



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

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

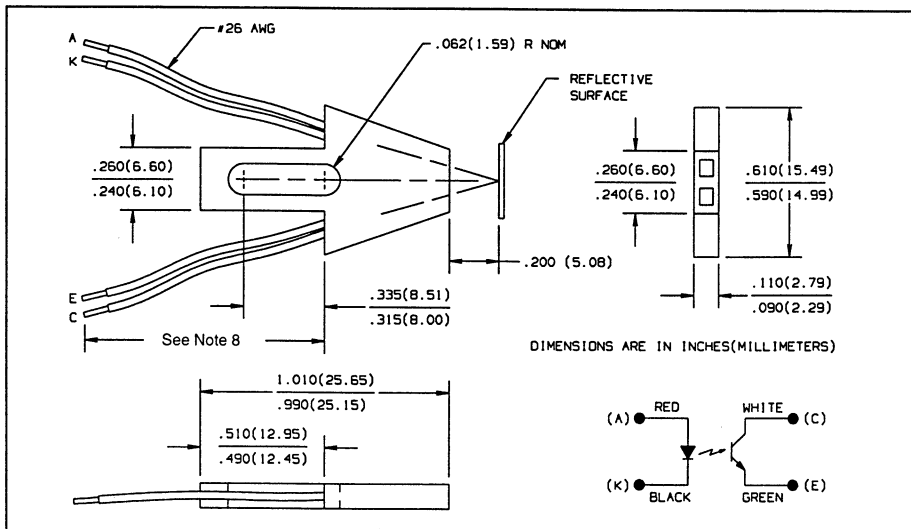
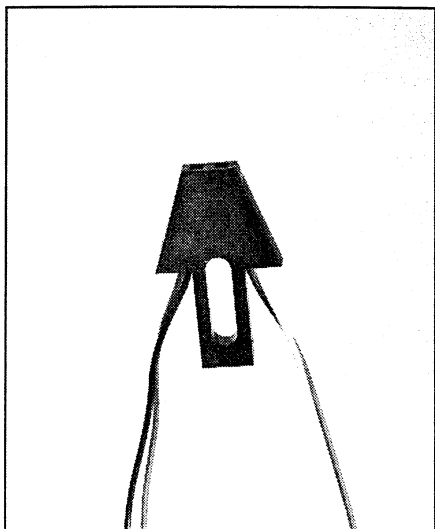
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# Reflective Object Sensor

## Types OPB700, OPB700AL



### Features

- Phototransistor output
- Low profile to facilitate stacking
- Low cost plastic housing
- 4.0 inch minimum length lead wire (OPB700)
- 18.0 inch minimum length lead wire (OPB700AL)

### Description

The OPB700 series sensor consists of an infrared emitting diode and an NPN silicon phototransistor, mounted "side-by-side" on converging optical axes, in a black plastic housing. The phototransistor responds to radiation from the emitter only when a reflective object passes within its field of view.

Leads are #26 AWG, teflon insulation, 4.0" minimum length (OPB700) or 18.0" minimum length (OPB700AL), stripped and tinned.

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

Storage Temperature Range . . . . .  $-40^\circ\text{C}$  to  $+125^\circ\text{C}$   
 Operating Temperature Range . . . . .  $-40^\circ\text{C}$  to  $+100^\circ\text{C}$

### Input Diode

Continuous Forward Current . . . . . 100 mA  
 Reverse Voltage . . . . . 2.0 V  
 Power Dissipation . . . . . 80 mW<sup>(1)</sup>

### Output Phototransistor

Collector-Emitter Voltage . . . . . 25 V  
 Emitter-Collector Voltage . . . . . 5.0 V  
 Power Dissipation . . . . . 50 mW<sup>(2)</sup>

### Notes:

- (1) Derate linearly 1.07 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
- (2) Derate linearly 0.67 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
- (3) Measured using Eastman Kodak neutral white test card with 90% diffuse reflectance as a reflecting surface. Reference: Eastman Kodak, Catalog #1257795.
- (4) Crosstalk ( $I_{cx}$ ) is the collector current measured with the indicated current in the input diode and with no reflecting surface.
- (5)  $d$  is the distance from the assembly head to the reflective surface.
- (6) Lower curve is based on a calculated worst case condition rather than the conventional  $-2\sigma$  limit.
- (7) All parameters tested using pulse technique.
- (8) 4.0" (101.6 mm) min for OPB700, 18.0" (457.2 mm) min for OPB700AL.



For RoHS compliant devices add "Z" to the end of the part number: OPB700Z, OPB700ALZ

# Type OPB700, OPB700AL

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

REFLECTIVE OBJECT SENSORS

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
<b>Input Diode</b>					
$V_F$	Forward Voltage		1.70	V	$I_F = 50\text{ mA}$
$I_R$	Reverse Current		100	$\mu\text{A}$	$V_R = 2.0\text{ V}$
<b>Output Phototransistor</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	25		V	$I_C = 100\ \mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0		V	$I_E = 100\ \mu\text{A}$
$I_{CEO}$	Collector Dark Current		100	nA	$V_{CE} = 10\text{ V}, I_F = 0, E_e = \leq 0.10\ \mu\text{W}/\text{cm}^2$
<b>Combined</b>					
$I_{C(ON)}$	On-State Collector Current	25		$\mu\text{A}$	$V_{CE} = 5\text{ V}, I_F = 40\text{ mA}, d = 0.200\text{ in. (5.08 mm)}$ <sup>(3)(5)</sup>
$I_{CX}$	Crosstalk		2.0	$\mu\text{A}$	$V_{CE} = 5\text{ V}, I_F = 40\text{ mA}$ No Reflecting Surface <sup>(4)</sup>
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage		0.40	V	$I_F = 40\text{ mA}, I_C = 10\ \mu\text{A}, d = 0.200\text{ in. (5.08 mm)}$ <sup>(3)(5)</sup>

## Typical Performance Curves

