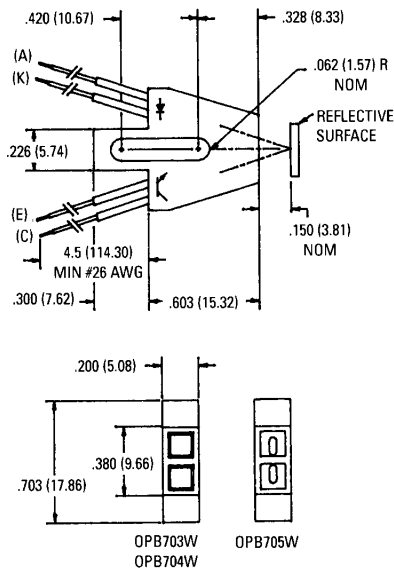




REFLECTIVE OBJECT SENSORS

OPB703W/OPB704W/OPB705W

PACKAGE DIMENSIONS



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.

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 ± 0.10 (.25)

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

ST4018



REFLECTIVE OBJECT SENSORS

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)	
Storage Temperature	-40°C to + 85°C
Operating Temperature	-40°C to + 85°C
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. ^(2,3,4)
Lead Temperature (Flow)	260°C for 10 sec. ^(2,3)
INPUT DIODE	
Continuous Forward Current	50 mA
Reverse Voltage	5.0 Volts
Power Dissipation	100 mW ⁽¹⁾
OUTPUT TRANSISTOR	
Collector-Emitter Voltage	30 Volts
Emitter-Collector Voltage	5.0 Volts
Collector Current	25 mA
Power Dissipation	100 mW ⁽¹⁾

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)					
PARAMETER	SYMBOL	MIN.	MAX.	UNITS	TEST CONDITIONS
INPUT DIODE					
Forward Voltage	V_F	—	1.70	V	$I_F = 40\text{ mA}$
Reverse Leakage Current	I_R	—	100	μA	$V_R = 2.0\text{ V}$
OUTPUT TRANSISTOR					
Emitter-Collector Breakdown	BV_{ECO}	5	—	V	$I_E = 100\ \mu\text{A}$, $E_e = 0$
Collector-Emitter Breakdown	BV_{CEO}	30	—	V	$I_C = 100\ \mu\text{A}$, $E_e = 0$
Collector-Emitter Leakage	I_{CEO}	—	100	nA	$V_{CE} = 10.0\text{ V}$, $E_e = 0$
COUPLED					
On-State Collector Current					
OPB703W	$I_{C(ON)}$	200	—	μA	$I_F = 40\text{ mA}$, $V_{CE} = 5\text{ V}$, $D = .150''$ ^(5,6)
OPB704W	$I_{C(ON)}$	200	—	μA	$I_F = 40\text{ mA}$, $V_{CE} = 5\text{ V}$, $D = .150''$ ^(5,6)
OPB705W	$I_{C(ON)}$	100	—	μA	$I_F = 40\text{ mA}$, $V_{CE} = 5\text{ V}$, $D = .150''$ ^(5,6)
Crosstalk	I_{CX}	—	20	μA	$I_F = 40\text{ mA}$, $V_{CE} = 5\text{ V}$ ⁽⁷⁾

NOTES
1. Derate power dissipation linearly 1.67 mW/°C above 25°C.
2. RMA flux is recommended.
3. Methanol or Isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron tip 1/16" (1.6 mm) from housing.
5. D is the distance from the assembly face to the reflective surface.
6. Measured using Eastman Kodak neutral test card with 90% diffused reflecting surface.
7. Cross talk is the photocurrent measured with current to the input diode and no reflective surface.