



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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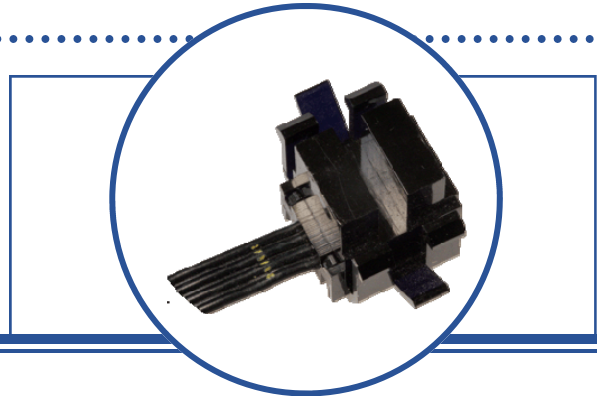


Photologic® Dual Channel Encoder OPBA301, OPBA303



Features:

- Dual channel outputs for Quadrature output
- Open collector inverter outputs
- 0.010" (0.254 mm) sensor apertures for high resolution
- Snap mount



Description:

The **OPBA301** and **OPBA303** device consists of an infrared emitting diode and a monolithic integrated circuit which incorporates two independent photodiodes, linear amplifiers, Schmitt trigger circuits and output transistors. The **OPBA301** features a dual TTL output that is compatible with TTL/LSTTL and can drive 8 TTL loads. The **OPBA303** has a 10K Ω pull-up output with EMI protection on each channel.

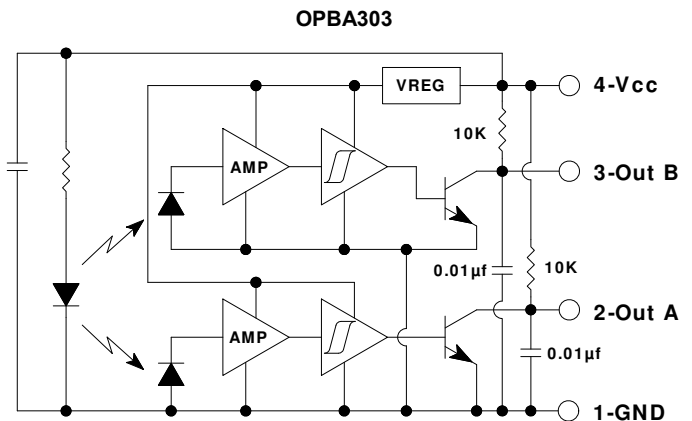
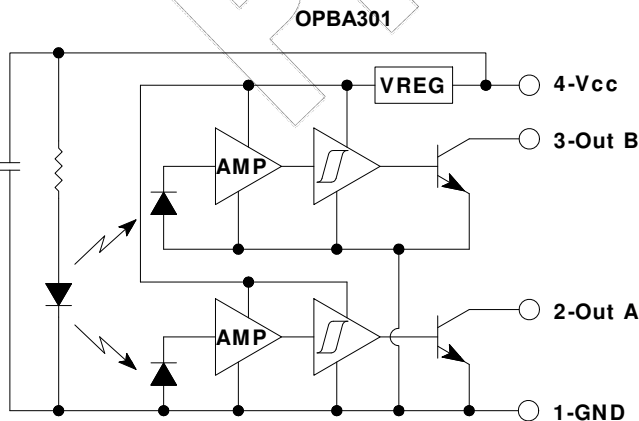
Applications include linear and rotary encoders with high resolution provided by internal 0.010" (0.254 mm) apertures located in front of the Photologic® sensor on 0.040" (1.02 mm) center line spacing.

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

Applications:

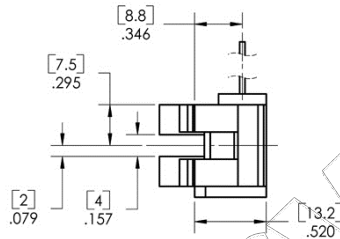
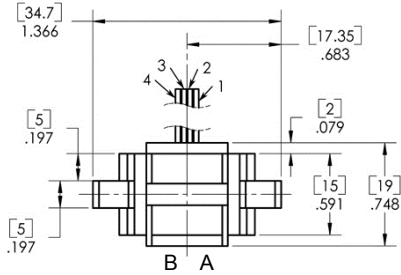
- Mechanical switch replacement
- Speed and direction indication
- Mechanical limit indication
- Rotary encoders
- Edge sensing
- Sliding door automotive and liftgate applications

Ordering Information					
Part Number	LED Peak Wavelength	Sensor Output	Slot Width / Depth	Aperture Emitter/Sensor	Wire Length
OPBA301	890 nm	Dual TTL	0.200" / 0.350"	0.05" / 0.01"	24" 22 AWG Flat
OPBA303		10K Pull-Up			

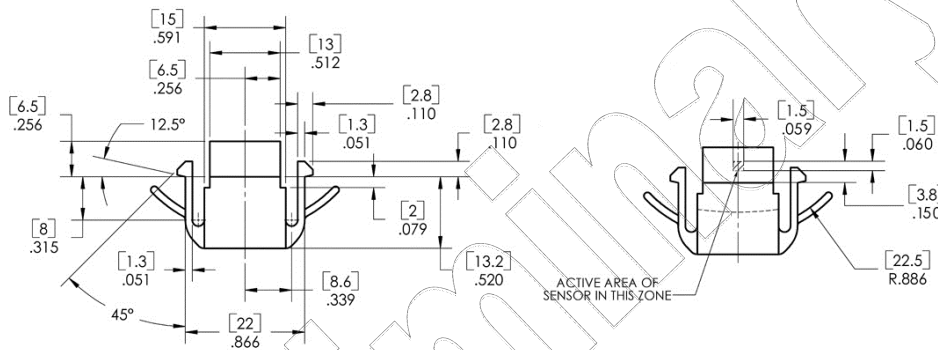


OPTEK Technology is TS 16949:2002 certified, any changes will be consistent with TS 16949:2002 procedures.

OPBA301, OPBA303



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



CONTAINS POLYSULFONE
 To avoid stress cracking, we suggest using ND Industries' **Vibra-Tite** for thread-locking. **Vibra-Tite** evaporates fast without causing structural failure in OPTEK's molded plastics.

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

Storage & Operating Temperature Range	-40°C to +85° C
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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 OPBA301 OPBA303	18 V 5.5V
Power Dissipation ⁽²⁾	200 mW
Sinking Output Current	40 mA

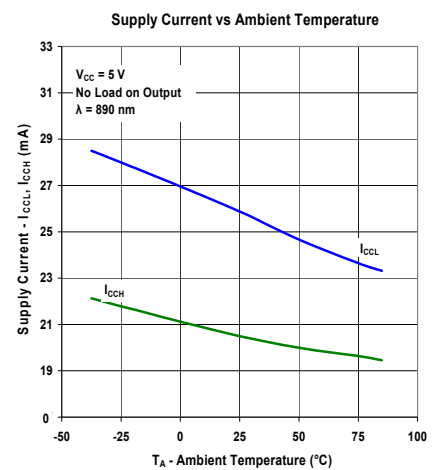
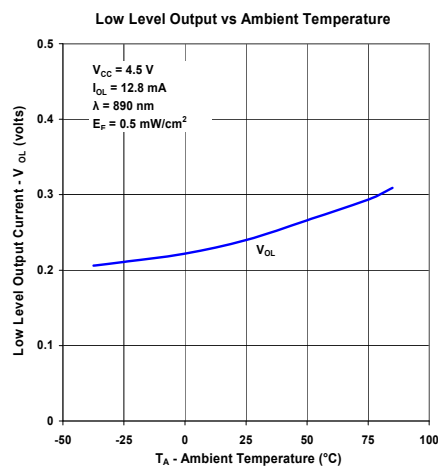
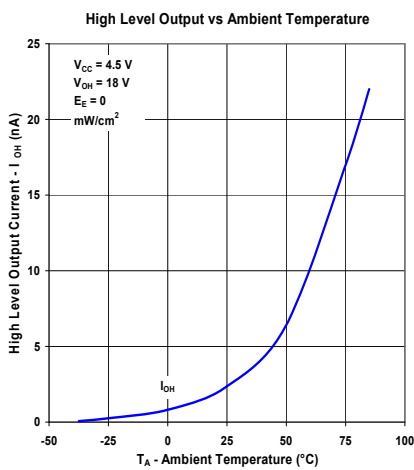
DIMENSIONS ARE IN: [MILLIMETERS]
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Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
V_{CC}	Supply Voltage	4.5	-	5.5	V	
Output Photologic® Sensor						
I_{CCL}	Supply Current Both Outputs Low (both photodiodes irradiated)	-	25.5	29	mA	Unblocked condition (no load on output)
I_{CCH}	Supply Current Both Outputs High (both photodiodes shaded)	-	20.5	23	mA	Blocked condition (no load on output)
I_{CCM}	Supply Current Mixed Output States (one high, one low)	-	23	-	mA	1 blocked condition 1 unblocked condition
I_{OH}	High Level Output Current	-	1	30	μA	$V_{OH} = 16\text{ V}$ (blocked condition)
V_{OL}	Low Level Output Voltage	-	0.21	0.40	V	$I_{OL} = 12.8\text{ mA}$ (unblocked condition)
t_{PHL}, t_{PLH}	Propagation Delay Output High to Low Output Low to High	-	2 10	-	μs μs	$V_{CC} = 5\text{ V}$, $R_L = 360\ \Omega$, $f = 10\text{ kHz}$, $DC = 50\%$
t_r, t_f	Output Rise Time Output Fall Time	-	20 5	-	ns ns	$R_L = 360\ \Omega$

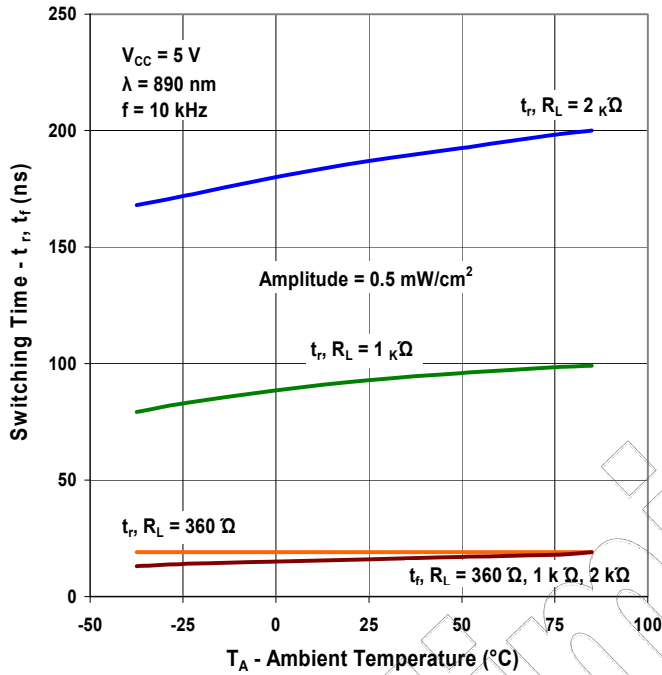
Performance Curves



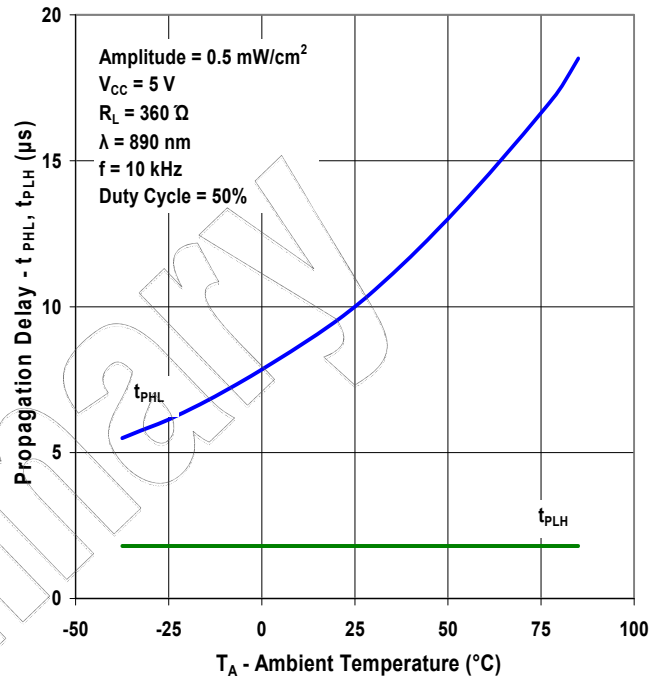
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Performance Curves

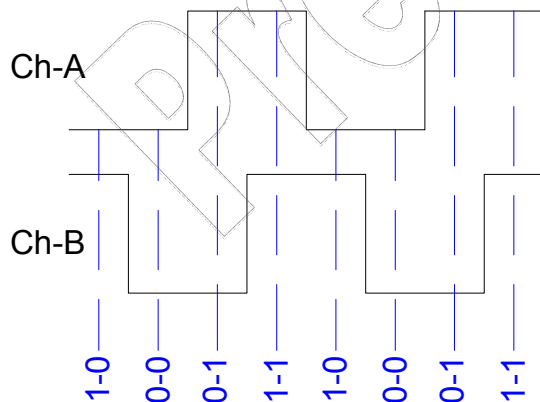
Rise and Fall Time vs Ambient Temperature vs Output Load



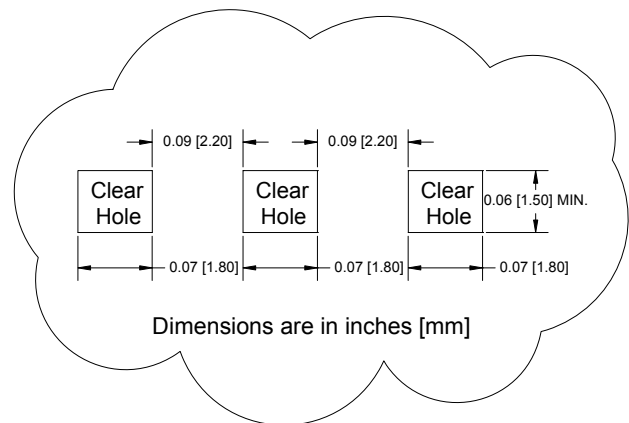
Propagation Delay vs Ambient Temperature



Sensor Output(s)



Ideal Target Size & Spacing For Linear or Circular Targets



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

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