Wide Gap Optical Sensor

OPB856Z

Electronics

Features:

- Designed for Industrial applications
- Threaded housing (M12 X 1 TH), Nut included
- Molded connectors mates with Molex 03-06-2023 plug.
- Emitter (White) and Senor (Black) housing color coded



Description:

The **OPB856** emitter and sensor pair consists of an LED (935 nm) and a Phototransistor designed to operate efficiently with each other. They are mounted in a threaded (M12x1TH) color-coded housing. The LED (white) and the Phototransistor (black) are designed to easily panel mount in through a 0.4724" (12.0 mm) hole. A 12 mm nut is included for each housing. Both components is designed to electrically mate with a Molex (03-06-2023) connector.

The OPB856 pair are designed to operate with separation distances between the LED and Phototransistor up to 12" (30.48 cm).

For Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

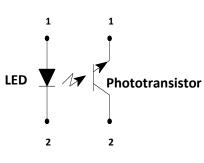
Optical Pair

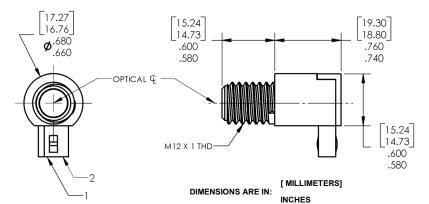
Part Number

OPB856Z

Applications:

- Non-contact interruptive object sensing
- · Assembly line automation
- Machine automation
- Equipment security
- Machine safety





LED Peak

Wavelength

935 nm

Ordering Information

Sensor

Transistor

Housing	LED - White	Sensor - Black	
Plug	MOLEX 03-06-2023	MOLEX 03-06-2023	
Pin for Plug	Male MOLEX 02-06-6122	Female MOLEX 02-06-7104	

White Housing		Black Housing		
Pin #	LED	Pin#	Phototransistor	
1	Anode	1	Emitter	
2	Cathode	2	Collector	



Connector Type

Use Molex 03-06-2023

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Electrical Specifications

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Storage & Operating Temperature Range	-40° C to +85° C	
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260° C	
Input Diode (See OP165 for additional information)		
Continuous Forward DC Current	40 mA	
Reverse Voltage	2 V	
Power Dissipation ⁽¹⁾	100 mW	
Output Phototransistor (See OP505 for additional information)		
Collector-Emitter Voltage	30 V	
Emitter-Collector Voltage	5 V	
Power Dissipation ⁽¹⁾	100 mW	

Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	ТҮР	MAX	UNITS	TEST CONDITIONS		
Input Diode (See OP165 for additional information)								
V_{F}	Forward Voltage		-	1.7	V	I _F = 20 mA		
I _R	I _R Reverse Current		-	100	μΑ	V _R = 2 V		
Output Phototransistor (See OP505 for additional information)								
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	30	-	-	V	Ι _C = 100 μΑ		
V _{(BR)ECO}	Emitter-Collector Breakdown Voltage	5	-	-	V	Ι _Ε = 100 μΑ		
I _{CEO}	Collector Dark Current	-	-	100	nA	V _{CE} = 10 V, I _F = 0, E _E = 0		
Combined								
I _{C(ON)}	On-State Collector Current ⁽³⁾	1.8	-	-	mA	$V_{CE} = 5 \text{ V, I}_F = 20 \text{ mA, d} = 2'' (50.8 \text{ mm})^{(2)}$		

Notes:

- (1) Derate linearly 1.67 mW/°C above 25 °C..
- (2) Distance between lenses along the optical axis is "d".
- (3) All parameters tested using pulse technique.

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Normalized Collector Current vs. Distance between Emitter and Sensor

