



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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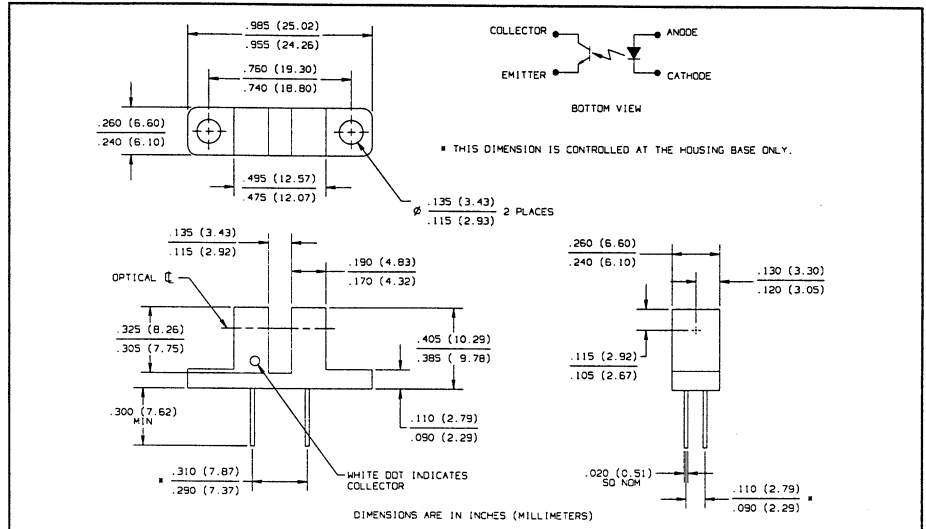
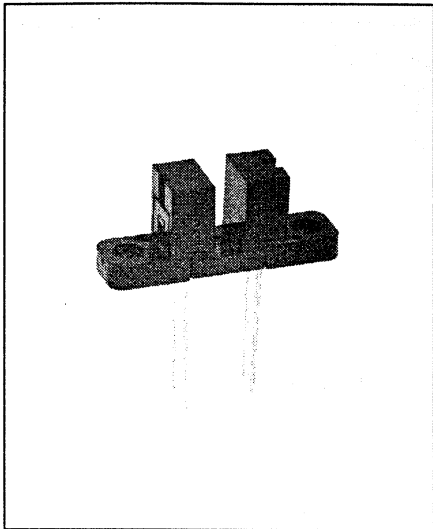
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# Slotted Optical Switches

## Types OPB845A, OPB845B



### Features

- Non-contact switching
- Printed circuit board mounting
- 0.125" (3.18 mm) wide slot
- 0.300" (7.62 mm) lead spacing
- Opaque plastic housing

### Description

The OPB845 series consists of an infrared emitting diode and an NPN silicon phototransistor encased in an opaque housing on opposite sides of a .125" (3.18 mm) wide slot. The opaque housing, with molded apertures, provides protection in areas where ambient radiation may be a concern. The "A" option offers a .050" (1.27 mm) wide aperture molded in front of the phototransistor while the "B" version offers a .010" (0.254 mm) wide 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 . . . . . 50 mA  
 Peak Forward Current (1µs pulse width, 300 pps) . . . . . 3.0 A  
 Reverse DC Voltage . . . . . 2.0 V  
 Power Dissipation . . . . . 100 mW<sup>(2)</sup>

### Output Phototransistor

Collector-Emitter Voltage . . . . . 30 V  
 Emitter-Collector Voltage . . . . . 5.0 V  
 Collector DC Current . . . . . 30 mA  
 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 or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.

OPB#	Phototransistor Aperture Width
OPB845A	0.050"
OPB845B	0.010"



RoHS

# Types OPB845A, OPB845B

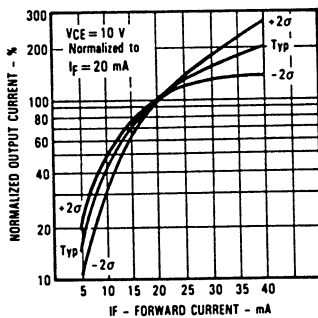
Electrical Characteristics ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

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	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	$V_{CE} = 10\text{V}, I_F = 0, E_e = 0$
<b>Coupled</b>					
$V_{CE(SAT)}$	Saturation Voltage		0.6	V	$I_C = 1800\ \mu\text{A}, I_F = 20\text{ mA}$
$I_{C(ON)}$	On-State Collector Current	1800		$\mu\text{A}$	$V_{CE} = 0.6\text{ V}, I_F = 20\text{ mA}$

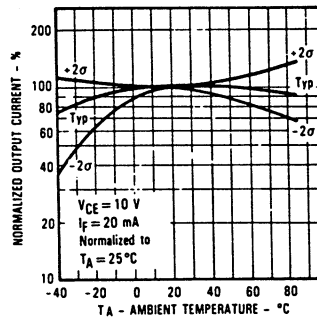
SLOTTED OPTICAL SWITCHES

## Typical Performance Curves

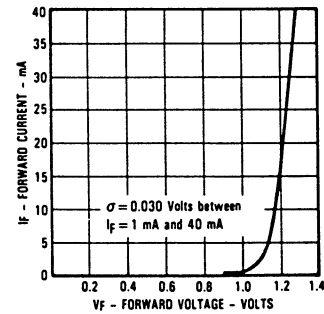
**Normalized Output Current vs Forward Current**



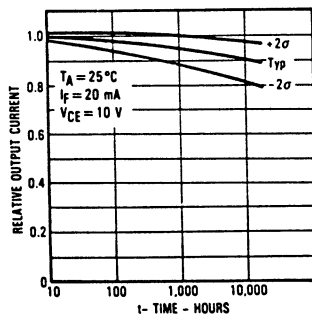
**Normalized Output Current vs Ambient Temperature**



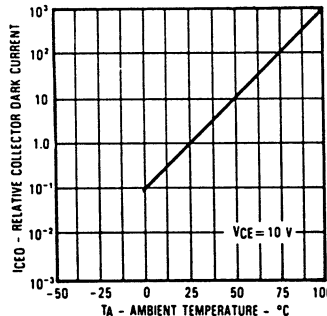
**Forward Current vs Forward Voltage Input Diode**



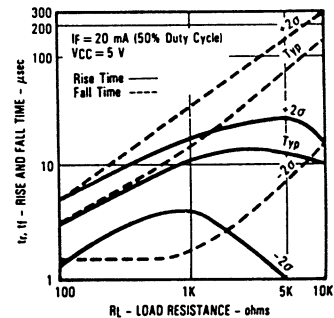
**Relative Output Current vs Time**



**Collector Dark Current vs Ambient Temperature**



**Rise and Fall Time vs Load Resistance**



**Reduction in Output Current Due to LED Heating vs Forward Current**

