



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!



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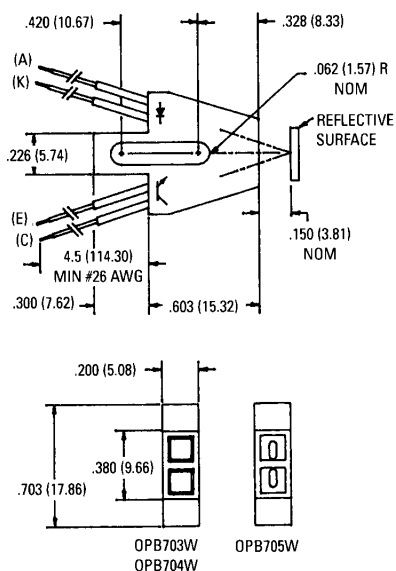
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**OPB703W/OPB704W/OPB705W**

**PACKAGE DIMENSIONS**



FUNCTION	WIRE COLOR
(C) COLLECTOR	WHITE
(E) EMITTER	BLUE
(K) CATHODE	GREEN
(A) ANODE	ORANGE

**NOTES**

1. DIMENSIONS ARE IN INCHES (mm).
2. TOLERANCE IS  $\pm 0.10$  (.25)

OPB703W - IR TRANSPARENT DUST COVER  
OPB704W - IR TRANSPARENT DUST COVER  
OPB705W - OFFSET LENS

**DESCRIPTION**

The OPB703W, OPB704W, and OPB705W consist of an infrared emitting diode and an NPN silicon phototransistor mounted side by side on a converging optical axis in a black plastic housing. The phototransistor responds to radiation from the emitting diode only when a reflective object passes within its field of view. The area of the optimum response approximates a circle .200" in diameter. Leads are 26 AWG, PVC insulation, 4.5" (114.3 mm) minimum length, stripped and tinned.

**FEATURES**

- Phototransistor output.
- High Sensitivity.
- Low cost plastic housing.
- Pre wired with 4.5 inch, 26 gauge leads.
- OPB703W/OPB704W, dust cover; lens.
- OPB705W, offset lens.

**ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  Unless Otherwise Specified)

Storage Temperature .....	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Operating Temperature .....	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Soldering:	
Lead Temperature (Iron) .....	$240^\circ\text{C}$ for 5 sec. <sup>(2,3,4)</sup>
Lead Temperature (Flow) .....	$260^\circ\text{C}$ for 10 sec. <sup>(2,3)</sup>

**INPUT DIODE**

Continuous Forward Current .....	50 mA
Reverse Voltage .....	5.0 Volts
Power Dissipation .....	100 mW <sup>(1)</sup>

**OUTPUT TRANSISTOR**

Collector-Emitter Voltage .....	30 Volts
Emitter-Collector Voltage .....	5.0 Volts
Collector Current .....	25 mA
Power Dissipation .....	100 mW <sup>(1)</sup>

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  Unless Otherwise Specified)

PARAMETER	SYMBOL	MIN.	MAX.	UNITS	TEST CONDITIONS
<b>INPUT DIODE</b>					
Forward Voltage	$V_F$	—	1.70	V	$I_F = 40\text{ mA}$
Reverse Leakage Current	$I_R$	—	100	$\mu\text{A}$	$V_R = 2.0\text{ V}$
<b>OUTPUT TRANSISTOR</b>					
Emitter-Collector Breakdown	$BV_{ECO}$	5	—	V	$I_E = 100\text{ }\mu\text{A}$ , $E_e = 0$
Collector-Emitter Breakdown	$BV_{CEO}$	30	—	V	$I_C = 100\text{ }\mu\text{A}$ , $E_e = 0$
Collector-Emitter Leakage	$I_{CEO}$	—	100	nA	$V_{CE} = 10.0\text{ V}$ , $E_e = 0$
<b>COUPLED</b>					
On-State Collector Current					
OPB703W	$I_{C(ON)}$	200	—	$\mu\text{A}$	$I_F = 40\text{ mA}$ , $V_{CE} = 5\text{ V}$ , $D = .150''$ <sup>(5,6)</sup>
OPB704W	$I_{C(ON)}$	200	—	$\mu\text{A}$	$I_F = 40\text{ mA}$ , $V_{CE} = 5\text{ V}$ , $D = .150''$ <sup>(5,6)</sup>
OPB705W	$I_{C(ON)}$	100	—	$\mu\text{A}$	$I_F = 40\text{ mA}$ , $V_{CE} = 5\text{ V}$ , $D = .150''$ <sup>(5,6)</sup>
Crosstalk	$I_{CX}$	—	20	$\mu\text{A}$	$I_F = 40\text{ mA}$ , $V_{CE} = 5\text{ V}$ <sup>(7)</sup>

**NOTES**

- Derate power dissipation linearly 1.67 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
- RMA flux is recommended.
- Methanol or Isopropyl alcohols are recommended as cleaning agents.
- Soldering iron tip  $\frac{1}{16}''$  (1.6 mm) from housing.
- D is the distance from the assembly face to the reflective surface.
- Measured using Eastman Kodak neutral test card with 90% diffused reflecting surface.
- Cross talk is the photocurrent measured with current to the input diode and no reflective surface.



## REFLECTIVE OBJECT SENSOR

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