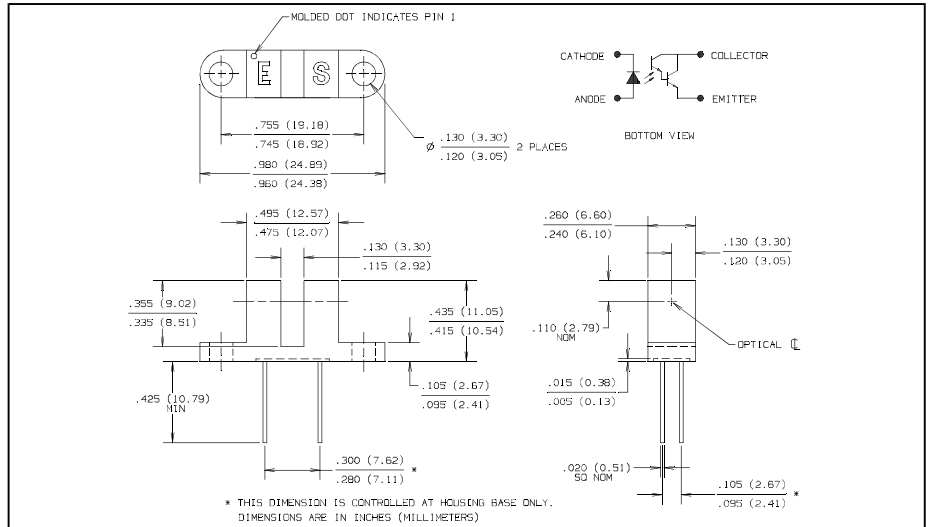


# Slotted Optical Switches

## Types OPB853A1, OPB853A2, OPB853A3



### Features

- Inexpensive opaque plastic housing
- 0.125" (3.18 mm) wide slot
- 0.290" (7.37 mm) lead spacing
- Apertured for high resolution
- Photodarlington output

### Description

The OPB853A series of slotted optical switches consist of an infrared emitting diode and an NPN silicon photodarlington. They are mounted on opposite sides of a 0.125" (3.18 mm) wide slot. The emitter has a 0.050" X 0.050" (1.27 mm X 1.27 mm) molded-in aperture while the photodarlington has a 0.010" X 0.050" (0.254 mm X 1.27 mm) molded-in aperture.

### Absolute Maximum Ratings (T<sub>A</sub> = 25° C unless otherwise noted)

Storage and Operating Temperature Range ..... -40° C to +85° C  
 Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron] ..... 240° C<sup>(1)</sup>

#### Input Diode

Forward DC Current ..... 40 mA  
 Peak Forward Current (1 μs pulse width, 300 pps) ..... 3.0 A  
 Reverse DC Voltage ..... 2.0 V  
 Power Dissipation ..... 100 mW<sup>(2)</sup>

#### Output Photodarlington

Collector-Emitter Voltage ..... 15 V  
 Emitter-Collector Voltage ..... 5.0 V  
 Power Dissipation ..... 100 mW<sup>(2)</sup>

#### Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (2) Derate linearly 1.67 mW/° C above 25° C.
- (3) All parameters tested using pulse technique.
- (4) 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.

# Types OPB853A1, OPB853A2, OPB853A3

Electrical Characteristics ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
<b>Input Diode</b>					
$V_F$	Forward Voltage		1.7	V	$I_F = 20\text{ mA}$
$I_R$	Reverse Current		100	$\mu\text{A}$	$V_R = 2\text{ V}$
<b>Output Phototransistor</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	15		V	$I_C = 1\text{ mA}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0		V	$I_E = 100\ \mu\text{A}$
$I_{CEO}$	Collector-Emitter Dark Current		100	nA	$V_{CE} = 10\text{ V}$
<b>Coupled</b>					
$V_{CE(SAT)}$	Saturation Voltage		1.0	V	$I_C = 1.8\text{ mA}, I_F = 10\text{ mA}$
$I_{C(ON)}$	On-State Collector Current	OPB853A1	2.5	mA	$V_{CE} = 1.5\text{ V}, I_F = 5\text{ mA}$
		OPB853A2	5.0	mA	$V_{CE} = 1.5\text{ V}, I_F = 5\text{ mA}$
		OPB853A3	10.0	mA	$V_{CE} = 1.5\text{ V}, I_F = 5\text{ mA}$

SLOTTED  
OPTICAL  
SEMICONDUCTORS

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