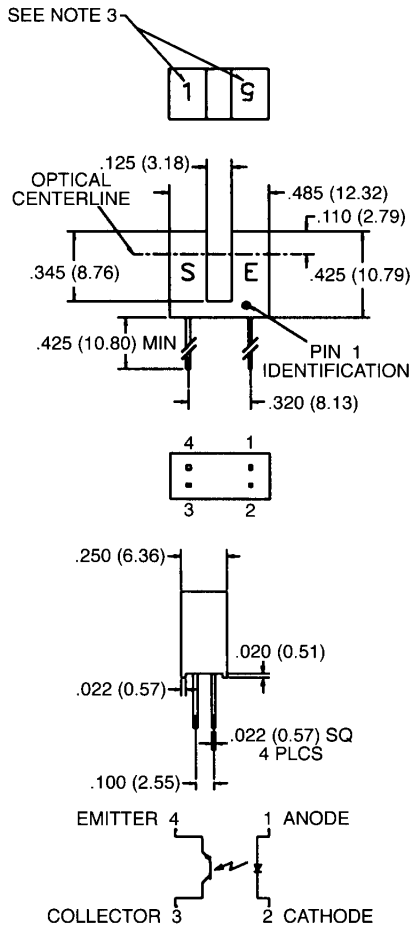


## OPB860N11/OPB860N51/OPB860N55

### 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:

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

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A = 25^\circ\text{C}$ Unless Otherwise Specified)	
Storage Temperature	-40°C to + 85°C
Operating Temperature	-40°C to + 85°C
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. <sup>(2,3,4)</sup>
Lead Temperature (Flow)	260°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>

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ 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	$I_E = 100\ \mu\text{A}$ , $E_e = 0$	
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	$I_F = 20\text{ mA}$ , $I_C = 400\ \mu\text{A}$	

<b>NOTES</b>
<ol style="list-style-type: none"> <li>Derate power dissipation linearly 1.67 mW/°C above 25°C.</li> <li>RMA flux is recommended.</li> <li>Methanol or Isopropyl alcohols are recommended as cleaning agents.</li> <li>Soldering iron tip 1/16" (1.6 mm) from housing.</li> </ol>