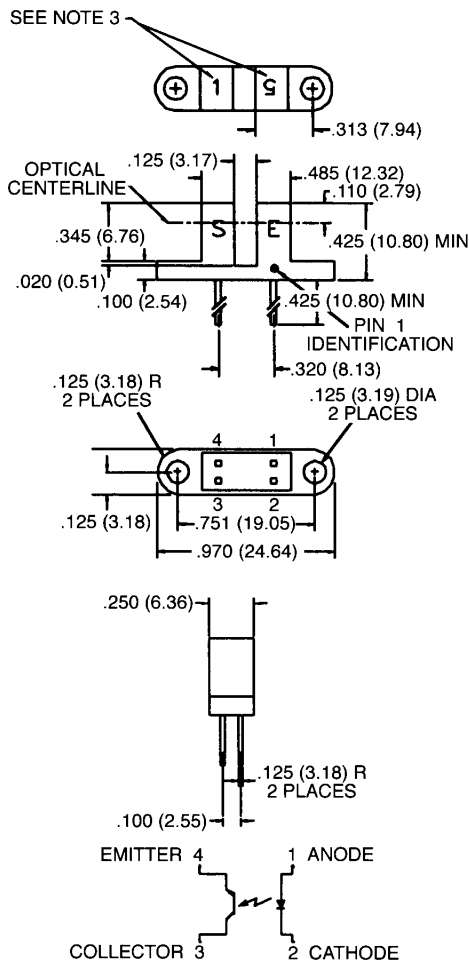


**PACKAGE DIMENSIONS**



ST2160

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
OPB861T51	.050	.010
OPB861T55	.050	.050

**DESCRIPTION**

The OPB861T 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.

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A = 25^\circ\text{C}$ 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>

<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					
OPB861T51	$I_{C(ON)}$	1.0	—	mA	$I_F = 10\text{ mA}$ , $V_{CE} = 5\text{ V}$
OPB861T55	$I_{C(ON)}$	1.0	—	mA	$I_F = 10\text{ mA}$ , $V_{CE} = 5\text{ V}$
Saturation Voltage	$V_{CE(SAT)}$	—	0.40	V	$I_F = 10\text{ mA}$ , $I_C = 800\ \mu\text{A}$

<b>NOTES</b>
1. Derate power dissipation linearly 1.67 mW/°C above 25°C.
2. RMA flux is recommended.
3. Methanol or Isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron tip 1/16" (1.6 mm) from housing.



## SLOTTED OPTICAL SWITCH

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.