

# 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.

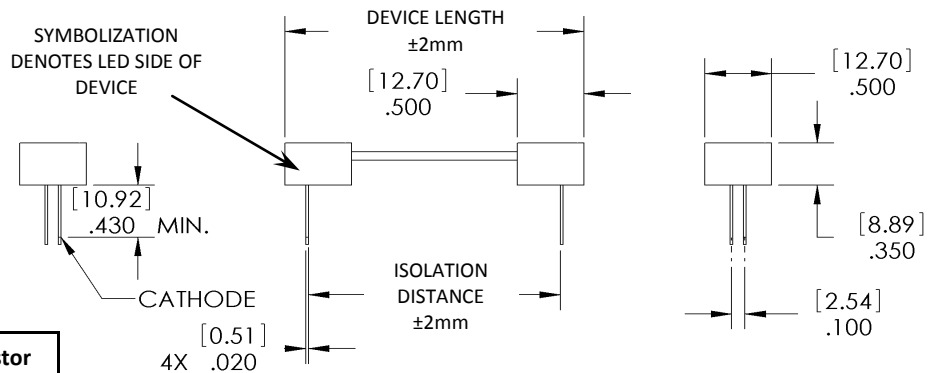
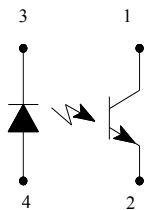
The OPI1280 series are designed for applications that require high voltage isolation between input and output or signal communication over short distances. Depending on the length of the fiber optic cable, the emitter does not have to be optically in-line with the sensor. The isolation voltage is greater 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.

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## Electrical Specifications

Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)	
Storage Temperature Range (note 4)	$-40^\circ\text{C}$ to $+80^\circ\text{C}$
Operating Temperature Range (note 4)	$-20^\circ\text{C}$ 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 <sup>(2)</sup>	100 mW

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

Notes:

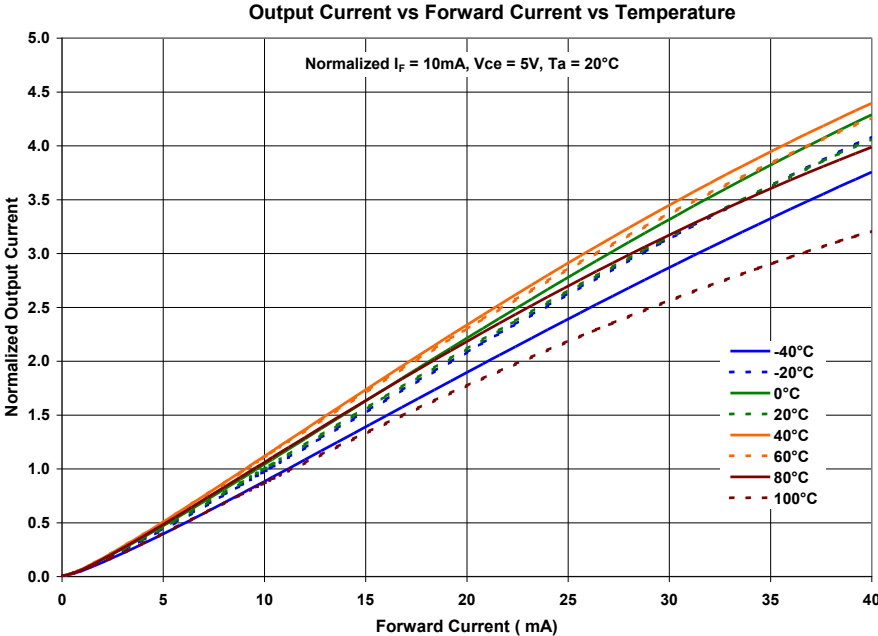
1. RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering. A maximum 20 grams force may be applied to the leads when soldering.
2. Derate linearly 1.33 mW/ $^\circ\text{C}$  above 25 $^\circ\text{C}$ .
3. Isolation voltage testing is required.
4. Storage and Operating 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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