

# High Reliability Photologic<sup>®</sup> Hermetic Sensors

## OPL800TX, OPL800TXV



### Features:

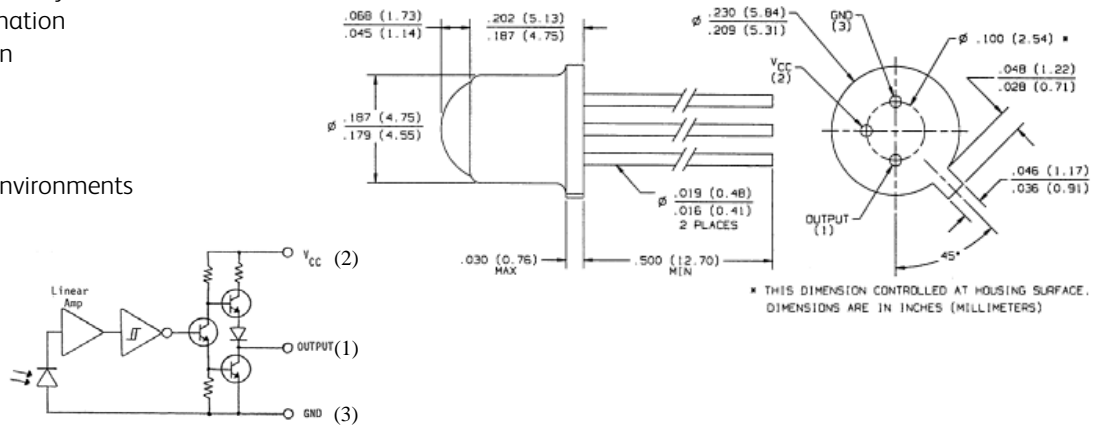
- 100 % screened and quality conformance tested to Optek's High Reliability program
- Direct TTL/STTL interface
- Hermetic, lensed TO-18 package
- Mechanically and spectrally matched to OP235/OP236TX/TXV LEDs

### Description:

The OPL800TX/TXV is a high reliability optoelectronic microcircuit that incorporates a photodiode, linear amplifier and Schmitt trigger on a single silicon chip. The device features TTL/STTL compatible logic level output which can drive up to 8 TTL loads without additional interface circuitry. The Photologic<sup>®</sup> chip is mounted on a standard TO-18 header with gold plated leads which is hermetically sealed in a lensed gold plated metal can. These devices are mechanically and spectrally matched to the OP235TX/TXV and OP236TX/TXV infrared emitting diodes. All parts are processed to Optek's 100 percent screening program patterned after Method 5004 of MIL-STD-883 and the quality conformance testing of Method 5005. Typical characteristic curves are shown on the commercial OPL800 datasheet.

### Applications:

- Non-contact reflective object sensor
- Assembly line automation
- Machine automation
- Machine Safety
- End of travel sensor
- Door sensor
- Military and harsh environments



### Absolute Maximum Ratings (T<sub>A</sub> = 25° C unless otherwise noted)

Supply Voltage, V <sub>CC</sub> (not to exceed 3 sec)	+10.0 V
Storage Temperature Range	-55° C to +150° C
Operating Temperature Range	-55° C to +125° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	240°C <sup>(1)</sup>
Power Dissipation	250 mW <sup>(2)</sup>
Duration of Output Short to V <sub>CC</sub> or Ground	1.00 sec
Irradiance	3 mW/cm <sup>2</sup>

#### Notes:

1. RMA flux is recommended. Duration can be extended to 10 seconds maximum when wave soldering.
2. Derate linearly 2.5 mW/°C above 25°C.
3. Light measurements are made with λ = 935 nm.

#### 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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### Group A Inspection-Electrical Tests

(Performed on each inspection lot after all devices have been subjected to the 100% processing requirements.)

SYMBOL	EXAMINATION OR TEST	METHOD	CONDITIONS	N/C	LIMIT		UNITS
					MIN	MAX	

#### Subgroup 1<sup>(3)</sup>

I <sub>CCH</sub>	Supply Current, High	3005	V <sub>CC</sub> = 5.5 V, E <sub>e</sub> = 1.0 mw/cm <sup>2</sup>	116/0		15.0	mA
I <sub>CCL</sub>	Supply Current, Low	3005	V <sub>CC</sub> = 5.5 V, E <sub>e</sub> = 0.0 mw/cm <sup>2</sup>			15.0	mA
V <sub>OL</sub>	Low Level Output Voltage	3007	V <sub>CC</sub> = 4.5 V, I <sub>OL</sub> = 12.8 mA, E <sub>e</sub> = 0.0 mw/cm <sup>2</sup>			0.40	V
V <sub>OH</sub>	High Level Output Voltage	3006	V <sub>CC</sub> = 4.5 V, I <sub>OH</sub> = -800 μA, E <sub>e</sub> = 1.0 mw/cm <sup>2</sup>		2.4		V
I <sub>OS</sub>	Short Circuit Output Current	3011	V <sub>CC</sub> = 4.5 V, E <sub>e</sub> = 1.0 mw/cm <sup>2</sup> , Output = Ground		-20	-100	mA

#### Subgroup 2<sup>(3)</sup> TA = +125°C

I <sub>CCH</sub>	Supply Current, High	3005	V <sub>CC</sub> = 5.5 V, E <sub>e</sub> = 1.0 mw/cm <sup>2</sup>	116/0		15.0	mA
I <sub>CCL</sub>	Supply Current, Low	3005	V <sub>CC</sub> = 5.5 V, E <sub>e</sub> = 0.0 mw/cm <sup>2</sup>			15.0	mA
V <sub>OL</sub>	Low Level Output Voltage	3007	V <sub>CC</sub> = 4.5 V, I <sub>OL</sub> = 12.8 mA,			0.40	V
V <sub>OH</sub>	High Level Output Voltage	3006	V <sub>CC</sub> = 4.5 V, I <sub>OH</sub> = -800 μA, E <sub>e</sub> =		2.4		V

#### Subgroup 3<sup>(3)</sup> TA = -55°C

I <sub>CCH</sub>	Supply Current, High	3005	V <sub>CC</sub> = 5.5 V, E <sub>e</sub> = 1.0 mw/cm <sup>2</sup>	116/0		15.0	mA
I <sub>CCL</sub>	Supply Current, Low	3005	V <sub>CC</sub> = 5.5 V, E <sub>e</sub> = 0.0 mw/cm <sup>2</sup>			15.0	mA
V <sub>OL</sub>	Low Level Output Voltage	3007	V <sub>CC</sub> = 4.5 V, I <sub>OL</sub> = 12.8 mA, E <sub>e</sub> = 0.0 mw/cm <sup>2</sup>			0.40	V
V <sub>OH</sub>	High Level Output Voltage	3006	V <sub>CC</sub> = 4.5 V, I <sub>OH</sub> = -800 μA, E <sub>e</sub> = 1.0 mw/cm <sup>2</sup>		2.4		V

#### Subgroup 3<sup>(3)</sup>

t <sub>r</sub> , t <sub>f</sub>	Rise and Fall Time	3004	V <sub>CC</sub> = 5.0 V, R <sub>L</sub> = 8TTL loads	116/0		100	ns
t <sub>PHL</sub>	Propagation Delay, Low-High	3003	V <sub>CC</sub> = 5.0 V, R <sub>L</sub> = 8TTL loads			10.0	μs
t <sub>PLH</sub>	Propagation Delay, High-Low	3003	V <sub>CC</sub> = 5.0 V, R <sub>L</sub> = 8TTL loads			10.0	μs

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