

January 2006

Reflective Object Sensor

Type OPB755T



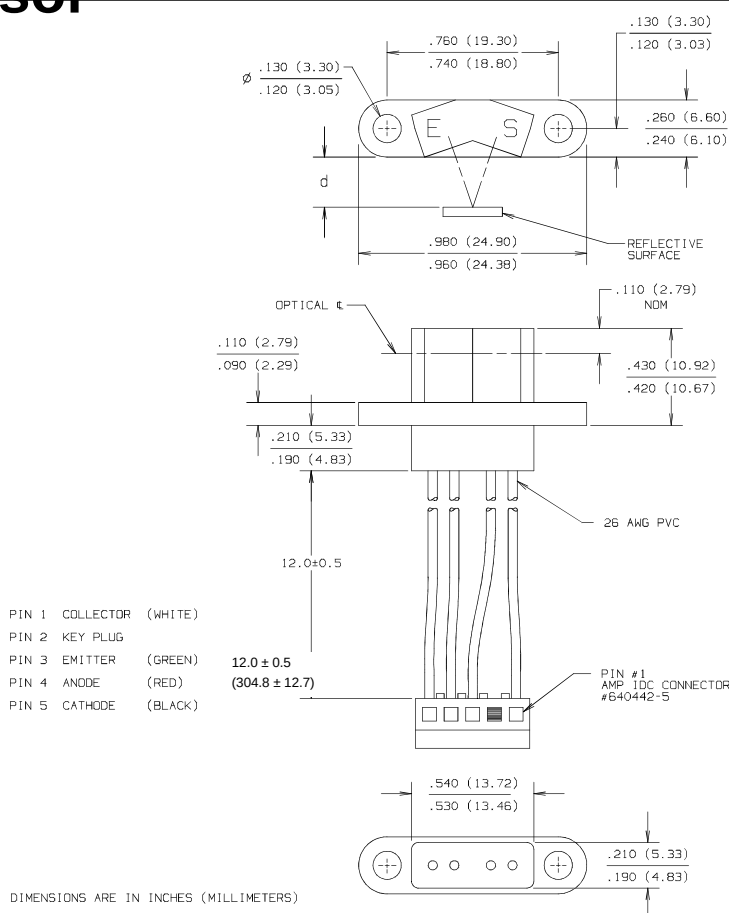
Features

- High contrast ratio, 1000 to 1 minimum
- 12.0" $\pm$ 0.5" min. UL#1429 26 AWG wire leads terminated into an AMP #640442-5 connector
- Low cost plastic housing

Description

The OPB755T 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 OPB755N.

Available with PC Board mountable leads as OPB750 series. Logic output sensors available in the OPB760/OPB770 series.



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

Storage and Operating Temperature Range -40° C to +80° C

Input Diode

Forward DC Current..... 50 mA

Peak Forward Current (1 μ s pulse width, 300 pps) 3.0 A

Reverse DC Voltage..... 2.0 V

Power Dissipation 100 mW⁽¹⁾

Output Phototransistor

Collector-Emitter Voltage..... 30 V

Collector DC Current..... 30 mA

Power Dissipation	100 mW ⁽¹⁾
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Notes:

(1) Derate Linearly 1.82 mW/°C above 25°C.

(2) All parameters tested using pulse technique.

(3) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.

(4) 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.

(5) $I_{C(OFF)}$ is the photocurrent measured with current to the input diode and a 5% reflecting surface.



For RoHS compliant devices add "Z" to the end of the part number: OPB755TZ

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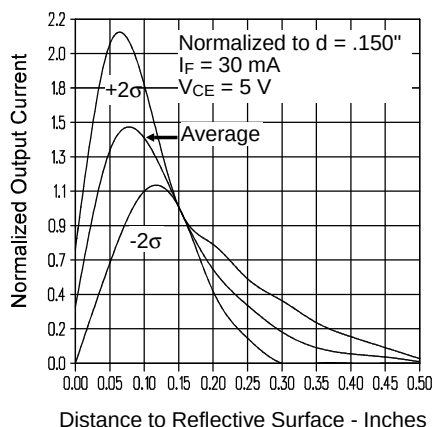
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Input Diode					
V_F	Forward Voltage		1.80	V	$I_F = 40\text{ mA}$
I_R	Reverse Current		100	μA	$V_R = 2.0\text{ V}$
Output Phototransistor					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30		V	$I_C = 100\text{ }\mu\text{A}$
I_{CEO}	Collector Dark Current		100	nA	$V_{CE} = 10\text{ V}, I_F = 0, H = 0$
Coupled					
$V_{CE(SAT)}$	Saturation Voltage		0.40	V	$I_C = 150\text{ }\mu\text{A}, I_F = 30\text{ mA}, d = 0.22''$
$I_{C(ON)}$	On-State Collector Current	500 375 250		μA μA μA	$V_{CE} = 5\text{ V}, I_F = 30\text{ mA}, d = 0.08''^{(4)}$ $V_{CE} = 5\text{ V}, I_F = 30\text{ mA}, d = 0.15''^{(4)}$ $V_{CE} = 5\text{ V}, I_F = 30\text{ mA}, d = 0.22''^{(4)}$
$I_{C(OFF)}$	Off-State Collector Current		250	nA	$I_F = 30\text{ mA}, V_{CE} = 5\text{ V},^{(5)}$ $d = 0.08'', 0.15'', 0.22''$

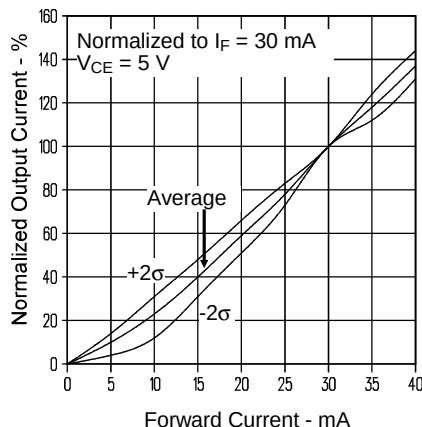
REFLECTIVE
OBJECT
SENSOR

Typical Performance Curves

Normalized Collector Current vs.
Object Distance



Normalized Output Current vs.
Forward Current



Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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