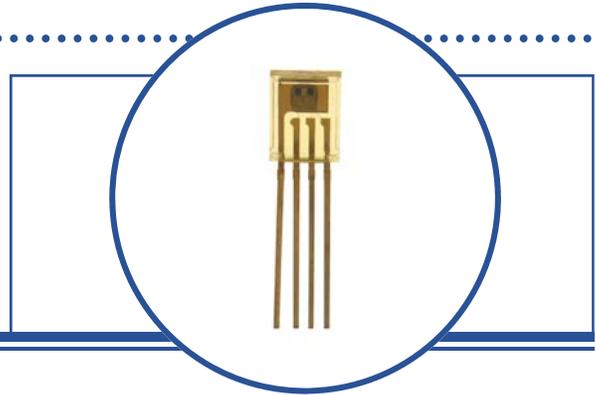


Dual Channel Photologic Encoder Detector OPL583



Features:

- Two matched detectors with photolithographic control of relative position
- Dual Photologic® circuitry in single package provides reduced component count
- Open collector inverter output for flexibility of circuit interface
- Low cost plastic housing



Description:

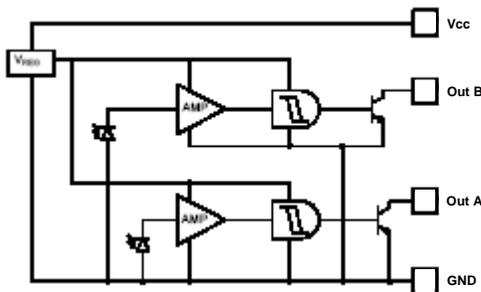
OPL583 contains a monolithic integrated circuit that incorporates two independent photodiodes, two linear amplifiers, two Schmitt trigger circuits and two output transistors which are all served by a common voltage regulator. The fixed position of the two photodiodes and the matched characteristics of the two channels allow considerable design flexibility. The outputs are TTL/LSTTL compatible and can drive up to 8 TTL loads over a voltage range from 4.5 to 16 V.

Applications include linear and rotary encoders with resolutions determined by external apertures.

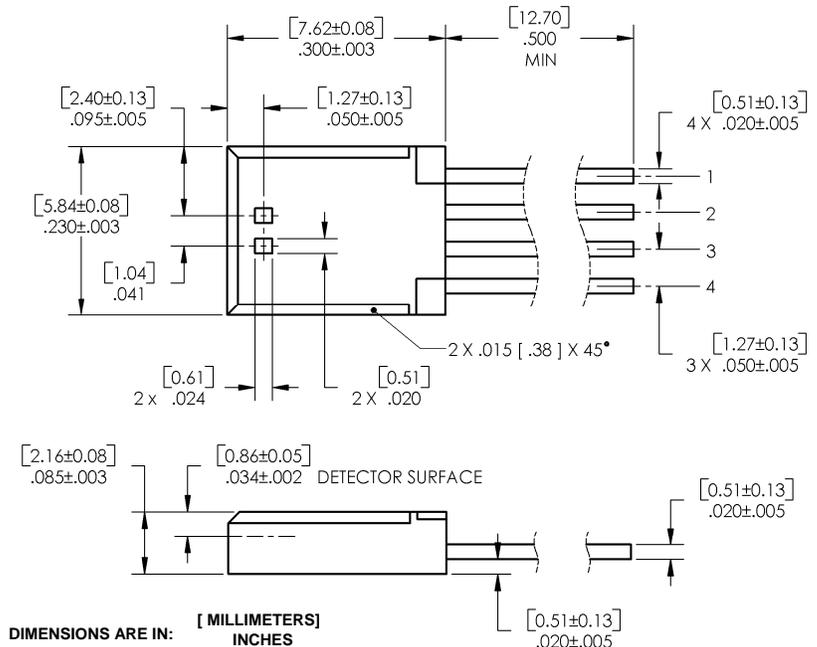
Applications:

- Rotary and Linear encoders
- Non-contact reflective object sensor
- Assembly line automation
- Machine automation
- Machine safety
- End of travel sensor

Ordering Information				
Part Number	Photologic®	Input Power E_E (mW/cm ²) Min / Max	V _{CC} (V) Min / Max	Lead Length/ Spacing
OPL583	Dual Channel	0.05 / 0.25	4.5/16	0.50" / 0.05"



Pin #	Description
1	V _{CC}
2	Out-B
3	Out-A
4	Ground



RoHS

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

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

Operating Temperature Range	-40° C to +85° C
Storage Temperature Range	-40° C to +100° C
Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron]	260°C ⁽¹⁾
Output Photologic®	
Supply Voltage V _{CC}	18 V ⁽²⁾
Power Dissipation	200 mW ⁽³⁾
Duration of Output Short to V _{CC}	1 second
Voltage at Output	18 V
Low Level Output Current (sinking)	40 mA

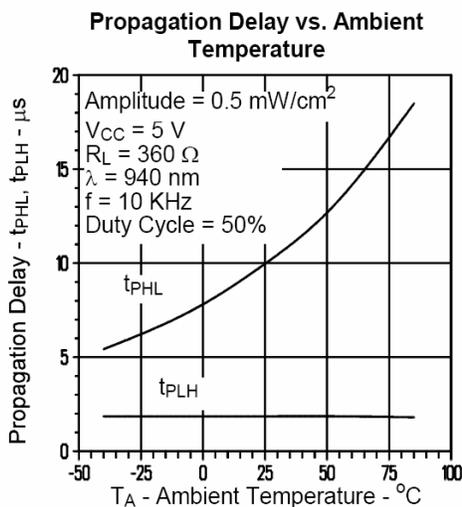
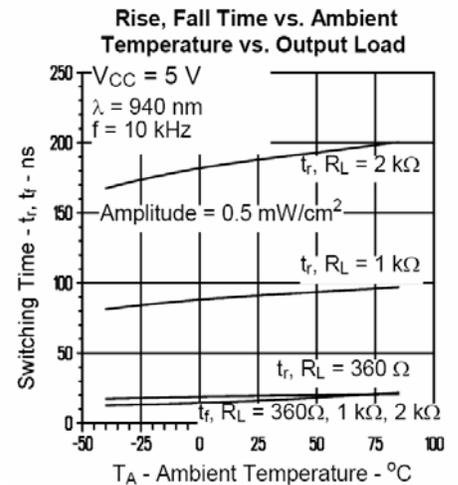
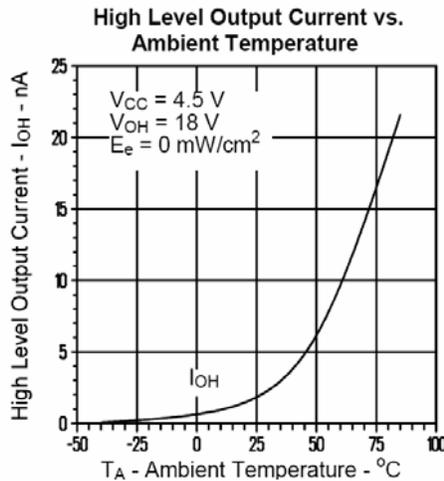
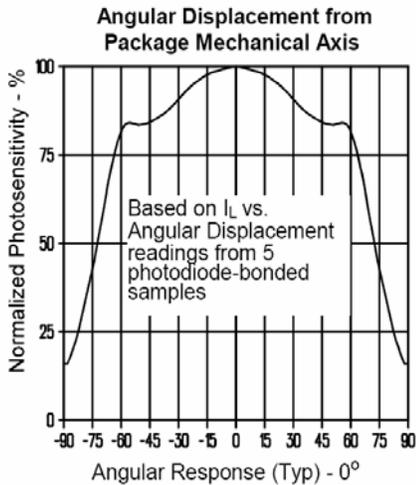
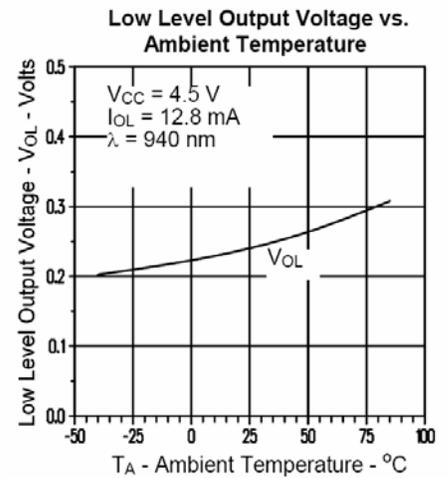
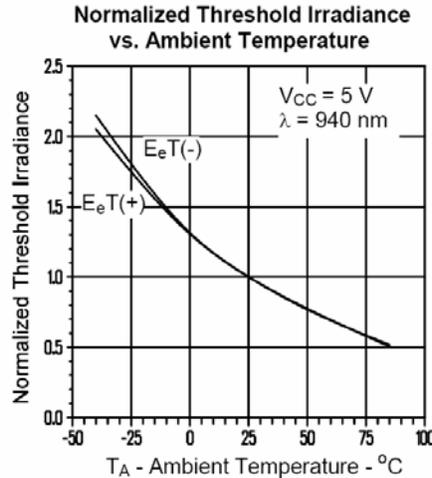
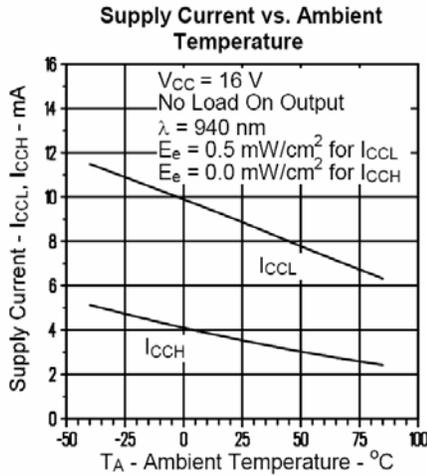
Electrical Characteristics (T_A = 25°C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
V _{CC}	Operating Supply Voltage ⁽⁴⁾	4.5	-	16	V	-
E _{ET} ⁽⁺⁾	Positive-Going Threshold Irradiance ⁽⁵⁾	0.05	0.10	0.25	mW/cm ²	-
E _{ET} ⁽⁺⁾ /E _{ET} ⁽⁻⁾	Hysteresis Ratio	1.1	1.5	2	-	-
MATCH	Channel Match E _{ET} ^(+A) / E _{ET} ^(+B)	0.67	1	1.5	-	-
I _{CCL}	Supply Current Both Outputs Low (both photodiodes irradiated)	-	8.5	12	mA	E _E = 0.5 mW/cm ² (no load on output)
I _{CCH}	Supply Current Both Outputs High (both photodiodes shaded)	-	3.5	6	mA	E _E = 0 mW/cm ² (no load on output)
I _{CCM}	Supply Current Mixed Output States (one high, one low)	-	6	-	mA	E _E = 0 mW/cm ² and 0.5 mW/cm ²
I _{oh}	High Level Output Current	-	1	30	μA	E _E = 0 mW/cm ² , V _{OH} = 16 V
V _{OL}	Low Level Output Voltage	-	0.21	0.4	V	E _E = 0.5 mW/cm ² , I _{OL} = 12.8 mA
T _{PHL} T _{PLH}	Propagation Delay Output High to Low Output Low to High	-	2 10	-	μs μs	V _{CC} = 5 V, R _L = 360 Ω E _E = 0 or 0.5 mW/cm ² , f = 10 kHz, D.C. = 50%
t _r t _f	Output Rise Time Output Fall Time	-	20 15	-	ns ns	-

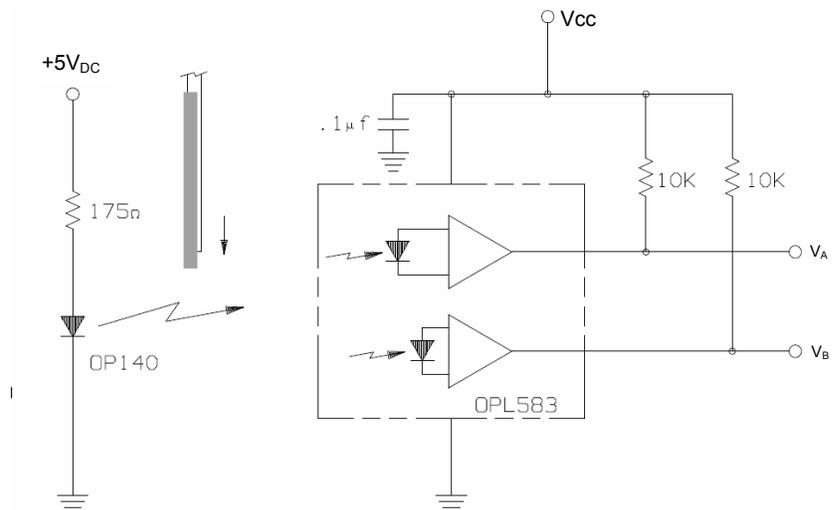
Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly 0.37 V/°C above 58° C.
- (3) Derate linearly 2.67 mW/° C above 25° C.
- (4) A 0.01 μF capacitor should be used across the V_{CC} and GND leads to stabilize the power supply line.
- (5) Irradiance measurements are made with λ = 940 nm.

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Typical Application Circuit



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