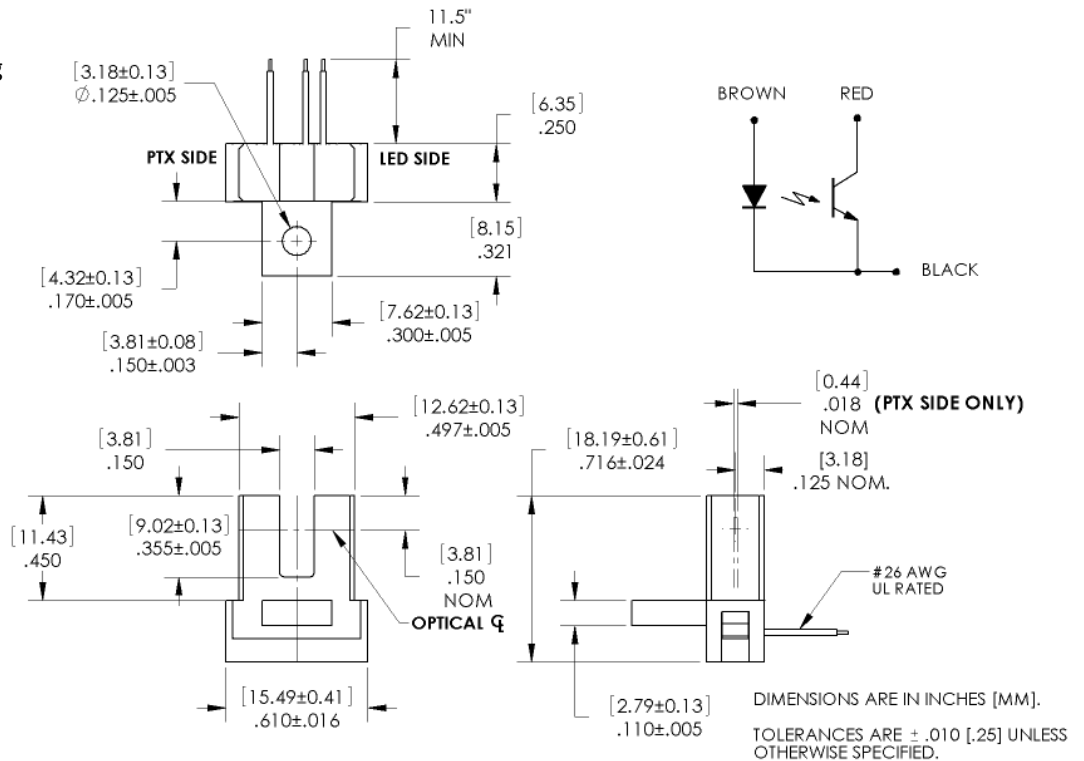
OPB857Z is a non-contact optical switch with a NPN silicon phototransistor and infrared Light Emitting Diode (LED) which are mounted on opposite sides of a 0.150" (3.8 mm) wide slot.

The device upper body is a single molded piece IR transparent plastic that is tinted to reduce ambient light interference and offers water resistance as well as dirt/dust protection. The phototransistor has a internal aperture that offers good optical resolution. LED emissions are near-infrared (850 – 940nm).

Applications:

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

| Wire Color | Description |
|------------|-------------|
| Red | Collector |
| Brown | Anode |
| Black | Common |



RoHS

Notes:

- (1) Wire is 26AWG, UL Rated PVC insulation.
- (2) Ideal torque for bolt or screw 0,45 to 0,68 Nm (4 to 6 Lb-in).
- (3) When using a thread lock compound, ND Industries "ND Vibra-Tite" Formula 3" will avoid stress cracking plastic.
- (4) Plastic is soluble in chlorinated hydrocarbons and ketones. Methanol or isopropanol are recommended as cleaning agents.

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

| | |
|---|-----------------------|
| Storage & Operating Temperature Range | -40°C to +80° C |
| Input Diode | |
| Input Diode Power Dissipation | 100 mW ⁽⁵⁾ |
| Input Diode Forward D.C. Current, T _A = 25°C | 50 mA ⁽⁵⁾ |
| Input Diode Peak Forward Pulse Current, T _A = 25°C (1µs pulse width, 300pps) | 1 A |
| Input Diode Reverse D.C. Voltage, T _A = 25°C | 2 V |
| Phototransistor | |
| Power Dissipation | 100 mW ⁽⁵⁾ |
| Collector - Emitter Voltage | 30V |
| Emitter - Collector Voltage | 5.0V |

Electrical Characteristics (T_A = 25°C)

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

Input Diode (see OP140 or OP240 for additional information)

| | | | | | | |
|----------------|-----------------|---|---|------|----|------------------------|
| V _F | Forward Voltage | - | - | 1.70 | V | I _F = 20 mA |
| I _R | Reverse Current | - | - | 100 | µA | V _R = 2 V |

Output Phototransistor (see OP550 for additional information)

| | | | | | | |
|----------------------|-------------------------------------|-----|---|-----|----|--|
| V _{(BR)CEO} | Collector-Emitter Breakdown Voltage | 30 | - | - | V | I _C = 1 mA, E _E = 0 |
| V _{(BR)ECO} | Emitter-Collector Breakdown Voltage | 5.0 | - | - | V | I _E = 100 µA, E _E = 0 |
| I _{CEO} | Collector Dark Current | - | - | 100 | nA | V _{CE} = 10 V, I _F = 0, E _E = 0 |

Coupled

| | | | | | | |
|----------------------|--------------------------------------|-----|---|------|----|--|
| V _{CE(SAT)} | Collector-Emitter Saturation Voltage | - | - | 0.40 | V | I _C = 1.50 mA, I _F = 20 mA |
| I _{C(ON)} | On-State Collector Current | 1.5 | - | 17.0 | mA | V _{CE} = 10 V, I _F = 20 mA |

General Note

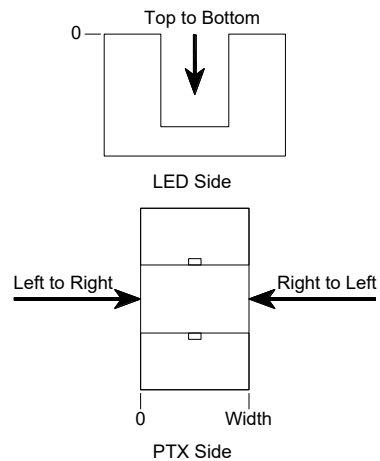
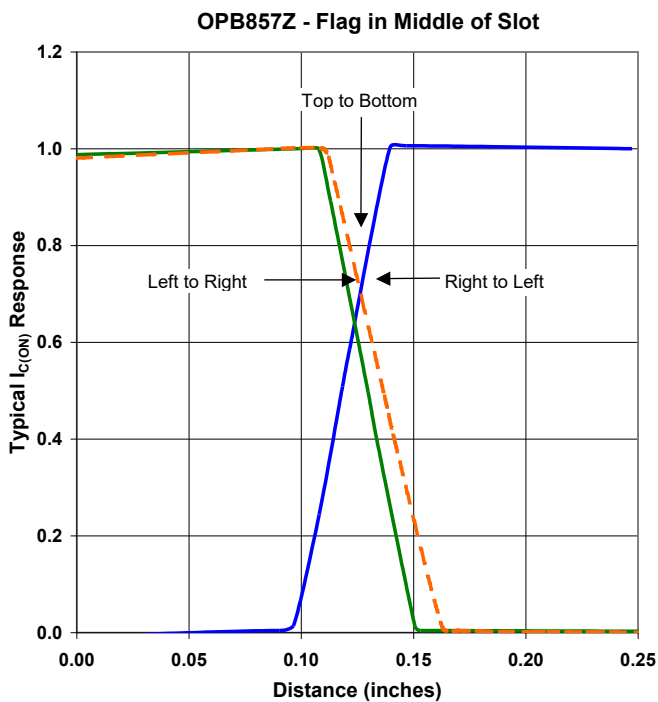
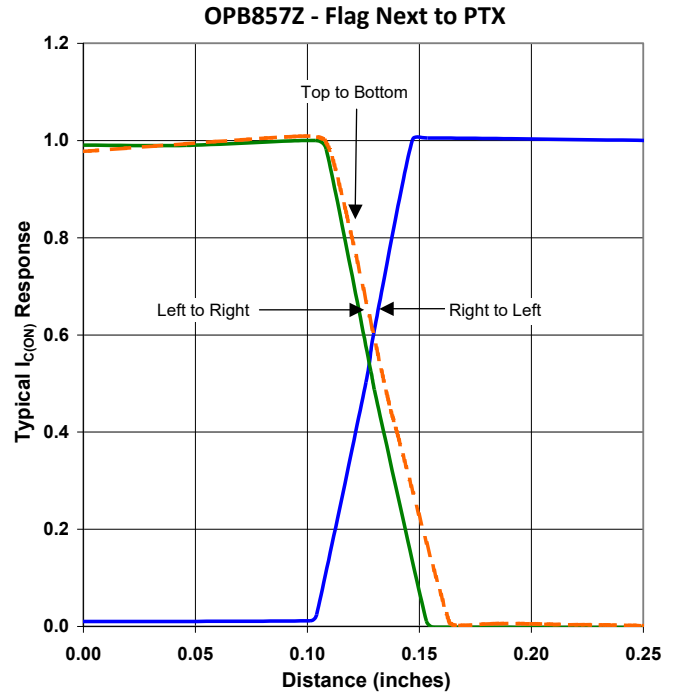
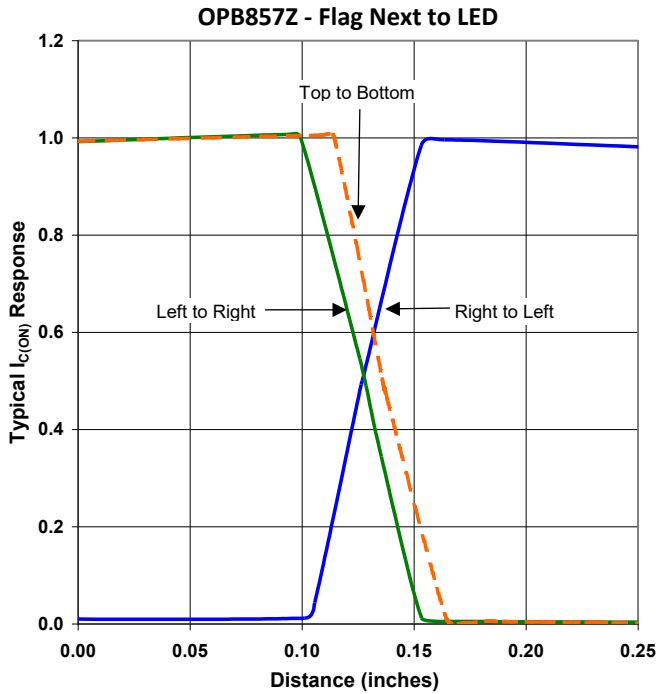
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Performance



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