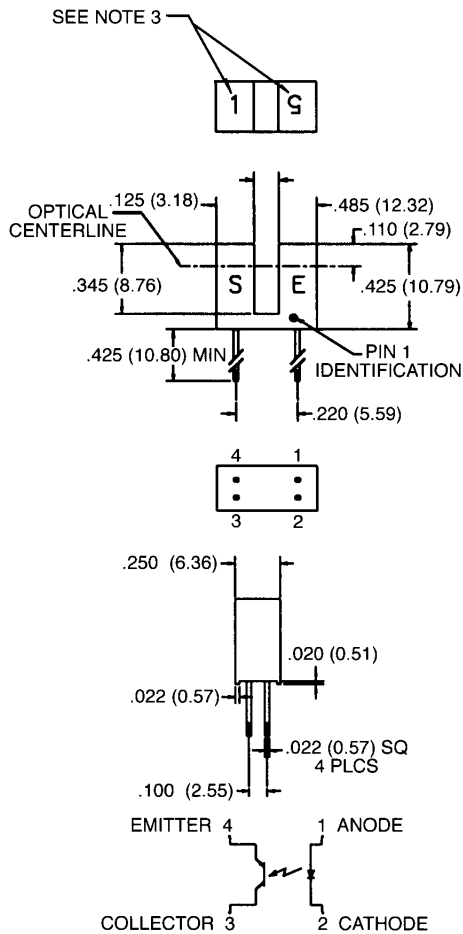


OPB865N11/OPB865N51/OPB865N55

PACKAGE DIMENSIONS



ST2163

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 |
|-----------|------|-----------------|
| OPB865N11 | .010 | .010 |
| OPB865N51 | .050 | .010 |
| OPB865N55 | .050 | .050 |

DESCRIPTION

The OPB865N 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.



SLOTTED OPTICAL SWITCH

| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified) | |
|--|---|
| Storage Temperature | -40°C to $+85^\circ\text{C}$ |
| Operating Temperature | -40°C to $+85^\circ\text{C}$ |
| Soldering: | |
| Lead Temperature (Iron) | 240°C for 5 sec. ^(2,3,4) |
| Lead Temperature (Flow) | 260°C for 10 sec. ^(2,3) |
| INPUT DIODE | |
| Continuous Forward Current | 50 mA |
| Reverse Voltage | 5.0 Volts |
| Power Dissipation | 100 mW ⁽¹⁾ |
| OUTPUT TRANSISTOR | |
| Collector-Emitter Voltage | 30.0 Volts |
| Emitter-Collector Voltage | 5.0 Volts |
| Power Dissipation | 100 mW ⁽¹⁾ |

| ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified) | | | | | |
|--|---------------|------|------|---------------|---|
| PARAMETER | SYMBOL | MIN. | MAX. | UNITS | TEST CONDITIONS |
| INPUT DIODE | | | | | |
| Forward Voltage | V_F | — | 1.70 | V | $I_F = 20\text{ mA}$ |
| Reverse Leakage Current | I_R | — | 100 | μA | $V_R = 2.0\text{ V}$ |
| OUTPUT TRANSISTOR | | | | | |
| 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 | $V_{CE} = 10.0\text{ V}$, $E_e = 0$ |
| COUPLED | | | | | |
| On-State Collector Current | | | | | |
| OPB865N11 | $I_{C(ON)}$ | 500 | — | μA | $I_F = 20\text{ mA}$, $V_{CE} = 5\text{ V}$ |
| OPB865N51 | $I_{C(ON)}$ | 500 | — | μA | $I_F = 20\text{ mA}$, $V_{CE} = 5\text{ V}$ |
| OPB865N55 | $I_{C(ON)}$ | 500 | — | μA | $I_F = 20\text{ mA}$, $V_{CE} = 5\text{ V}$ |
| Saturation Voltage | $V_{CE(SAT)}$ | — | 0.40 | V | $I_F = 20\text{ mA}$, $I_C = 400\ \mu\text{A}$ |

| NOTES |
|--|
| <ol style="list-style-type: none"> 1. Derate power dissipation linearly 1.67 mW/$^\circ\text{C}$ above 25°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. |