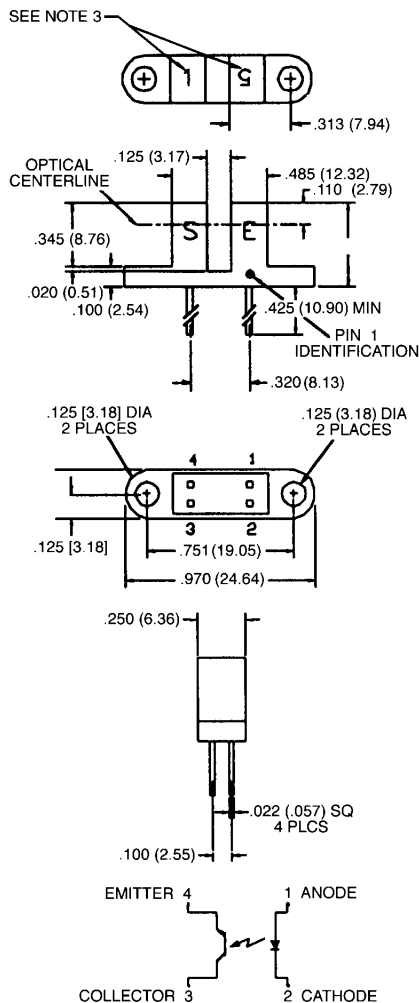


**PACKAGE DIMENSIONS**



**ST2162**

**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 |
|-----------|------|-----------------|
| OPB862T51 | .050 | .010            |
| OPB862T55 | .050 | .050            |

**DESCRIPTION**

The OPB862T 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   |               |      |      |               |  |
| OPB862T51  | $I_{C(OH)}$   | 1.8  | —    | mA            | $I_F = 20\text{ mA}$ , $V_{CE} = 0.6\text{ V}$ |
| OPB862T55  | $I_{C(OH)}$   | 1.8  | —    | mA            | $I_F = 20\text{ mA}$ , $V_{CE} = 0.6\text{ V}$ |
| Saturation Voltage   | $V_{CE(SAT)}$ | —    | 0.60 | V             | $I_F = 20\text{ mA}$ , $I_C = 1.8\text{ mA}$   |

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



## SLOTTED OPTICAL SWITCH

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