# **Slotted Optical Switch**

### **OPB806**

#### Features:

- Non-contact switching
- Base or side mounting
- 0.125" (3.175 mm) slot width •





Slot Width /

#### **Description:**

The OPB806 slotted optical switch consists of an infrared emitting diode (LED) and a NPN silicon phototransistor, mounted on opposite sides of a 0.125" (3.175 mm) wide slot.

The OPB806 has two sets of mounting tabs allowing Base or Side mounting of the device. The LED and phototransistor leads project from each side of the housing on 0.050" (1.27 mm) centers.

LED Peak

Wavelength

Phototransistor switching takes place whenever an opaque object passes through the slot.

Part Number

#### **Applications:**

- Non-contact interruptive object sensing
- Assembly line automation
- Machine automation •

2

Pin #

1

2

3

4

- Equipment security .
- Machine safety



Sensor



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.

Description Anode

Cathode

Collector

Emitter

TT Electronics | Optek Technology, Inc. 1645 Wallace Drive, Ste. 130, Carrollton, TX USA 75006 |Ph: +1 972 323 2200 www.ttelectronics.com | sensors@ttelectronics.com

INCHES

RoHS

Lead

Length

0.500'

# **Slotted Optical Switch**



## **OPB806**

### **Electrical Specifications**

### Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)

Storage & Operating Temperature Range	-40° C to +85° C 260° C	
Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron] $^{(1)}$		
nput Diode		
Continuous Forward Current	50 mA	
Peak Forward Current (1 μs pulse width, 300 pps)	3 A 2 V	
Reverse Voltage		
Power Dissipation <sup>(2)</sup>	100 mW	
Dutput Phototransistor		
Collector-Emitter Voltage	30 V	
Emitter-Collector Voltage	5 V	
Power Dissipation <sup>(2)</sup>	100 mW	

### Electrical Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

SYMBOL	PARAMETER	MIN	ТҮР	MAX	UNITS	TEST CONDITIONS
Input Diode	(See OP165 for additional information)					
V <sub>F</sub>	Forward Voltage	-	-	1.7	V	I <sub>F</sub> = 20 mA
I <sub>R</sub>	Reverse Current	-	-	100	μΑ	V <sub>R</sub> = 2 V
Output Pho	totransistor (See OP505 for additional infor	mation)				
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	30	-	-	V	I <sub>C</sub> = 100 μA
V <sub>(BR)ECO</sub>	Emitter-Collector Breakdown Voltage	5	-	-	V	I <sub>E</sub> = 100 μA
I <sub>CEO</sub>	Collector-Emitter Dark Current	-	-	100	nA	$V_{CE} = 10 \text{ V}, \text{ I}_{F} = 0, \text{ E}_{E} = 0$
Combined				•	•	
V <sub>CE(SAT)</sub>	Collector-Emitter Saturation Voltage	-	-	0.5	V	I <sub>C</sub> = 200 μA, I <sub>F</sub> = 20 mA
I <sub>C(ON)</sub>	On-State Collector Current	0.4	-	-	mA	V <sub>CE</sub> = 0.5 V, I <sub>F</sub> = 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) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.
- (4) All parameters were tested using pulse technique.

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.

# **Slotted Optical Switch**

### **OPB806**





Performance

**Displacement Distance (inches)** 



**Test Schematic** 



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.

TT Electronics | Optek Technology, Inc. 1645 Wallace Drive, Ste. 130, Carrollton, TX USA 75006 |Ph: +1 972 323 2200 www.ttelectronics.com | sensors@ttelectronics.com

General Note

**OPB806** 





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.

TT Electronics | Optek Technology, Inc. 1645 Wallace Drive, Ste. 130, Carrollton, TX USA 75006 |Ph: +1 972 323 2200 www.ttelectronics.com | sensors@ttelectronics.com