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!


## Contact us

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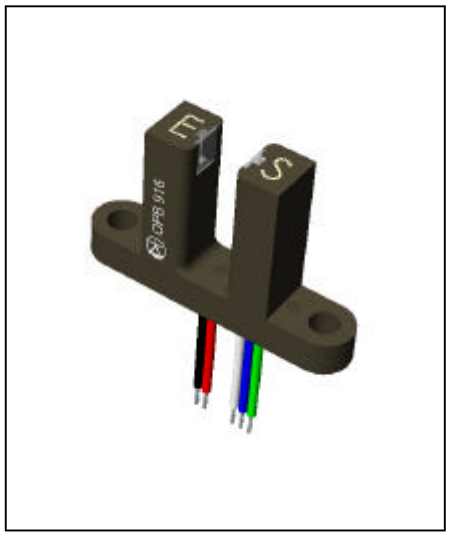
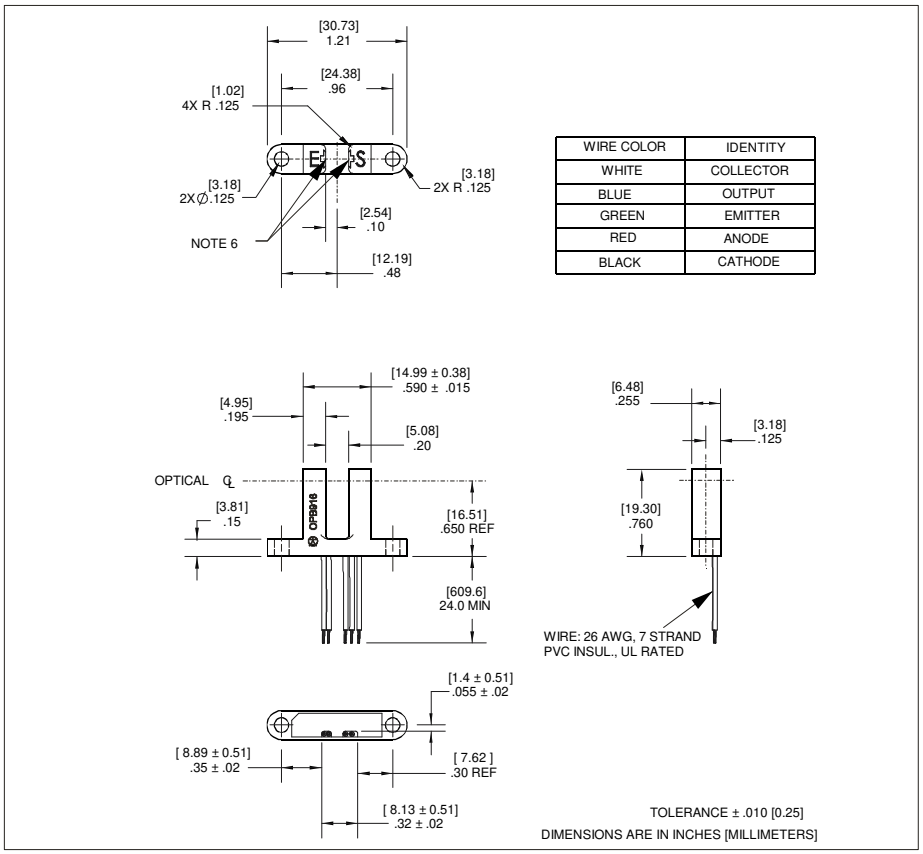
# Photologic® Slotted Optical Switches
## Type OPB916 Series






| WIRE COLOR | IDENTITY |
|---|---|
| WHITE | COLLECTOR |
| BLUE | OUTPUT |
| GREEN | EMITTER |
| RED | ANODE |
| BLACK | CATHODE |

### Features

- Choice of output configuration
- 24” min 26 AWG wires
- Low power consumption

### Description

The OPB916 consists of an infrared emitting diode and a Photologic® photo integrated circuit mounted in an opaque housing with clear windows for dust protection. The deep slot allows for a longer reach of the optical path from the mounting plane, .650” (16.51 mm).

Internal apertures are .010” x 0.06” for the Photologic’s “S side” and .050” x 0.06” for the LED, “E side”. Two logic states and two electrical output types are available.

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

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

Supply Voltage $V_{CC}$ (Not to exceed 3 sec.) . . . . . 18 V
Storage and Operating Temperature Range . . . . . -40° C to +80° C
Input Diode Power Dissipation . . . . . 100 mW(1)
Output Photologic® Power Dissipation . . . . . 90 mW(2)
Voltage at Output Lead (Open Collector Output) . . . . . 35 V
Diode Forward D.C. Current . . . . . 50 mA
Diode Reverse D.C. Voltage . . . . . 2 V

**NOTES:**
(1) Derate linearly 1.67 mW/° C above 25° C.
(2) Derate linearly 2.67 mW/° C above 70° C.
(3) Clear dust protection.
(4) Normal application would be with light source blocked, simulated by $I_F$ = 0 mA.
(5) All parameters tested using pulse technique.

**PRECAUTIONS:** Exposure of the plastic body to chlorinated hydrocarbons and ketones such as thread lock and instant adhesive products will degrade the plastic body. Cleaning agents methanol and isopropanol are recommended. Spray or wipe do not submerge.

**Visit our website at www.optekinc.com or email us at sensors@optekinc.com**

For RoHS compliant devices add "Z" to the end of the part number: OPB916BZ

# PART NUMBER GUIDE

**O P B 9 1 6 X X X**

Optek Assembly

Photologic® Photo Integrated Circuit

Optical Center Line .90”

Electrical Specification Variations

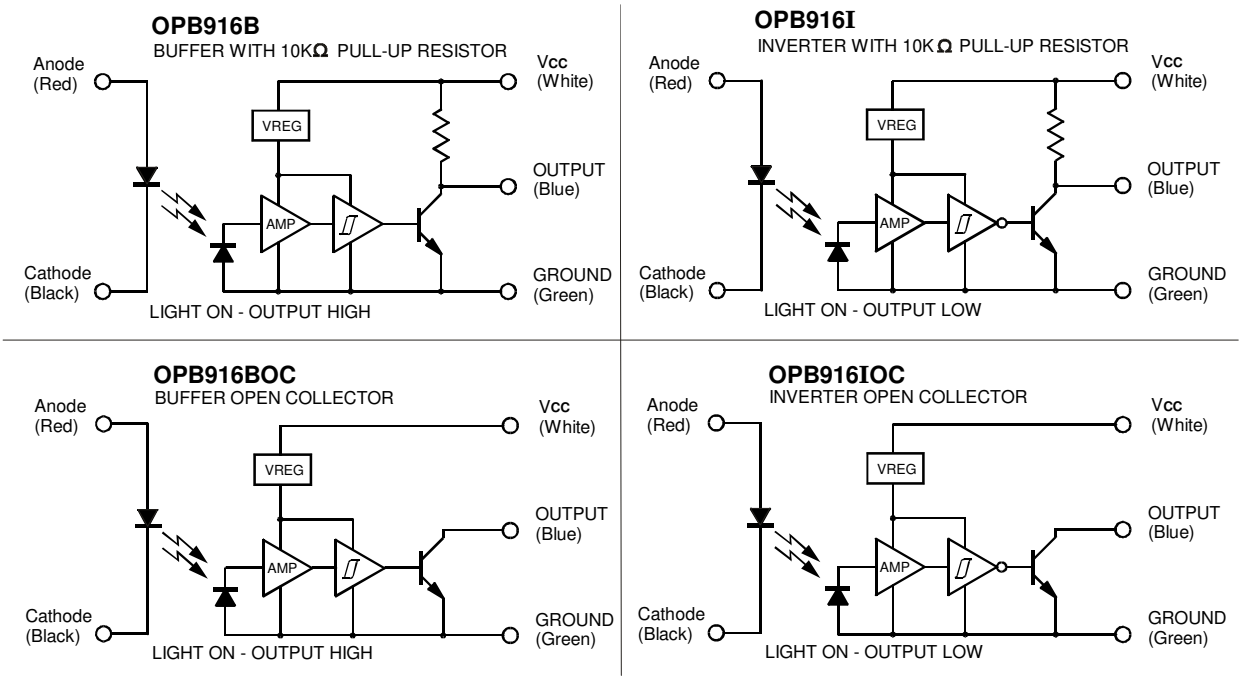
B - Buffered with 10K Ω pull-up

BOC - Buffered Open-Collector Output

I - Inverted with 10K Ω pull-up

IOC - Inverted Open-Collector Output

**Schematics**



# Type OPB916 Series

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

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---|---|---|---|---|---|---|
| **Input Diode** | | | | | | |
| $V_F$ | **Forward Voltage** | | 1.30 | 1.80 | V | $I_F$ = 20 mA |
| $I_R$ | **Reverse Current** | | | 100 | µA | $V_R$ = 2 V |
| **Phototransistor** | | | | | | |
| $V_{CC}$ | **Operating D.C. Supply Voltage** | 4.5 | | 16.0 | V | |
| $I_{CCL}$ | **Low Level Supply Current:** OPB916B and OPB916BOC | | | 7.0 | mA | $V_{CC}$ = 16 V, $I_F$ = 0 mA(4) No Output Load |
| | OPB916I and OPB916IOC | | | 7.0 | mA | $V_{CC}$ = 16 V, $I_F$ = 10 mA No Output Load |
| $I_{CCH}$ | **High Level Supply Current:** OPB916B and OPB916BOC | | | 6.0 | mA | $V_{CC}$ = 16 V, $I_F$ = 10 mA No Output Load |
| | OPB916I and OPB916IOC | | | 6.0 | mA | $V_{CC}$ = 16 V, $I_F$ = 0 mA(4) No Output Load |
| $V_{OL}$ | **Low Level Output Voltage:** OPB916B | | | 0.4 | V | $V_{CC}$ = 4.5 to 16 V, $I_F$ = 0 mA(4) No Output Load |
| | OPB916BOC | | | 0.4 | V | $V_{CC}$ = 4.5 to 16 V, $I_F$ = 0 mA(4), IOL = 16 mA No Output Load |
| | OPB916I | | | 0.4 | V | $V_{CC}$ = 4.5 to 16 V, $I_F$ = 10 mA No Output Load |
| | OPB916IOC | | | 0.4 | V | $V_{CC}$ = 4.5 to 16 V, $I_F$ = 10 mA, IOL = 16 mA No Output Load |
| $V_{OH}$ | **Low Level Output Voltage:** OPB916B | 2.4 | $V_{cc}$ -1.5 | | V | $V_{CC}$ = 4.5 to 16 V, $I_F$ = 10 mA No Output Load |
| | OPB916I | 2.4 | $V_{cc}$ -1.5 | | V | $V_{CC}$ = 4.5 to16 V, $I_F$ = 0 mA(4), No Output Load |
| $I_{OH}$ | **High Level Output Current:** OPB916BOC | | 1.0 | 14 | µA | $V_{CC}$ = 4.5 V, $V_{OH}$ = 30 V, $I_F$ = 10 mA |
| | OPB916IOC | | 1.0 | 14 | µA | $V_{CC}$ = 4.5 V, $V_{OH}$ = 30 V, $I_F$ = 0 mA |
| $I_F(+)$ | **LED Positive-Going Threshold Current:** OPB916B and OPB916I | | 5 | 10 | mA | $V_{CC}$ = 5 V No Output Load |
| | OPB916BOC and OPB916IOC | | 5 | 10 | mA | $V_{CC}$ = 5 V, IOL = 16 mA No Output Load |
| $I_F(+)/I_F(-)$ | **Hysteresis** | | 1.5 | | | |
| $t_r$, $t_f$ | **Rise Time, Fall Time** | | 50 | | ns | $V_{CC}$ = 5 V, $I_F$ = 0 or 10 mA $R_L$ = 300 Ω to 5 V, $C_L$ = 50 pF |
| $t_{PLH}$, $t_{PHL}$ | **Propagation Delay Low-High & High-Low** | | 3.0 | | µs | |