

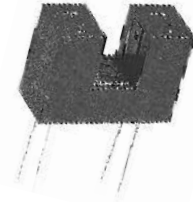
# Slotted Optical Switch

OPB818



## Features:

- Choice of aperture
- Choice of opaque or IR transmissive shell material
- Non-contact switching
- Mounts directly to PCBoard or dual-in-line socket
- 0.400" (10.16 mm) lead spacing
- 0.200" (5.08 mm) slot width. 0.250" (6.35 mm) slot depth



## Description:

The OPB818 slotted switch consists of an infrared emitting diode and an NPN silicon phototransistor mounted in a low-cost black plastic housing on opposite sides of a 0.200" (5.080 mm) wide slot. Switching of the phototransistor occurs whenever an opaque object passes through the slot.

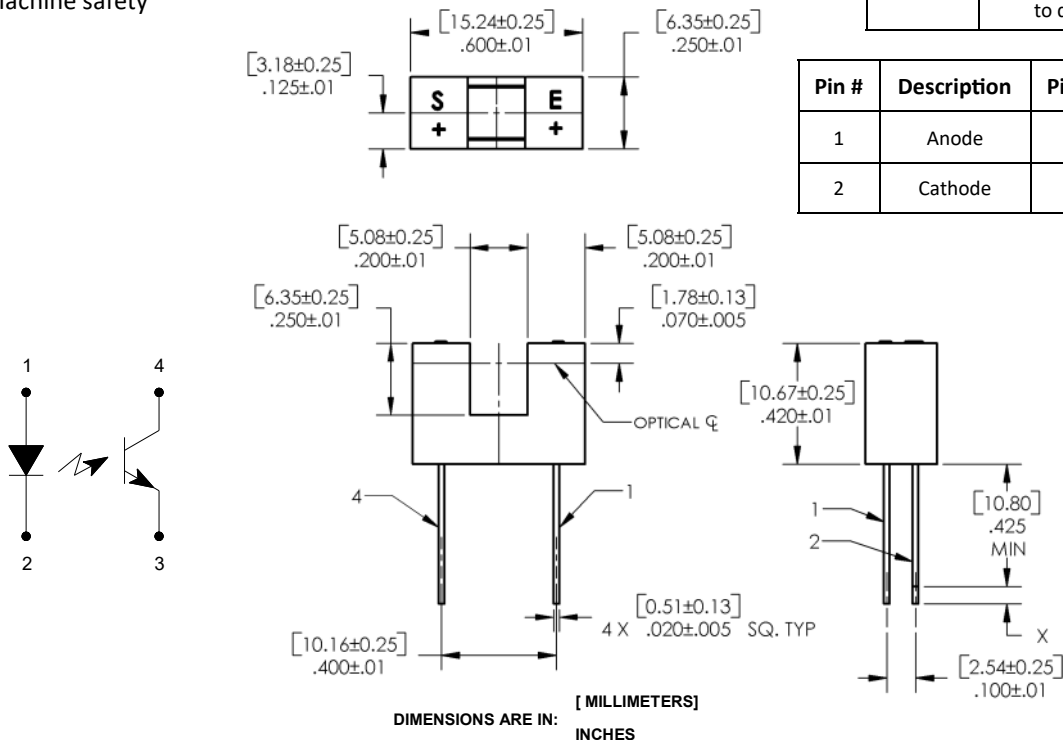
The OPB818 is designed for direct soldering into PCBoards or for mounting in standard dual-in-line sockets and has an 0.25" (6.35 mm) deep and 0.20" (5.08 mm) wide slot. The apertures are 0.033" (0.84 mm) in diameter on both the sensor side ("S") as well as on the emitter side ("E").

## Applications:

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

Ordering Information	
Part Number	Description
OPB818	Slotted Optical Switch (mounts directly to PCBoards or to dual-in-line socket)

Pin #	Description	Pin #	Description
1	Anode	4	Collector
2	Cathode	3	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 ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Storage & Operating Temperature Range	-40°C to +85°C
Lead Soldering Temperature [1/16 inch (1.6 mm) from the case for 5 sec. with soldering iron] <sup>(1)</sup>	260°C

#### Input Diode

Forward DC Current	50 mA
Peak Forward Current (1 $\mu\text{s}$ pulse width, 300 pps)	1 A
Power Dissipation <sup>(2)</sup>	75 mW

#### Output Phototransistor

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector DC Current	30 mA
Power Dissipation <sup>(2)</sup>	100 mW

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
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#### Input Diode (see OP240 for additional information)

$V_F$	Forward Voltage	-	-	1.7	V	$I_F = 20 \text{ mA}$
$I_R$	Reverse Current	-	-	-	-	Not designed for reverse operation

#### Output Phototransistor (see OP550 for additional information)

$V_{(BR)(CEO)}$	Collector-Emitter Breakdown Voltage	30	-	-	V	$I_C = 1 \text{ mA}$
$V_{(BR)(ECO)}$	Emitter-Collector Breakdown Voltage	5	-	-	V	$I_E = 100 \mu\text{A}$
$I_{CEO}$	Collector-Emitter Leakage Current	-	-	100	nA	$V_{CE} = 10 \text{ V}, I_F = 0, E_E = 0$

#### Coupled

$I_{C(ON)}$	On-State Collector Current	100	-	-	$\mu\text{A}$	$V_{CE} = 10 \text{ V}, I_F = 20 \text{ mA}$
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	-	-	0.4	V	$I_C = 50 \mu\text{A}, I_F = 20 \text{ mA}$

#### Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly 1.67 mW/ $^\circ\text{C}$  above 25°C.
- (3) All parameters were tested using pulse techniques.
- (4) Leads are 0.20" square (5.080 mm) and 0.425" long (10.80 mm), minimum.
- (5) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones. Spray and wipe; do not submerge.
- (6) Polarity is denoted by color of housing top: LED (gray or clear), sensor (black).
- (7) Do not apply reverse voltage to LED. LED will be a 0V in reverse voltage and draw current as if a short.

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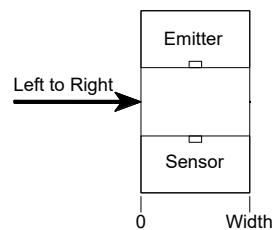
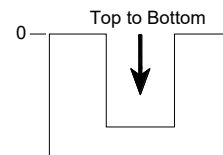
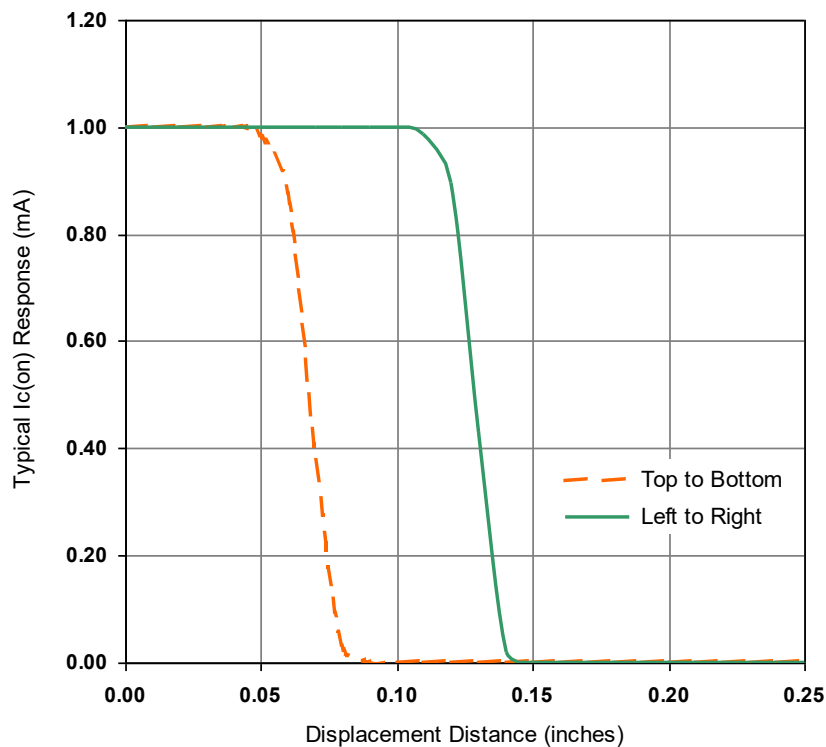
# Slotted Optical Switch

OPB818



## Performance

OPB818 - Flag in Middle of Slot



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