

Photologic® Dual Channel Encoder

OPB950Z



Features:

- Dual channel outputs for Quadrature Output
- Open collector inverter outputs
- 0.010" (0.254 mm) sensor apertures for high resolution
- Snap mount
- Mates with Molex 22-01-1042

Description:

The OPB950Z consists of an infrared Light Emitting Diode (LED) with a current limiting resistor and a monolithic Photologic® integrated circuit which incorporates two voltage regulators, independent photodiodes, linear amplifiers, Schmitt trigger circuits and output transistors. It features a dual open-collector output that is compatible with TTL/LSTTL and can drive up to 8 TTL loads.

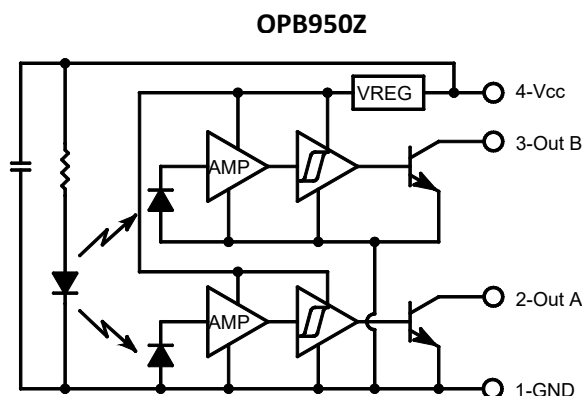
Applications include linear and rotary encoders with high resolution provided by internal 0.010" (0.254 mm) apertures located in front of each Photologic® sensor on 0.040" (1.02 mm) center line spacing.

Custom electrical, wire, cabling and connectors are available. Contact your local representative or OPTEK for more information.

Applications:

- Mechanical switch replacement
- Speed and direction indication
- Mechanical limit indication
- Rotary encoders
- Edge sensing
- Sliding Door Automotive and Liftgate applications

Ordering Information					
Part Number	LED Peak Wavelength	Sensor	Slot Width / Depth	Aperture Emitter/ Sensor	Connector
OPB950Z	890 nm	Dual TTL	0.200" / 0.350"	0.05" / 0.01"	Wellpex C25002WS-04-LF



General Note

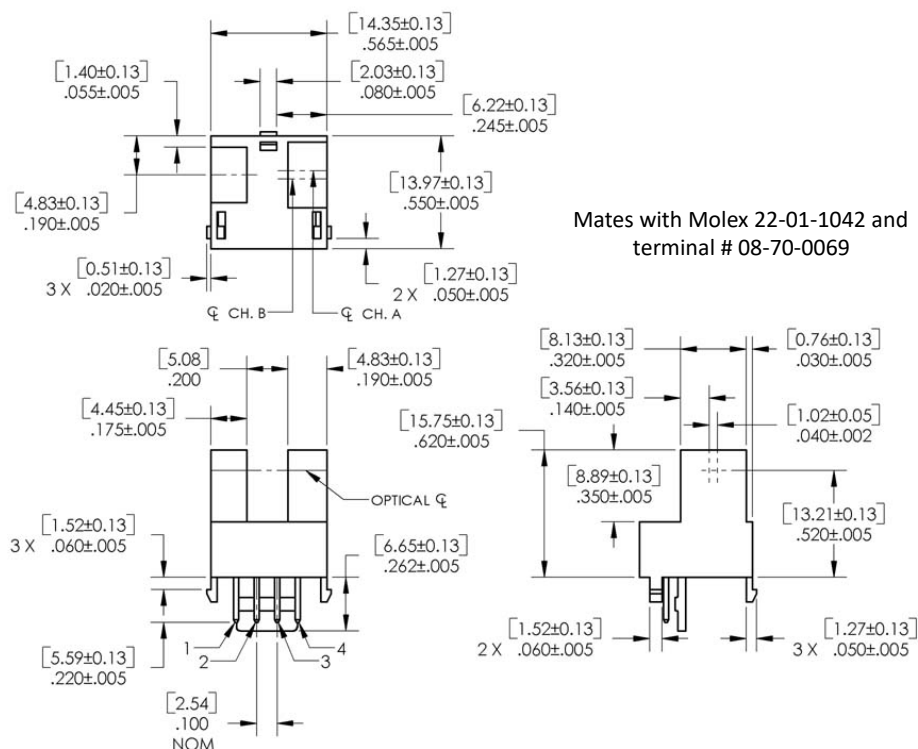
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Packaging

OPB950Z

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



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Electrical Specifications

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

Storage & Operating Temperature Range	-40° C to +85° C
Input Diode	
Forward DC Current	50 mA
Reverse DC Voltage	2.0 V
Power Dissipation ⁽¹⁾	100 mW
Output Photologic®	
Supply Voltage, V_{CC}	5.5 V
Voltage at Output	16 V
Power Dissipation ⁽²⁾	200 mW
Sinking Output Current	40 mA

Electrical Characteristics ($T_A = 25^\circ \text{C}$ and $V_{CC} = +5 \text{ Volts}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
V_{CC}	Operating Supply Voltage	4.5	-	5.5	V	-
$E_{ET}^{(+)} / E_{ET}^{(-)}$	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 (LED On, No Target)	-	32	39	mA	$E_E = 0.5 \text{ mW/cm}^2$ (no load on output)
I_{CCH}	Supply Current, Both Outputs High	-	27	32	mA	$E_E = 0 \text{ mW/cm}^2$ (no load on output)
I_{CCM}	Supply Current, Mixed Output States (one high, one low)	-	30	-	mA	$E_E = 0 \text{ mW/cm}^2$ and 0.5 mW/cm^2
I_{OH}	High Level Output Current	-	1	30	μA	$E_E = 0 \text{ mW/cm}^2$, $V_{OH} = 16 \text{ V}$
V_{OL}	Low Level Output Voltage	-	0.21	0.4	V	$E_E = 0 \text{ mW/cm}^2$, $I_{OL} = 12.8 \text{ mA}$
T_{PHL} T_{PLH}	Propagation Delay Output High to Low Output Low to High	-	2 10	-	μs μs	$V_{CC} = 5 \text{ V}$, $R_L = 360 \Omega$ $E_E = 0$ or 0.5 mW/cm^2 , $f = 10 \text{ kHz}$, D.C. = 50%
t_r t_f	Output Rise Time Output Fall Time	-	20 15	-	ns ns	-

Notes:

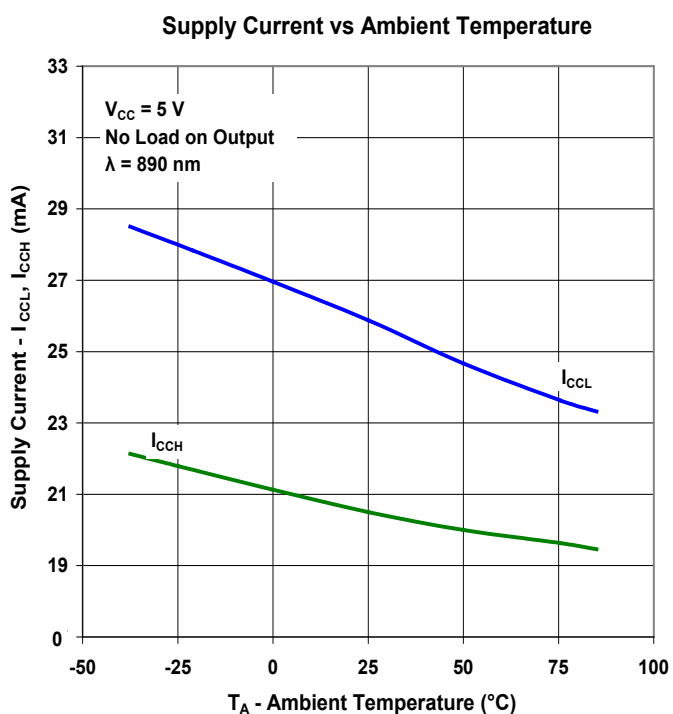
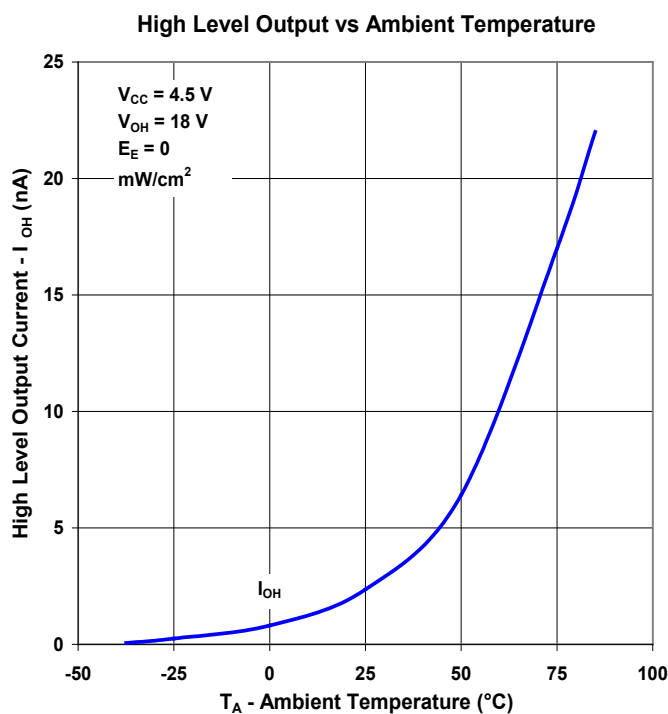
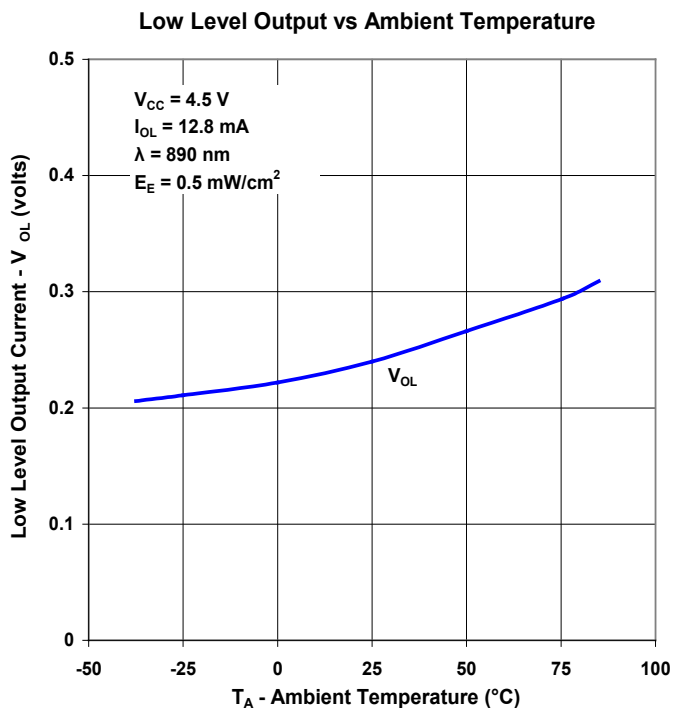
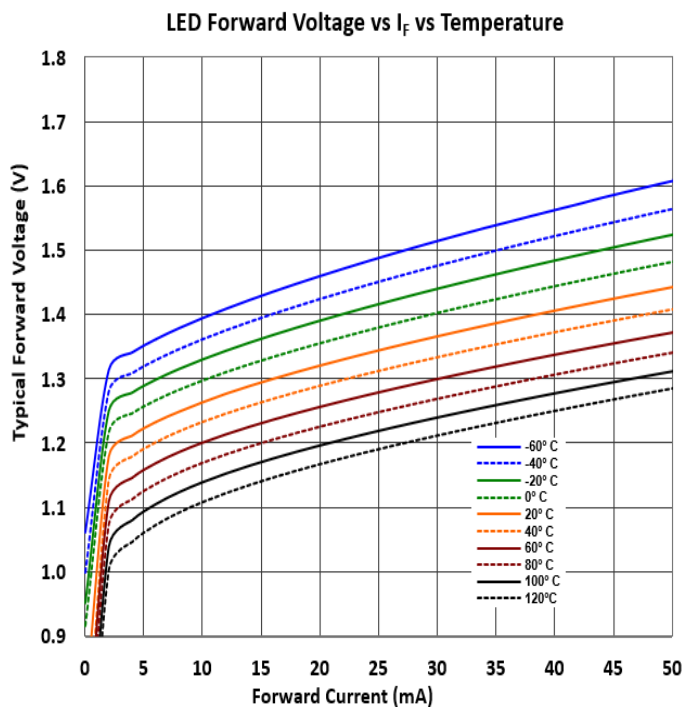
- (1) Derate linearly 1.33 mW/°C above 25° C.
- (2) Derate linearly 3.00 mW/°C above 25° C.

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Typical Performance

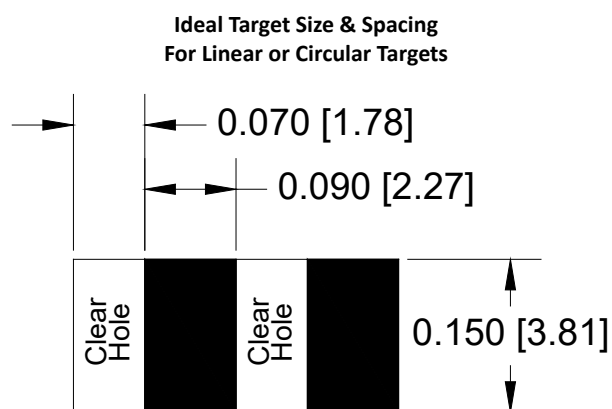
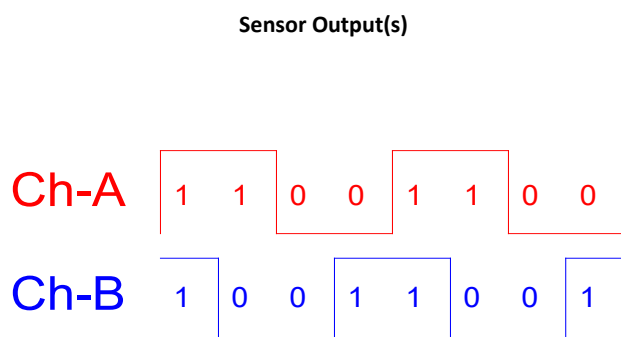
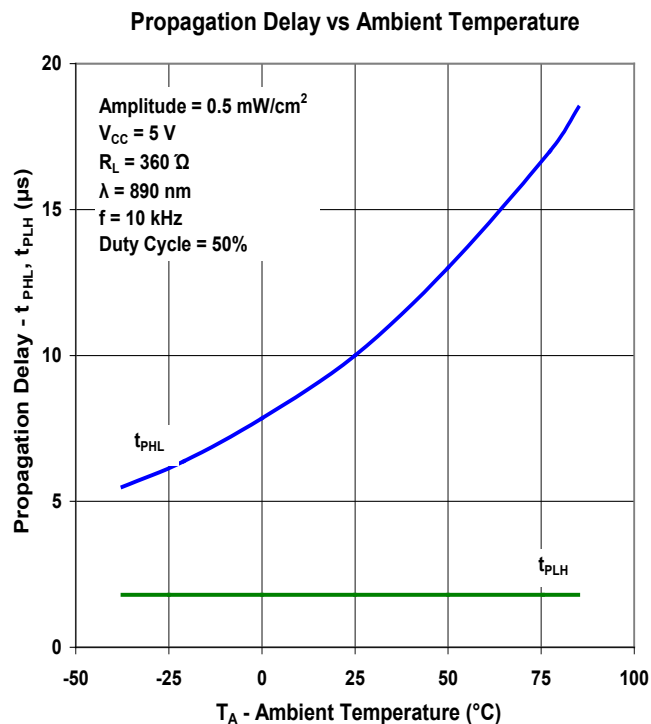
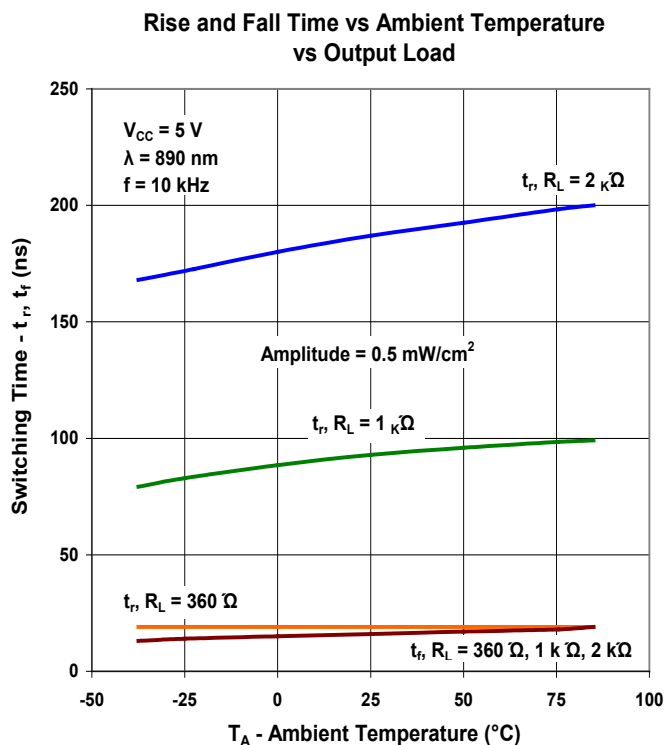


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Typical Performance



Dimensions are in inches [millimeters]

Please consult OPTEK for target design and sensor location relative to the target.

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