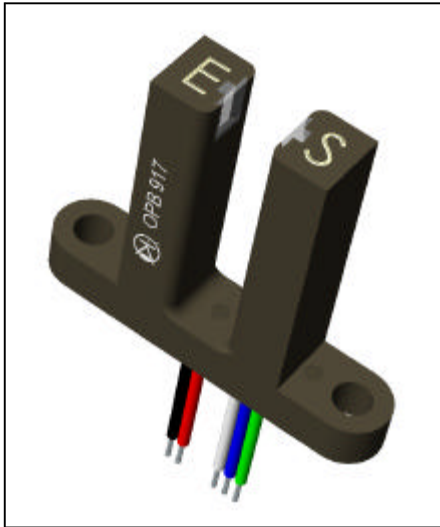


Photologic® Slotted Optical Switches

Type OPB917 Series



Features

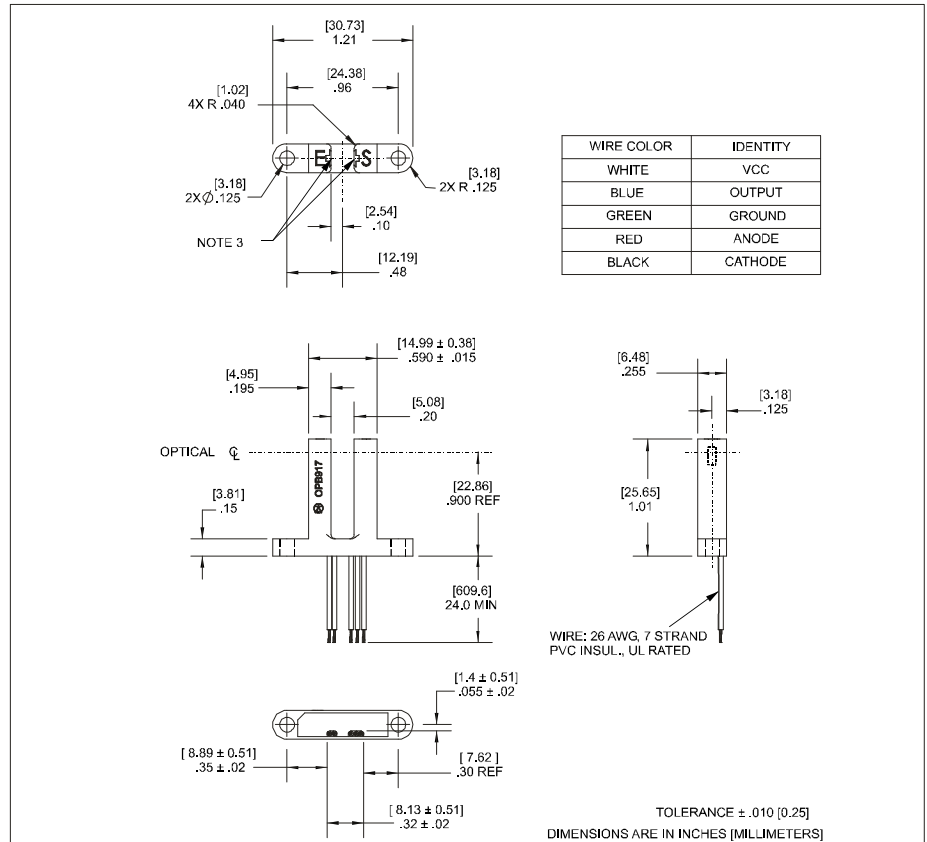
- Choice of output configuration
- 24" min 26 AWG wires
- Low power consumption
- 0.86" (21.8 mm) deep slot

Description

The OPB917 consists of an infrared emitting diode and a Photologic® photo integrated circuit mounted in an opaque housing with clear windows for dust protection. The extended deep slot allows for a longer reach of the optical path from the mounting plane, .900" (22.86 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.

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



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

Supply Voltage V_{CC} (Not to exceed 3 sec.)	18 V
Storage and Operating Temperature Range	-40°C to $+80^\circ\text{C}$
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/ $^\circ\text{C}$ above 25°C .
- (2) Derate linearly 2.67 mW/ $^\circ\text{C}$ above 70°C .
- (3) Clear dust protection.
- (4) Normal application would be with light source blocked, simulated by $I_F = 0\text{ mA}$.
- (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.

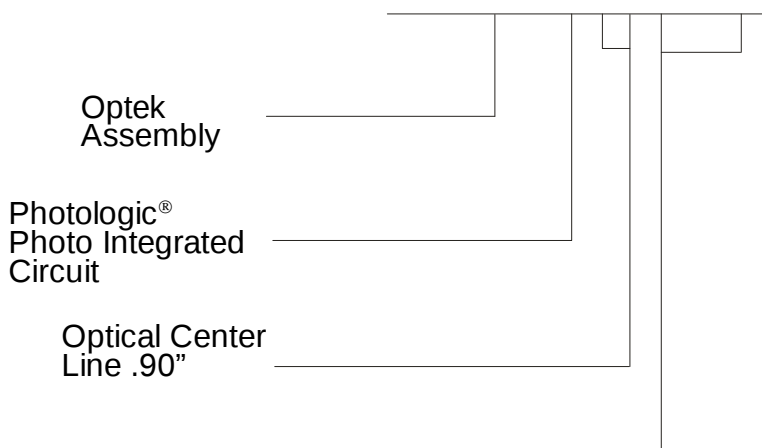


For RoHS compliant devices add "Z" to the end of the part number: OPB917BZ

Type OPB917 Series

PART NUMBER GUIDE

OPB917XXX



Electrical Specification Variations

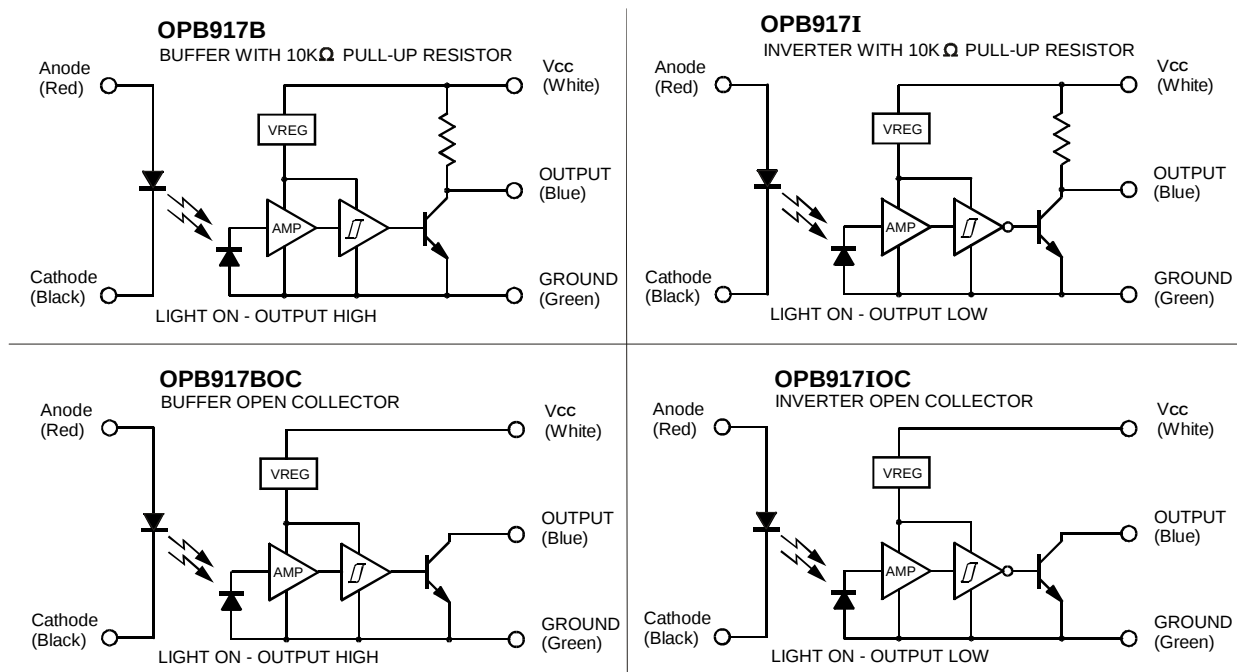
B - Buffered with 10K Ω pull-up

BOC - Buffered Open-Collector Output

I - Inverted with 10K Ω pull-up

IOC - Inverted Open-Collector Output

Schematics



SLOTTED
OPTICAL
SWITCHES

Type OPB917 Series

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
V_F	Forward Voltage		1.30	1.80	V	$I_F = 20\text{ mA}$
I_R	Reverse Current			100	μA	$V_R = 2\text{ V}$
Phototransistor						
V_{CC}	Operating D.C. Supply Voltage	4.5		16.0	V	
I_{CCL}	Low Level Supply Current: OPB917B and OPB917BOC			7.0	mA	$V_{CC} = 16\text{ V}$, $I_F = 0\text{ mA}^{(4)}$ No Output Load
	OPB917I and OPB917IOC			7.0	mA	$V_{CC} = 16\text{ V}$, $I_F = 10\text{ mA}$ No Output Load
I_{CCH}	High Level Supply Current: OPB917B and OPB917BOC			6.0	mA	$V_{CC} = 16\text{ V}$, $I_F = 10\text{ mA}$ No Output Load
	OPB917I and OPB917IOC			6.0	mA	$V_{CC} = 16\text{ V}$, $I_F = 0\text{ mA}^{(4)}$ No Output Load
V_{OL}	Low Level Output Voltage: OPB917B			0.4	V	$V_{CC} = 4.5\text{ to }16\text{ V}$, $I_F = 0\text{ mA}^{(4)}$ No Output Load
	OPB917BOC			0.4	V	$V_{CC} = 4.5\text{ to }16\text{ V}$, $I_F = 0\text{ mA}^{(4)}$, $I_{OL} = 16\text{ mA}$ No Output Load
	OPB917I			0.4	V	$V_{CC} = 4.5\text{ to }16\text{ V}$, $I_F = 10\text{ mA}$ No Output Load
	OPB917IOC			0.4	V	$V_{CC} = 4.5\text{ to }16\text{ V}$, $I_F = 10\text{ mA}$, $I_{OL} = 16\text{ mA}$ No Output Load
V_{OH}	Low Level Output Voltage: OPB917B	2.4	$V_{CC} - 1.5$		V	$V_{CC} = 4.5\text{ to }16\text{ V}$, $I_F = 10\text{ mA}$ No Output Load
	OPB917I	2.4	$V_{CC} - 1.5$		V	$V_{CC} = 4.5\text{ to }16\text{ V}$, $I_F = 0\text{ mA}^{(4)}$, No Output Load
I_{OH}	High Level Output Current: OPB917BOC		1.0	14	μA	$V_{CC} = 4.5\text{ V}$, $V_{OH} = 30\text{ V}$, $I_F = 10\text{ mA}$
	OPB917IOC		1.0	14	μA	$V_{CC} = 4.5\text{ V}$, $V_{OH} = 30\text{ V}$, $I_F = 0\text{ mA}$
$I_F(+)$	LED Positive-Going Threshold Current: OPB917B and OPB917I		5	10	mA	$V_{CC} = 5\text{ V}$ No Output Load
	OPB917BOC and OPB917IOC		5	10	mA	$V_{CC} = 5\text{ V}$, $I_{OL} = 16\text{ mA}$ No Output Load
$I_F(+)/I_F(-)$	Hysteresis		1.5			
t_r, t_f	Rise Time, Fall Time		50		ns	$V_{CC} = 5\text{ V}$, $I_F = 0\text{ or }10\text{ mA}$
t_{PLH}, t_{PHL}	Propagation Delay Low-High & High-Low		3.0		μs	$R_L = 300\ \Omega\text{ to }5\text{ V}$, $C_L = 50\text{ pF}$

SLOTTED
OPTICAL
SWITCHES

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

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