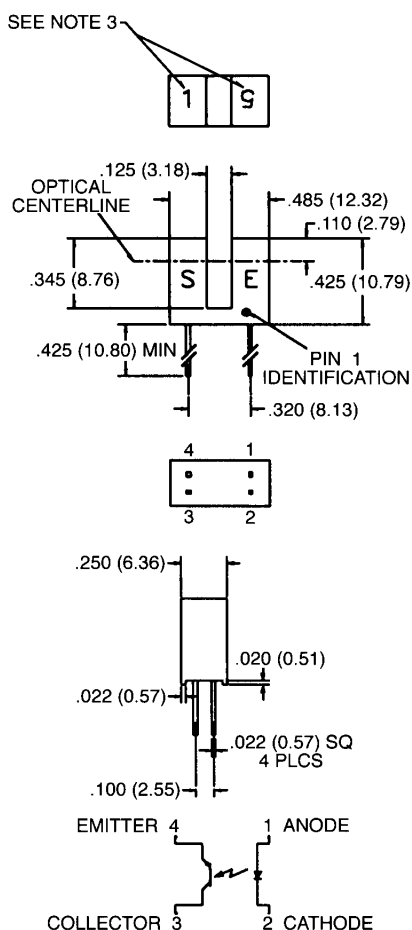


## SLOTTED OPTICAL SWITCH

**OPB860N11/OPB860N51/OPB860N55**

## PACKAGE DIMENSIONS



## DESCRIPTION

The OPB860N series of switches is designed to allow the user maximum flexibility in applications. Each switch consists of an infrared emitting diode facing an NPN phototransistor across a .125" (3.18 mm) gap. A unique housing design provides a smooth external surface to prevent dust build-up while molded internal apertures give precise positioning and also provide protection from ambient light interference.

## FEATURES

- Fully enclosed design allows dust and ambient light protection.
- Lead spacing at .320".
- .050" and .010" aperture options.
- PCB mountable.

ST2158

NOTES:

- NOTES:  
1. DIMENSIONS ARE IN INCHES (mm).  
2. TOLERANCE IS  $\pm .010$  (.25)  
UNLESS OTHERWISE SPECIFIED.  
3. NUMBER INDICATES APERTURE SIZE.  
(5=.050", 1=.010")

APERTURE OPTIONS:

	LED	PHOTOTRANSISTOR
OPB860N11	.010	.010
OPB860N51	.050	.010
OPB860N55	.050	.050





## SLOTTED OPTICAL SWITCH

### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

Storage Temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Operating Temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Soldering:	
Lead Temperature (Iron)	$240^\circ\text{C}$ for 5 sec. <sup>(2,3,4)</sup>
Lead Temperature (Flow)	$260^\circ\text{C}$ for 10 sec. <sup>(2,3)</sup>
<b>INPUT DIODE</b>	
Continuous Forward Current	50 mA
Reverse Voltage	5.0 Volts
Power Dissipation	100 mW <sup>(1)</sup>
<b>OUTPUT TRANSISTOR</b>	
Collector-Emitter Voltage	30.0 Volts
Emitter-Collector Voltage	5.0 Volts
Power Dissipation	100 mW <sup>(1)</sup>

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

PARAMETER	SYMBOL	MIN.	MAX.	UNITS	TEST CONDITIONS
<b>INPUT DIODE</b>					
Forward Voltage	$V_F$	—	1.70	V	$I_F = 20\text{ mA}$
Reverse Leakage Current	$I_R$	—	100	$\mu\text{A}$	$V_R = 2.0\text{ V}$
<b>OUTPUT TRANSISTOR</b>					
Emitter-Collector Breakdown	$BV_{ECO}$	5	—	V	$I_E = 100\text{ }\mu\text{A}$ , $E_e = 0$
Collector-Emitter Breakdown	$BV_{CEO}$	30	—	V	$I_C = 1.0\text{ mA}$ , $E_e = 0$
Collector-Emitter Leakage	$I_{CEO}$	—	100	nA	$V_{CE} = 10.0\text{ V}$ , $E_e = 0$
<b>COUPLED</b>					
On-State Collector Current					
OPB860N11	$I_{C(ON)}$	500	—	$\mu\text{A}$	$I_F = 20\text{ mA}$ , $V_{CE} = 5\text{ V}$
OPB860N51	$I_{C(ON)}$	500	—	$\mu\text{A}$	$I_F = 20\text{ mA}$ , $V_{CE} = 5\text{ V}$
OPB860N55	$I_{C(ON)}$	500	—	$\mu\text{A}$	$I_F = 20\text{ mA}$ , $V_{CE} = 5\text{ V}$
Saturation Voltage	$V_{CE(SAT)}$	—	0.40	V	$I_F = 20\text{ mA}$ , $I_C = 400\text{ }\mu\text{A}$

### NOTES

1. Derate power dissipation linearly 1.67 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
2. RMA flux is recommended.
3. Methanol or Isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron tip  $\frac{1}{16}$ " (1.6 mm) from housing.