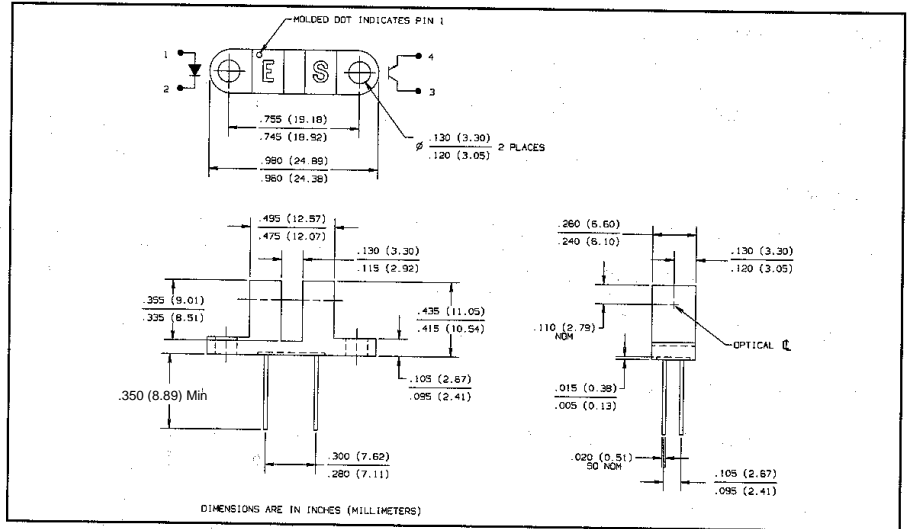
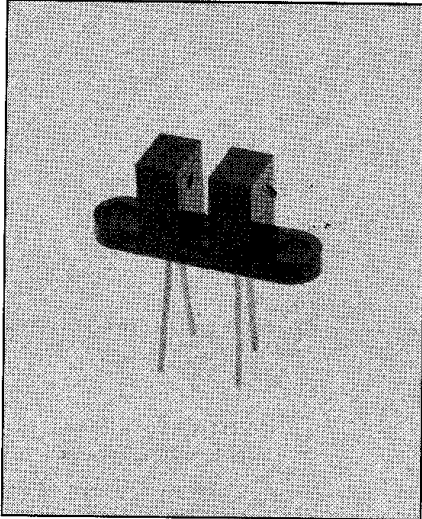


Slotted Optical Switches

Types OPB852A1, OPB852A2, OPB852A3



Features

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

Description

The OPB852A series of slotted optical switches consist of an infrared emitting diode and an NPN silicon phototransistor. 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 phototransistor has a 0.010" X 0.050" (0.254 mm X 1.27 mm) molded-in aperture.

Absolute Maximum Ratings (TA = 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⁽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 Phototransistor

Collector-Emitter Voltage 30 V
 Emitter-Collector Voltage 5.0 V
 Power Dissipation 100 mW⁽²⁾

Notes:

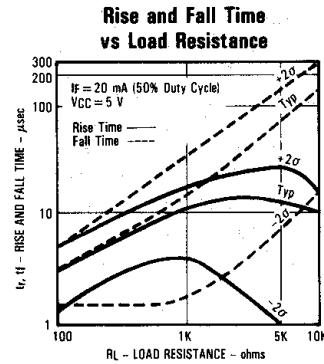
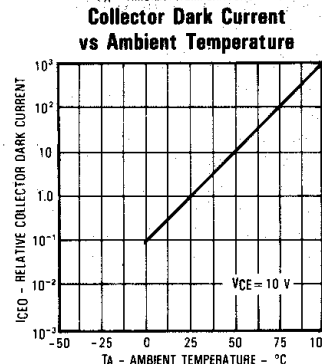
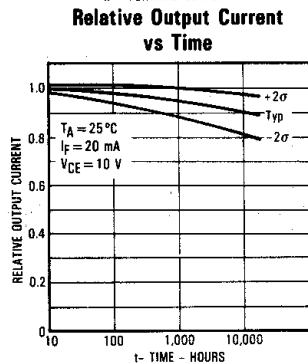
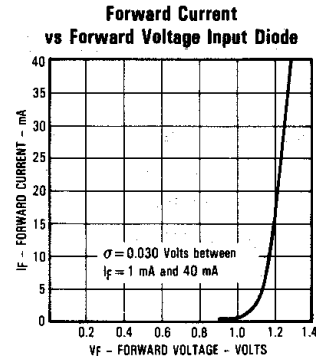
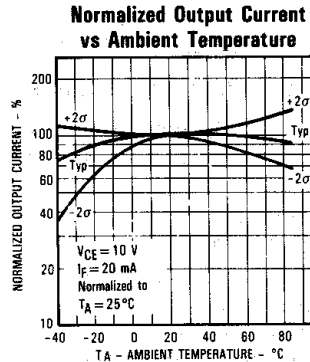
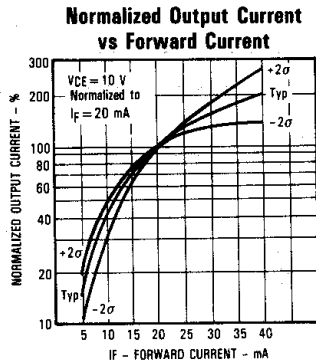
- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (2) Derate linearly 1.67 mW/° C above 25° C.
- (3) All parameters tested using pulse technique.
- (4) Methanol and isopropanol are recommended as cleaning agents. Housings are soluble in chlorinated hydrocarbons and ketones. Highly activated, water soluble fluxes may attack housings in some situations.

Types OPB852A1, OPB852A2, OPB852A3

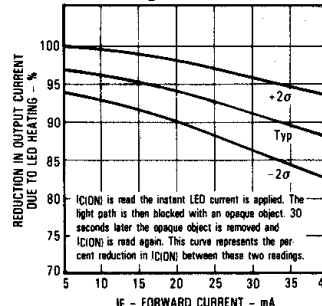
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

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	30		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	OPB852A1 OPB852A2 OPB852A3	0.40 0.40 0.40	V	$I_C = 500\ \mu\text{A}, I_F = 20\text{ mA}$ $I_C = 500\ \mu\text{A}, I_F = 20\text{ mA}$ $I_C = 1.8\text{ mA}, I_F = 20\text{ mA}$
$I_{C(ON)}$	On-State Collector Current	OPB852A1 OPB852A2 OPB852A3	1.0 2.0 4.0	mA mA mA	$V_{CE} = 5\text{ V}, I_F = 20\text{ mA}$ $V_{CE} = 5\text{ V}, I_F = 20\text{ mA}$ $V_{CE} = 5\text{ V}, I_F = 20\text{ mA}$

Typical Performance Curves



Reduction in Output Current Due to LED Heating vs Forward Current



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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