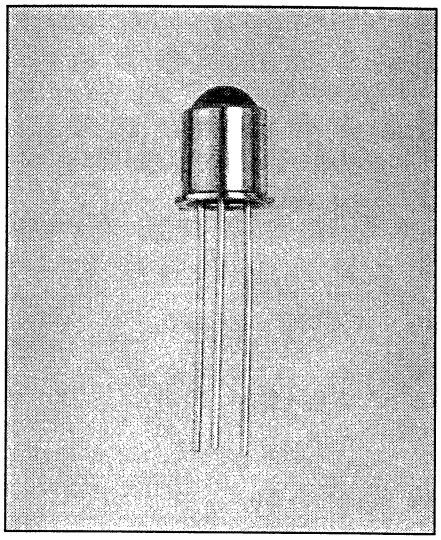
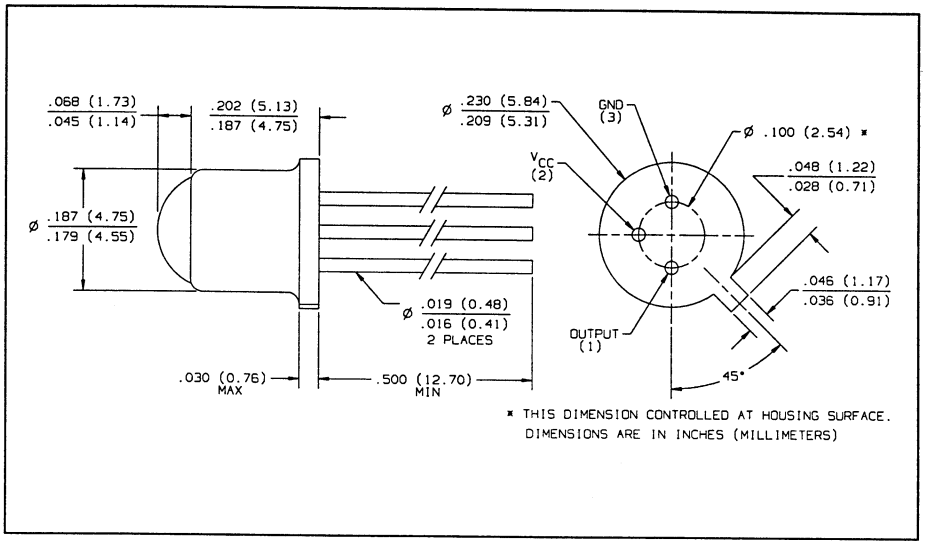
High Reliability Photologic® Hermetic Sensors
Type OPL800B





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 acceoptance tests are provided on page 13-4.

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

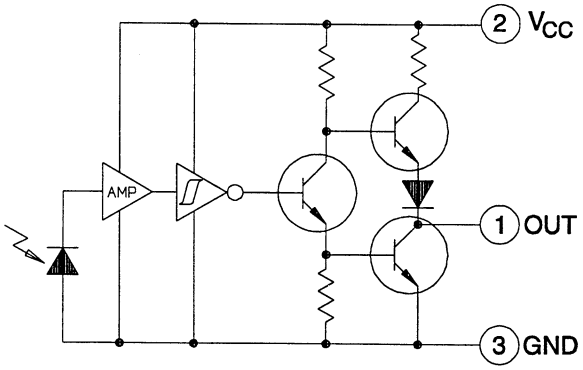
Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Supply Voltage, V_{CC} (not to exceed 3 sec.)	+10.0 V
Storage Temperature Range	-65° C to +150° C
Operating Temperature Range	-55° C to +125° C
Lead Soldering Temperature [1/16 (1.6 mm) inch from case for 5 sec. with soldering iron]	240° 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/° C above 25° C.
(3) Light measurements are made with λ = 935 nm.

Schematic

Totem-Pole Output Buffer



Light On - Output High

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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