

Fiber Optic Isolator— Phototransistor Sensor



OPI1280 Series

Features:

- Opaque plastic housings
- High noise immunity
- Visible Red LED with Phototransistor Output
- 0.100" (2.54 mm) lead spacing
- Data Transfer through plastic fiber optic cable
- Isolation voltage 15 KV (OPI1280-032), Longer versions higher



Description:

Each **OPI1280** consists of a visible Red LED and a Phototransistor sensor, which are housed in separate opaque molded plastic housings and coupled by plastic fiber optic cable. The heavy-duty opaque housing shields the optical signal from dust, making this series of devices ideal for dust contaminated environments.

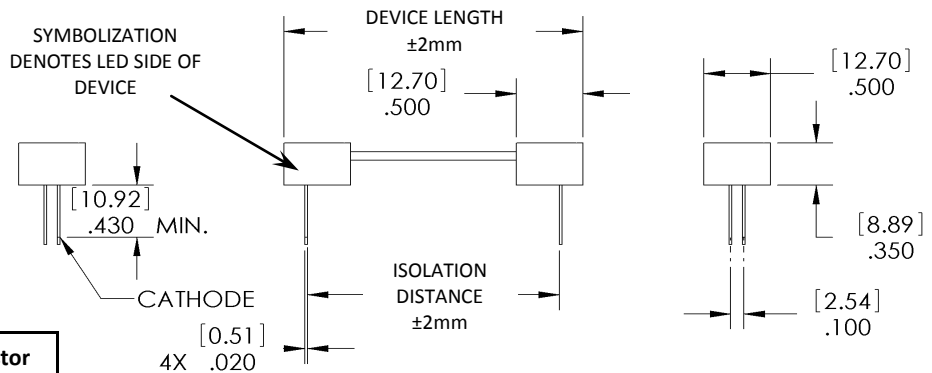
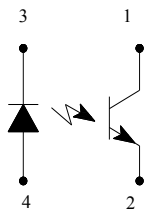
The OPI1280 series are designed for applications that require high voltage isolation between input and output or signal communication over short distances. Depending on the length of the fiber optic cable, the emitter does not have to be optically in-line with the sensor. The isolation voltage is greater than 10 K volts per inch (Isolation distance between components) for all versions of the **OPI1280**.

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

Applications:

- Requiring High Voltage isolation between input and output
- Electrical isolation in dirty environments
- Industrial equipment
- Medical equipment

| Ordering Information | | | | |
|----------------------|-------------------------|--------------------|---------------------|-----------------|
| Part Number | Isolation Distance ±2mm | Device Length ±2mm | LED Peak Wavelength | Lead Length |
| OPI1280-018 | 0.86" [22 mm] | 1.26" [32.0 mm] | 645 nm | 0.45" [11.4 mm] |
| OPI1280-026 | 1.18" [30 mm] | 1.57" [40.0 mm] | | |
| OPI1280-032 | 1.42" [36 mm] | 1.80" [45.8 mm] | | |
| OPI1280-066 | 2.76" [70 mm] | 3.15" [80.0 mm] | | |
| OPI1280-080 | 3.31" [84 mm] | 3.69" [93.8 mm] | | |



| Pin # | LED | Pin # | Transistor |
|-------|---------|-------|------------|
| 3 | Cathode | 1 | Collector |
| 4 | Anode | 2 | Emitter |



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.

OPTEK Technology, Inc.
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200
www.optekinc.com | www.ttelectronics.com

Electrical Specifications

| Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted) | |
|---|--|
| Storage Temperature Range (note 4) | -40°C to $+80^\circ\text{C}$ |
| Operating Temperature Range (note 4) | -20°C to $+75^\circ\text{C}$ |
| Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron] | $260^\circ\text{C}^{(1)}$ |
| Power Dissipation ⁽²⁾ | 100 mW |

| Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | |
|---|-------------------------------------|------|-----|-----|---------------|---|
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
| LED (See OVLGS0C8B9 for additional electrical information) | | | | | | |
| V _F | Forward Voltage | 1.2 | - | 2.3 | V | $I_F = 20\text{ mA}$ |
| SENSOR—Phototransistor (See OP550 for additional information) | | | | | | |
| I _{CEO} | Collector Dark Current | - | - | 50 | nA | $V_{CE} = 10\text{ V}, E_E = 0$ |
| V _{(BR)CEO} | Collector-Emitter Breakdown Voltage | 33 | - | - | V | $I_C = 100\ \mu\text{A}, E_E = 0$ |
| V _{(BR)ECO} | Emitter-Collector Breakdown Voltage | 5.5 | - | - | V | $I_E = 100\ \mu\text{A}, E_E = 0$ |
| COUPLED | | | | | | |
| I _{C(ON)} | Collector ON Current | 0.36 | - | - | mA | $V_{CE} = 5\text{ V}, I_F = 10\text{ mA}$ |
| I _{ISO} ⁽³⁾ | Leakage Current | - | - | 1.0 | μA | $I @ 7\text{ KV RMS}, 25^\circ\text{C}, \text{Test Duration} = 2\text{ sec.}$ |

Notes:

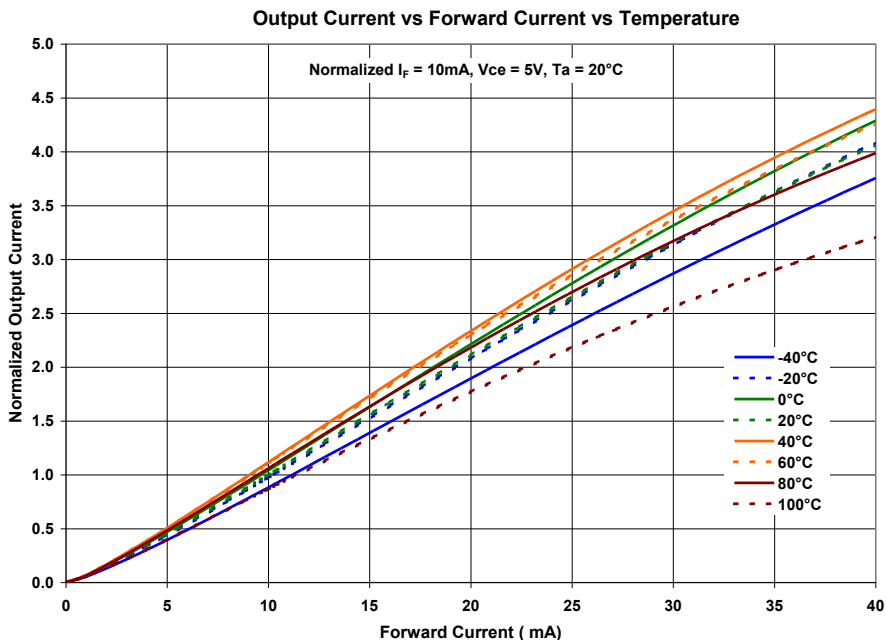
1. RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering. A maximum 20 grams force may be applied to the leads when soldering.
2. Derate linearly 1.33 mW/ $^\circ\text{C}$ above 25 $^\circ\text{C}$.
3. Isolation voltage testing is required.
4. Storage and Operating temperature values are based on the plastic optical interface temperature ratings. Please reference UL1577 and UL file AVLVZ.E89328

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Performance



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Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331