

# Wide Gap Optical Sensor

OPB856Z



## 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 Sensor (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.

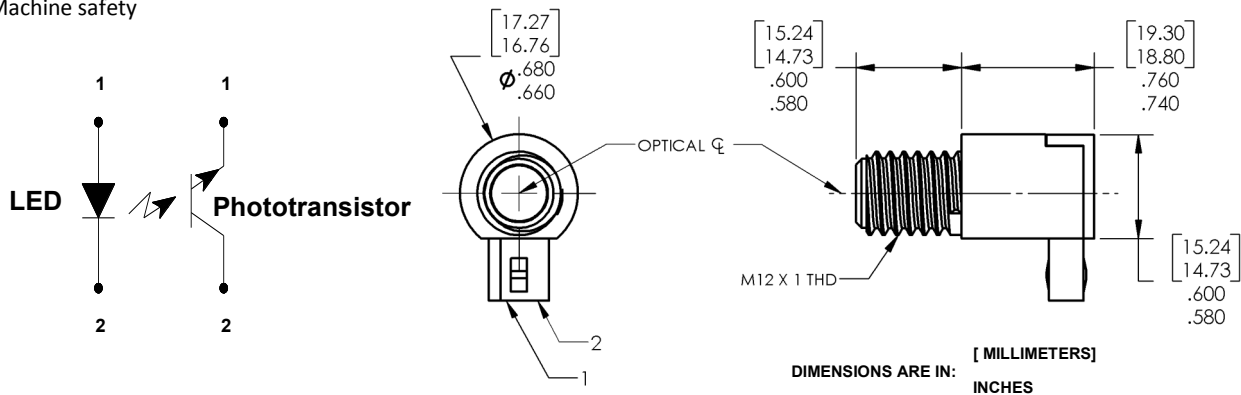
The OPB856 pair are designed to operate with separation distances between the LED and Phototransistor up to 12" (30.48 cm).

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

## Applications:

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

| Ordering Information     |                     |            |                      |
|--------------------------|---------------------|------------|----------------------|
| Optical Pair Part Number | LED Peak Wavelength | Sensor     | Connector Type       |
| OPB856Z                  | 935 nm              | Transistor | Use Molex 03-06-2023 |



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

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



RoHS

General Note  
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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## Electrical Specifications

| Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ 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 <sup>(1)</sup>  |   |     |     |     |               | 100 mW  |
| Output Phototransistor (See OP505 for additional information)                               |   |     |     |     |               |   |
| Collector-Emitter Voltage   |   |     |     |     |               | 30 V  |
| Emitter-Collector Voltage   |   |     |     |     |               | 5 V   |
| Power Dissipation <sup>(1)</sup>  |   |     |     |     |               | 100 mW  |
| Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)               |   |     |     |     |               |   |
| SYMBOL  | PARAMETER                                 | MIN | TYP | MAX | UNITS         | TEST CONDITIONS   |
| Input Diode (See OP165 for additional information)  |   |     |     |     |               |   |
| $V_F$   | Forward Voltage                           | -   | -   | 1.7 | V             | $I_F = 20\text{ mA}$  |
| $I_R$   | Reverse Current                           | -   | -   | 100 | $\mu\text{A}$ | $V_R = 2\text{ V}$  |
| Output Phototransistor (See OP505 for additional information)                               |   |     |     |     |               |   |
| $V_{(BR)CEO}$   | Collector-Emitter Breakdown Voltage       | 30  | -   | -   | V             | $I_C = 100\ \mu\text{A}$  |
| $V_{(BR)ECO}$   | Emitter-Collector Breakdown Voltage       | 5   | -   | -   | V             | $I_E = 100\ \mu\text{A}$  |
| $I_{CEO}$   | Collector Dark Current                    | -   | -   | 100 | nA            | $V_{CE} = 10\text{ V}, I_F = 0, E_E = 0$  |
| Combined  |   |     |     |     |               |   |
| $I_{C(ON)}$   | On-State Collector Current <sup>(3)</sup> | 1.8 | -   | -   | mA            | $V_{CE} = 5\text{ V}, I_F = 20\text{ mA}, d = 2''^{(1)} (50.8\text{ mm})^{(2)}$ |

### Notes:

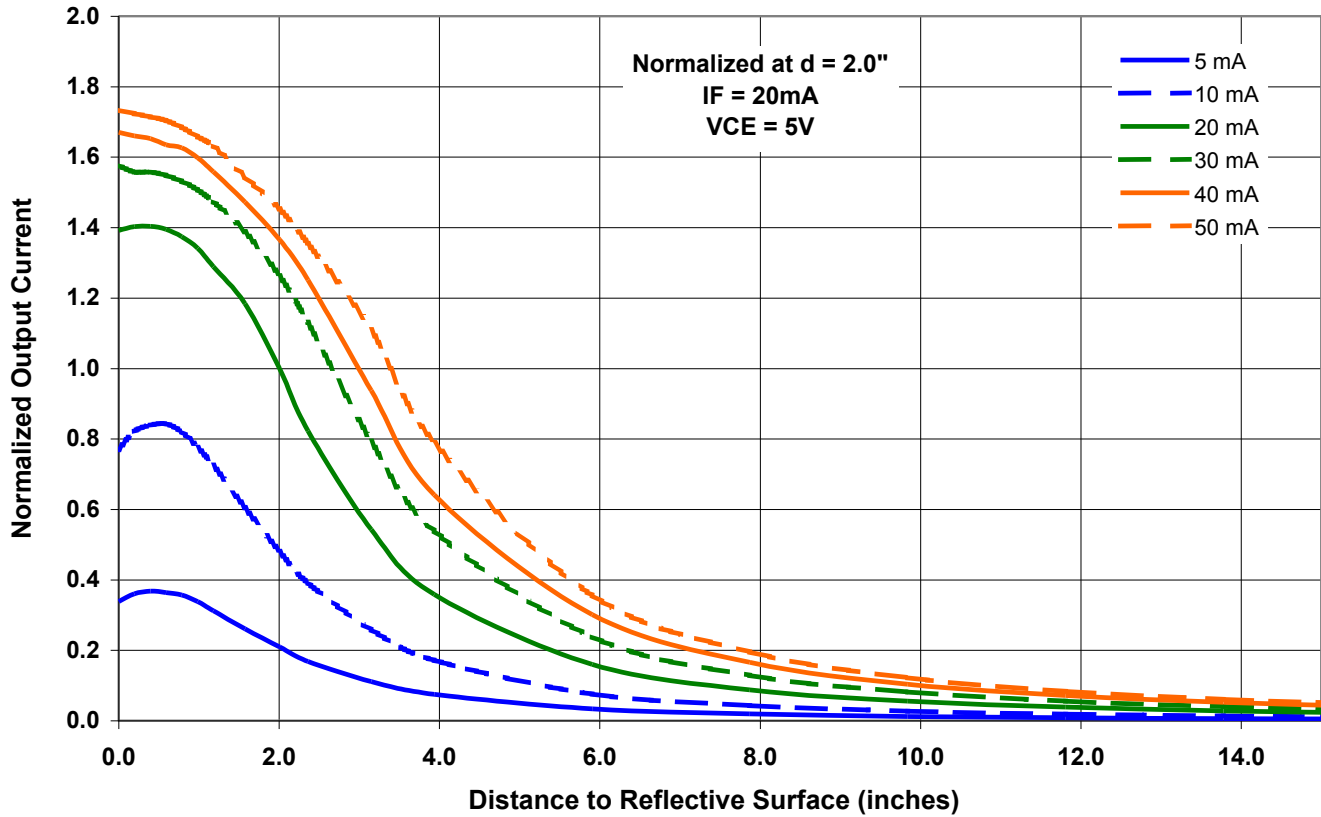
- (1) Derate linearly 1.67 mW/°C above 25 °C..
- (2) Distance between lenses along the optical axis is "d".
- (3) All parameters tested using pulse technique.

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Normalized Collector Current vs. Distance between Emitter and Sensor



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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
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- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
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Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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