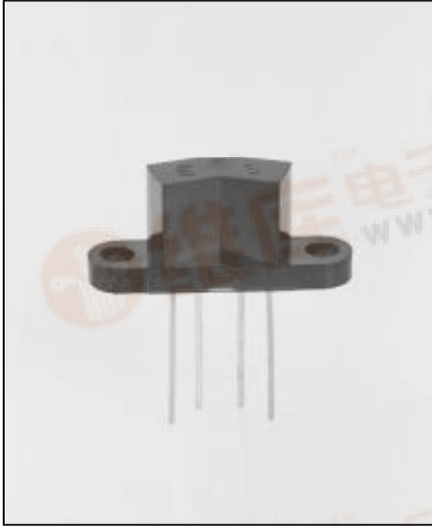




Product Bulletin OPB750T  
June 1996

# Reflective Object Sensor Type OPB750T



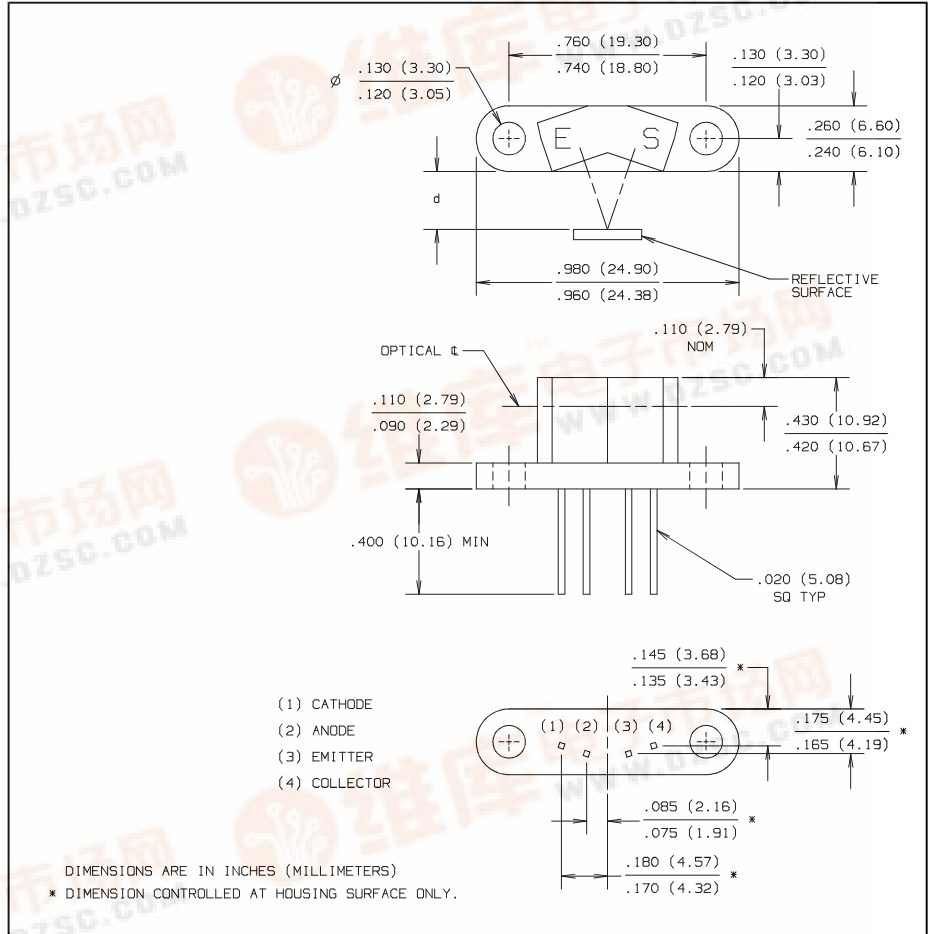
## Features

- High contrast ratio, 1000 to 1 minimum
- Printed circuit board mount
- Low cost plastic housing

## Description

The OPB750T reflective assembly features a phototransistor output designed to decrease low-level light gain while not affecting the high-level light gain. Available without mounting tabs as OPB750N.

Available with 12", 26 AWG wire leads as OPB750/OPB755 series. Photologic<sup>®</sup> output sensors available in OPB760/OPB770 series.



## 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>(2)</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>(1)</sup>

### Output Phototransistor

Collector-Emitter Voltage ..... 30 V  
Collector DC Current ..... 30 mA  
Power Dissipation ..... 100 mW<sup>(1)</sup>

### Notes:

- (1) Derate Linearly 1.67 mW/° C above 25° C.
- (2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (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.
- (5) Photocurrent is measured using an Eastman Kodak Neutral White test card having a 90% diffuse reflectance as a reflecting surface. Reference: Eastman Kodak, Catalog #1257795.
- (6) I<sub>C(OFF)</sub> is the photocurrent measured with current to the input diode and a 5% reflecting surface.



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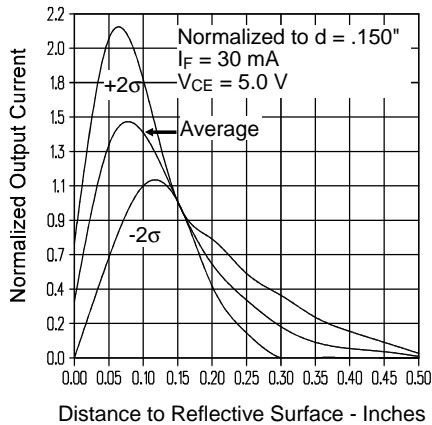
Electrical Characteristics ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
<b>Input Diode</b>					
$V_F$	Forward Voltage		1.80	V	$I_F = 40\text{ mA}$
$I_R$	Reverse Current		100	$\mu\text{A}$	$V_R = 2.0\text{ V}$
<b>Output Phototransistor</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30		V	$I_C = 100\ \mu\text{A}$
$I_{CEO}$	Collector Dark Current		100	nA	$V_{CE} = 10\text{ V}, I_F = 0, H = 0$
<b>Coupled</b>					
$V_{CE(SAT)}$	Saturation Voltage		0.40	V	$I_C = 150\ \mu\text{A}, I_F = 30\text{ mA}, d = 0.22''$
$I_{C(ON)}$	On-State Collector Current	500		$\mu\text{A}$	$V_{CE} = 5\text{ V}, I_F = 30\text{ mA}, d = 0.08''^{(5)}$
		375		$\mu\text{A}$	$V_{CE} = 5\text{ V}, I_F = 30\text{ mA}, d = 0.15''^{(5)}$
		250		$\mu\text{A}$	$V_{CE} = 5\text{ V}, I_F = 30\text{ mA}, d = 0.22''^{(5)}$
$I_{C(OFF)}$	Off-State Collector Current		250	nA	$I_F = 30\text{ mA}, V_{CE} = 5\text{ V}^{(6)}, d = 0.08'', 0.15'', 0.22''$

REFLECTIVE OBJECT SENSORS

## Typical Performance Curves

Normalized Collector Current vs. Object Distance



Normalized Output Current vs. Forward Current

