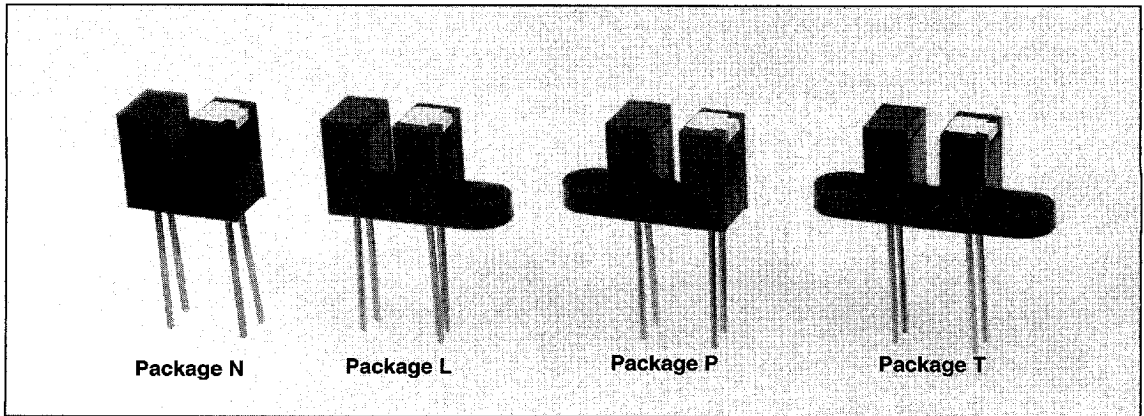


Slotted Optical Switches

Types OPB360, OPB370 Series



Features

- 0.125" (3.18 mm) wide gap
- Choice of aperture
- Choice of opaque or IR transmissive shell material
- Choice of mounting configuration
- Choice of lead spacing

Description

The OPB360/370 series of slotted switches provides the design engineer with the flexibility of a custom device from a standard product line. Building from a standard housing with a .125" (3.18 mm) wide slot, the user can specify (1) electrical output parameters, (2) mounting tab configuration, (3) choice of lead spacing, (4) discrete shell material, and (5) aperture width.

All housings are an opaque grade of injection-molded plastic to minimize the assembly's sensitivity to ambient radiation, both visible and near-infrared. Discrete shells (exposed on the parallel faces inside the device throat) are either IR transmissive plastic for applications where aperture contamination may occur or opaque plastic with aperture openings for maximum protection against ambient light.

Replaces/Upgrades

OPB860, OPB870 Series

■ 6798580 0002980 413 ■

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Storage and Operating Temperature Range -40°C to $+85^\circ\text{C}$
 Lead Soldering Temperature Range [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron] $240^\circ\text{C}^{(2)}$

Input Diode

Forward DC Current 50 mA
 Peak Forward Current (1 μs pulse width, 300 pps) 3.0 A
 Reverse DC Voltage 2.0 V
 Power Dissipation 100 mW⁽¹⁾

Output Phototransistor

Collector-Emitter Voltage 30 V
 Emitter-Collector Voltage 5.0 V
 Collector DC Current 30 mA
 Power Dissipation 100 mW⁽¹⁾

Notes:

- (1) Derate linearly 1.67 mW/ $^\circ\text{C}$ above 25°C .
- (2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (3) All parameters tested using pulse technique.
- (4) Lead spacing of 0.220" (5.59 mm) or 0.320" (8.13 mm) is available. Leads are 0.20" sq. (5.08 mm) and 0.425" (10.80 mm) long (min).
- (5) Methanol and isopropanol are recommended as cleaning agents. Plastic housings are soluble in chlorinated hydrocarbons and ketones.
- (6) Polarity is denoted by color of housing top:
 - LED - Gray or Clear
 - Sensor - Black

Types OPB360, OPB370 Series

Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Input Diode					
V _F	Forward Voltage		1.7	V	I _F = 20 mA
I _R	Reverse Current		100	μA	V _R = 2 V
Output Phototransistor					
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	30		V	I _C = 1 mA
V _{(BR)ECO}	Emitter-Collector Breakdown Voltage	5.0		V	I _E = 100 μA
I _{CEO}	Collector-Emitter Dark Current		100	nA	V _{CE} = 10 V, I _F = 0, E ₀ = 0
Coupled					
I _{C(ON)}	On-State Collector Current OPB360T, N, L, P55 OPB365T, N, L, P55 OPB370T, N, L, P55 OPB375T, N, L, P55	3.5	14.0	mA	V _{CE} = 0.4 V, I _F = 20 mA
	OPB360T, N, L, P51 OPB365T, N, L, P51 OPB370T, N, L, P51 OPB375T, N, L, P51	2.5	10.0	mA	V _{CE} = 0.4 V, I _F = 20 mA
	OPB360T, N, L, P11 OPB365T, N, L, P11 OPB370T, N, L, P11 OPB375T, N, L, P11	1.0	5.0	mA	V _{CE} = 0.4 V, I _F = 20 mA

SLOTTED OPTICAL SWITCHES

PART NUMBER GUIDE

OPB 3 X X X X X

Optek Assembly

Phototransistor Output Family

Discrete Shell Material Designation

6 - Base Mount IR Transmissive
Plastic Discrete Shell
PC Mountable Leads

7 - Base Mount Opaque
Plastic Discrete Shell
PC Mountable Leads

Lead Space Designator

0 = 0.320" (8.12 mm) Lead Space
5 = 0.220" (5.59 mm) Lead Space

Aperture Width In Front of Sensor
5 = .0050" 1 = 0.010"

Aperture Width In Front of Emitter
5 = 0.050" 1 = 0.010"

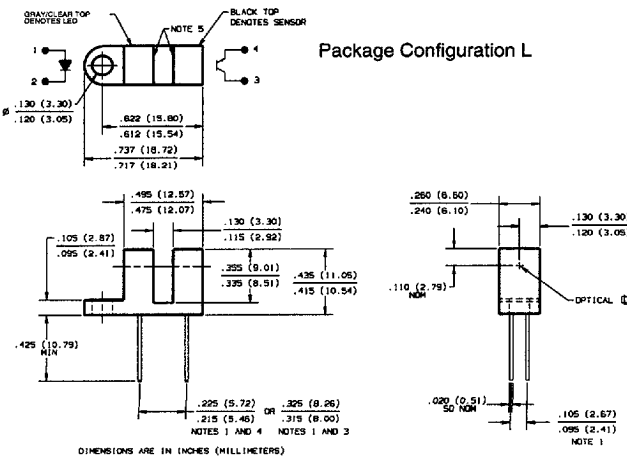
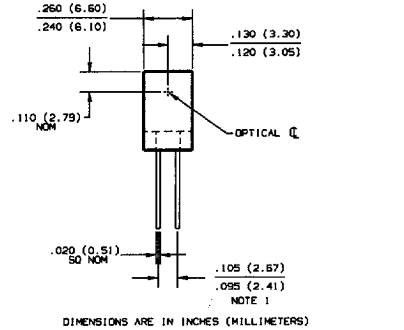
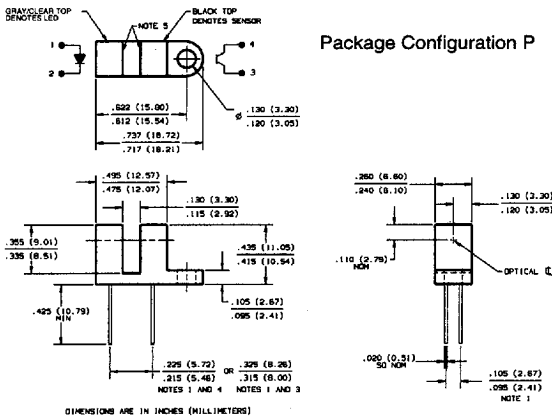
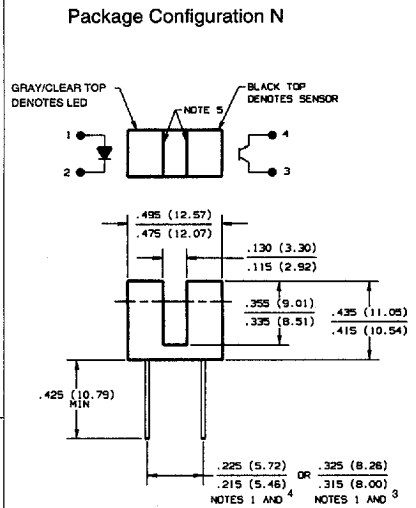
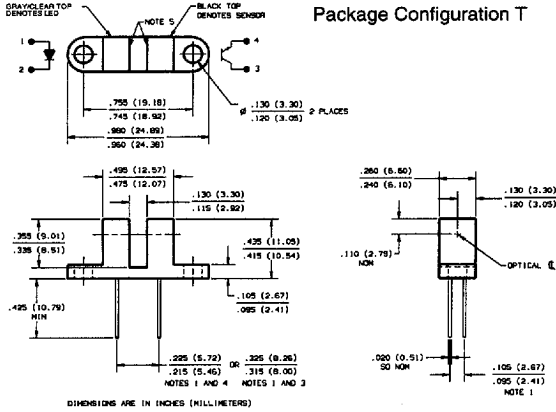
Mounting Configurations

T - Both Mounting Tabs
N - No Mounting Tabs
L - Single Mounting Tab Emitter Side
P - Single Mounting Tab Phototransistor Side

■ 6798580 0002981 35T ■

Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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Notes:

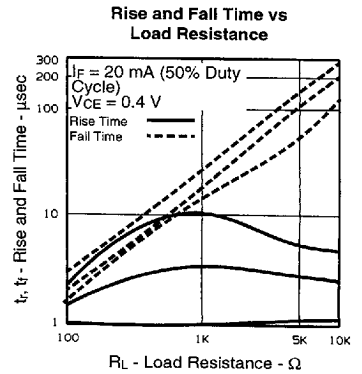
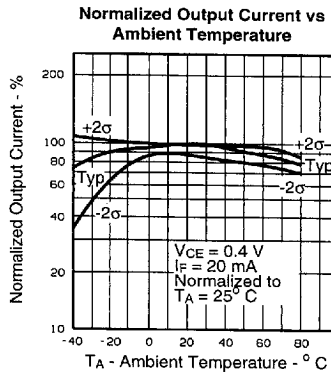
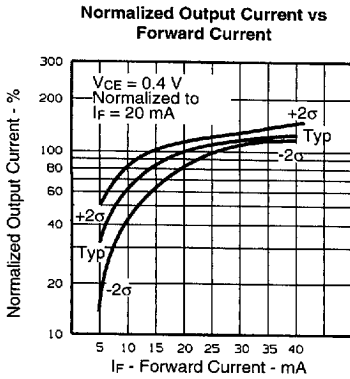
- (1) Dimension controlled at housing surface only.
- (2) Methanol and isopropanol are recommended as cleaning agents. Housings are soluble in chlorinated hydrocarbons and ketones. Highly activated, water soluble fluxes may attack housings in some situations.
- (3) OPB360, OPB370
- (4) OPB365, OPB375
- (5) Aperture dimensions dependent on part number. See Part Number Guide

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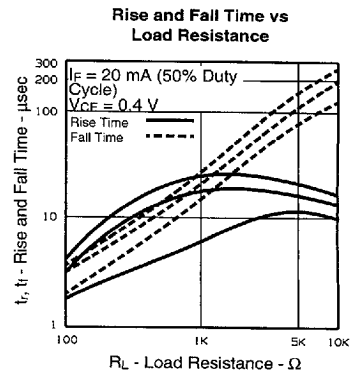
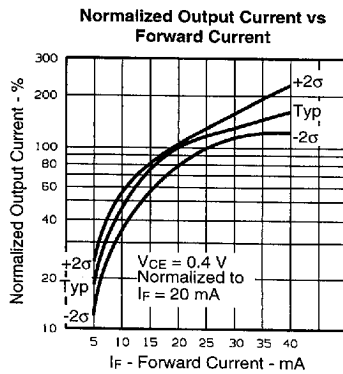
Types OPB360, OPB370 Series

Typical Performance Curves

SLOTTED OPTICAL SWITCHES



All Part Numbers Ending in "1"



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