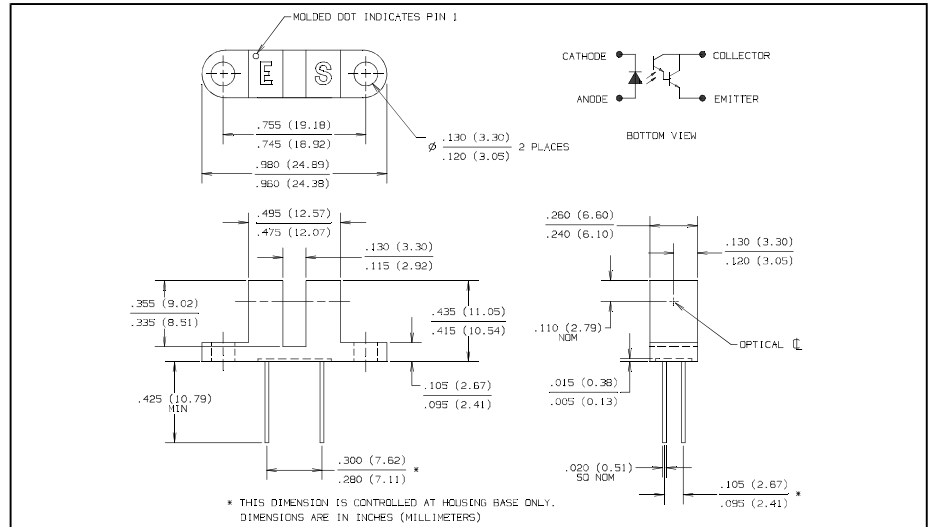


Slotted Optical Switches

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

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

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⁽²⁾

Output Photodarlington

Collector-Emitter Voltage 15 V
 Emitter-Collector Voltage 5.0 V
 Power Dissipation 100 mW⁽²⁾

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (2) Derate linearly 1.67 mW/ $^\circ\text{C}$ 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
Input Diode					
V_F	Forward Voltage		1.7	V	$I_F = 20\text{ mA}$
I_R	Reverse Current		100	μA	$V_R = 2\text{ V}$
Output Phototransistor					
$V_{(BR)CEO}$	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	$V_{CE} = 10\text{ V}$
Coupled					
$V_{CE(SAT)}$	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.