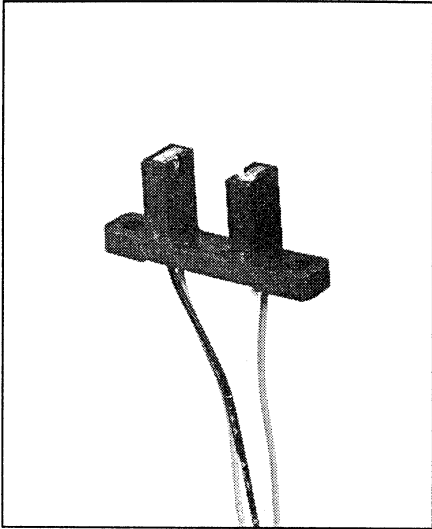


# Deep Gap Slotted Optical Switch Type OPB815W

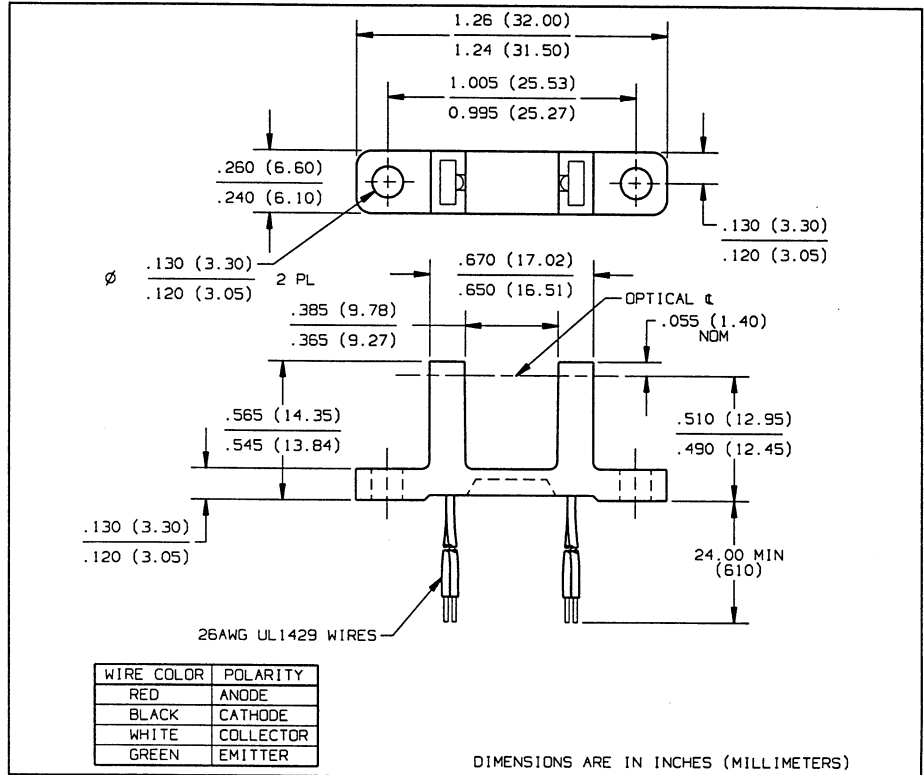


## Features

- Non-contact switching
- 24" minimum, 26 AWG wire leads
- 0.375" (9.53 mm) wide slot
- 0.430" (10.92 mm) deep slot

## Description

The OPB815W consists of an infrared emitting diode and an NPN silicon phototransistor mounted in a low cost plastic housing on opposite sides of a 0.375" (9.53 mm) wide, 0.430" (10.9 mm) deep slot. Phototransistor switching takes place whenever an opaque object passes through the slot. Available with PC board mountable leads as OPB815L.



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

Storage and Operating Temperature .....  $-40^\circ\text{C}$  to  $+80^\circ\text{C}$   
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron] .....  $240^\circ\text{C}^{(1)}$

## Input Diode

Continuous Forward Current ..... 50 mA  
Peak Forward Current (1  $\mu\text{s}$  pulse width, 300 pps) ..... 3.0 A  
Reverse Voltage ..... 2.0 V  
Power Dissipation .....  $100\text{ mW}^{(2)}$

## Output Phototransistor

Collector-Emitter Voltage ..... 30 V  
Emitter-Collector Voltage ..... 5.0 V  
Power Dissipation .....  $100\text{ mW}^{(2)}$

## Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max when flow soldering.
- (2) Derate linearly  $1.67\text{ mW}/^\circ\text{C}$  above  $25^\circ\text{C}$ .
- (3) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.
- (4) All parameters tested using pulse technique.

# Type OPB815W

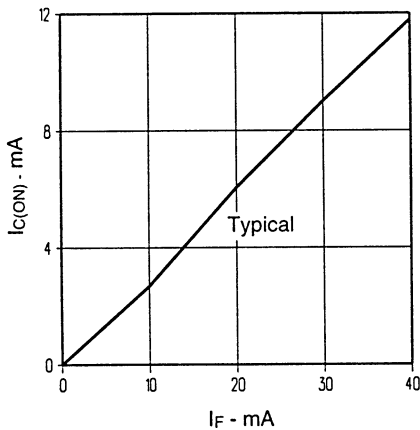
Electrical Characteristics ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
<b>Input Diode</b>					
$V_F$	Forward Voltage		1.70	V	$I_F = 20\text{ mA}$
$I_R$	Reverse Current		100	$\mu\text{A}$	$V_R = 2.0\text{ V}$
<b>Output Phototransistor</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30		V	$I_C = 1.00\text{ mA}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0		V	$I_E = 100\ \mu\text{A}$
$I_{CEO}$	Collector-Emitter Dark Current		100	nA	$V_{CE} = 10.0\text{ V}, I_F = 0, E_e = 0$
<b>Coupled</b>					
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage		0.40	V	$I_C = 500\ \mu\text{A}, I_F = 20\text{ mA}$
$I_{C(ON)}$	On-State Collector Current	1		mA	$V_{CE} = 10.0\text{ V}, I_F = 20\text{ mA}$

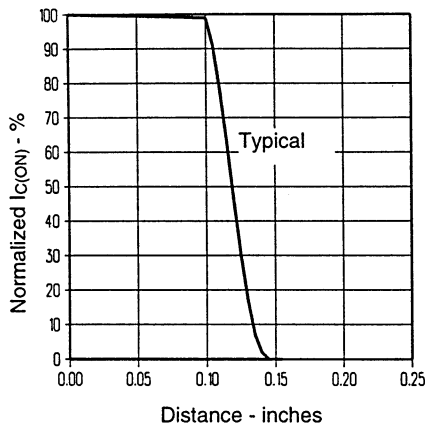
SLOTTED OPTICAL SWITCHES

## Typical Performance Curves

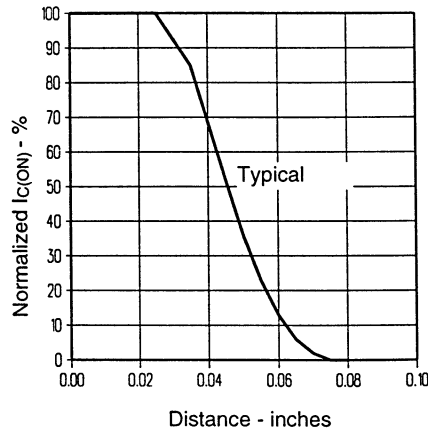
Collector Current vs LED Drive



Normalized  $I_{C(ON)}$  vs Distance (X Axis Blocked)



Normalized  $I_{C(ON)}$  vs Distance (Y Axis Blocked)



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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