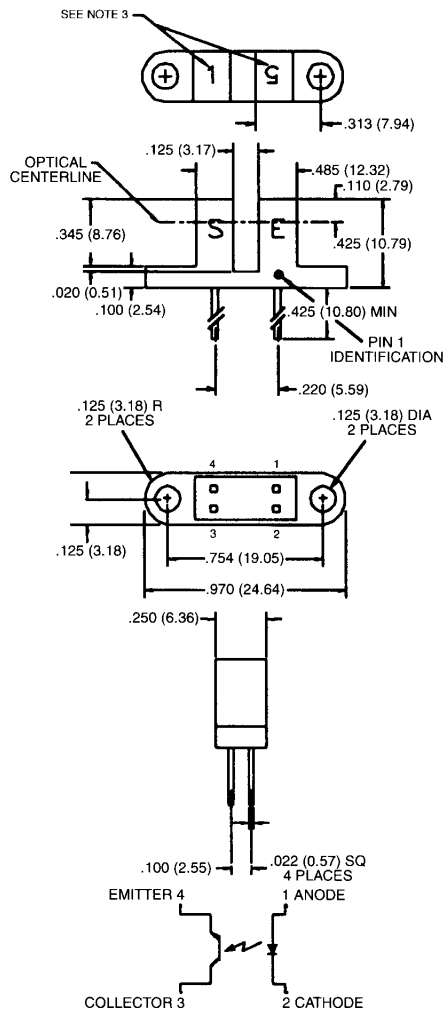


**PACKAGE DIMENSIONS**



ST2127

**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 |
|-----------|------|-----------------|
| OPB867T51 | .050 | .010            |
| OPB867T55 | .050 | .050            |

**DESCRIPTION**

The OPB867T 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 .220".
- .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             | $I_E = 100\text{ }\mu\text{A}$ , $E_e = 0$     |
| 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                                                               |               |      |      |               |                                                |
| OPB867T51                                                                                | $I_{C(ON)}$   | 1.8  | —    | mA            | $I_F = 20\text{ mA}$ , $V_{CE} = 0.6\text{ V}$ |
| OPB867T55                                                                                | $I_{C(ON)}$   | 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>                                                                                                                                                                                                                                                                                                                                            |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <ol style="list-style-type: none"> <li>Derate power dissipation linearly <math>1.67\text{ mW}/^\circ\text{C}</math> above <math>25^\circ\text{C}</math>.</li> <li>RMA flux is recommended.</li> <li>Methanol or Isopropyl alcohols are recommended as cleaning agents.</li> <li>Soldering iron tip <math>1/16"</math> (1.6 mm) from housing.</li> </ol> |  |



## SLOTTED OPTICAL SWITCH

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