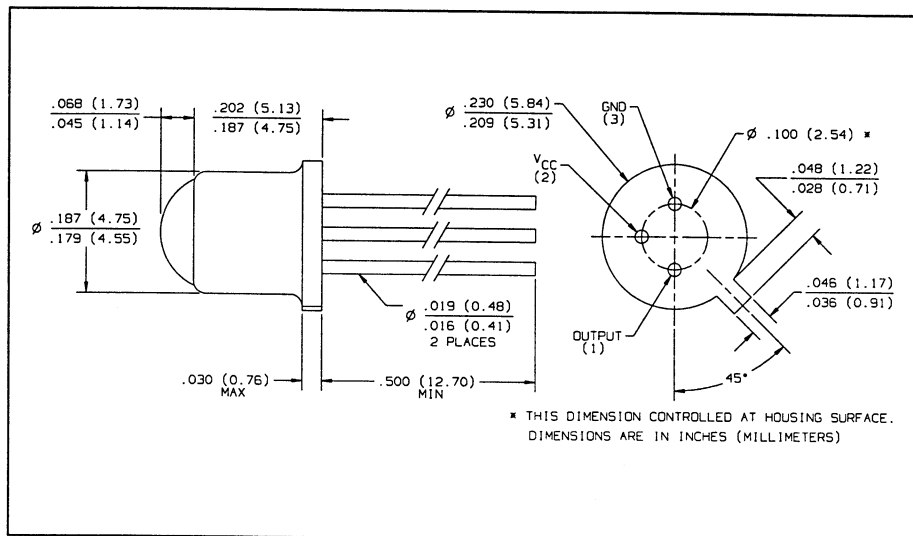
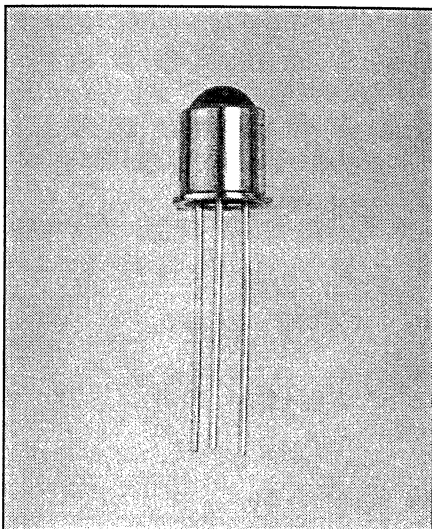


High Reliability Photologic® Hermetic Sensors Type OPL800B



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 OP235/OP236TX/TXV LEDs

Description

The OPL800B 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® chip is mounted on a standard TO-18 header which is hermetically sealed in a lensed metal can. These devices are mechanically and spectrally matched to the OP235TX/TXV and 236TX/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 in Method 5005 for Class B devices. Typical screening and lot acceptance tests are provided on page 13-4.

Typical characteristic curves are shown on the commercial OPL800 data sheet.

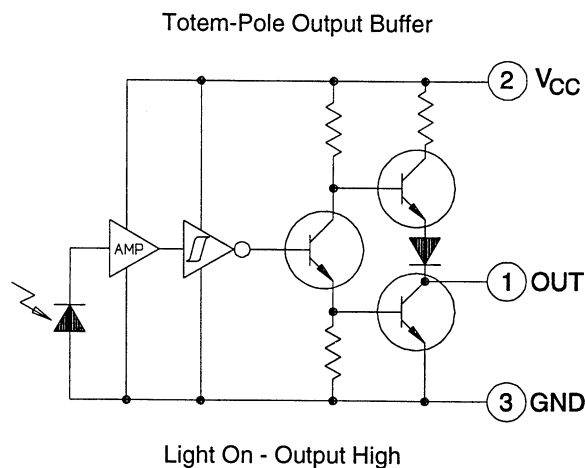
Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Supply Voltage, V_{CC} (not to exceed 3 sec.)	+10.0 V
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Operating Temperature Range	-55°C to $+125^\circ\text{C}$
Lead Soldering Temperature [1/16 (1.6 mm) inch from case for 5 sec. with soldering iron]	$240^\circ\text{C}^{(1)}$
Power Dissipation	250 mW ⁽²⁾
Duration of Output Short to V_{CC} or Ground	1.00 sec.
Irradiance	3 mW/cm ²

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when wave soldering.
- (2) Derate linearly 2.5mW/ $^\circ\text{C}$ above 25°C .
- (3) Light measurements are made with $\lambda = 935\text{ nm}$.

Schematic



Type OPL800B

Group A Inspection-Electrical Tests

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

Symbol	Examination or Test	MIL-STD-883		n/c	Limit		Units
		Method	Conditions		Min	Max	
Subgroup 1⁽⁵⁾				116/0			
I _{CCH}	Supply Current, High	3005	V _{CC} = 5.5 V, E _e = 1.0 mW/cm ²			15.0	mA
I _{CCL}	Supply Current, Low	3005	V _{CC} = 5.5 V, E _e = 0			15.0	mA
V _{OL}	Low Level Output Voltage	3007	V _{CC} = 4.5 V, I _{OL} = 12.8 mA, E _e = 0			0.40	V
V _{OH}	High Level Output Voltage	3006	V _{CC} = 4.5 V, I _{OH} = -800 μA, E _e = 1.0 mW/cm ²		2.4		V
I _{OS}	Short Circuit Output Current	3011	V _{CC} = 4.5 V, E _e = 1.0 mW/cm ² , Output = GND		-20	-100	mA
Subgroup 2⁽⁵⁾			T _A = +125° C	116/0			
I _{CCH}	Supply Current, High	3005	V _{CC} = 5.5 V, E _e = 1.0 mW/cm ²			15.0	mA
I _{CCL}	Supply Current, Low	3005	V _{CC} = 5.5 V, E _e = 0			15.0	mA
V _{OL}	Low Level Output Voltage	3007	V _{CC} = 4.5 V, I _{OL} = 12.8 mA, E _e = 0			0.40	V
V _{OH}	High Level Output Voltage	3006	V _{CC} = 4.5 V, I _{OH} = -800 μA, E _e = 1.0 mW/cm ²		2.4		V
Subgroup 3⁽⁵⁾			T _A = -55° C	116/0			
I _{CCH}	Supply Current, High	3005	V _{CC} = 5.5 V, E _e = 1.0 mW/cm ²			15.0	mA
I _{CCL}	Supply Current, Low	3005	V _{CC} = 5.5 V, E _e = 0			15.0	mA
V _{OL}	Low Level Output Voltage	3007	V _{CC} = 4.5 V, I _{OL} = 12.8 mA, E _e = 0			0.40	V
V _{OH}	High Level Output Voltage	3006	V _{CC} = 4.5 V, I _{OH} = -800 μA, E _e = 1.0 mW/cm ²		2.4		V
Subgroup 4⁽⁵⁾				116/0			
t _r , t _f	Rise and Fall Time	3004	V _{CC} = 5.0 V, R _L = 8 TTL loads			100	ns
t _{PHL}	Propagation Delay, Low-High	3003	V _{CC} = 5.0 V, R _L = 8 TTL loads			10.0	μs
t _{PHL}	Propagation Delay, High-Low	3003	V _{CC} = 5.0 V, R _L = 8 TTL loads			10.0	μs

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COMPONENTS

Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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