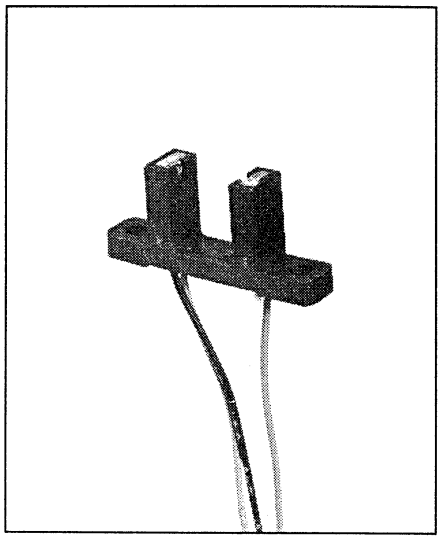
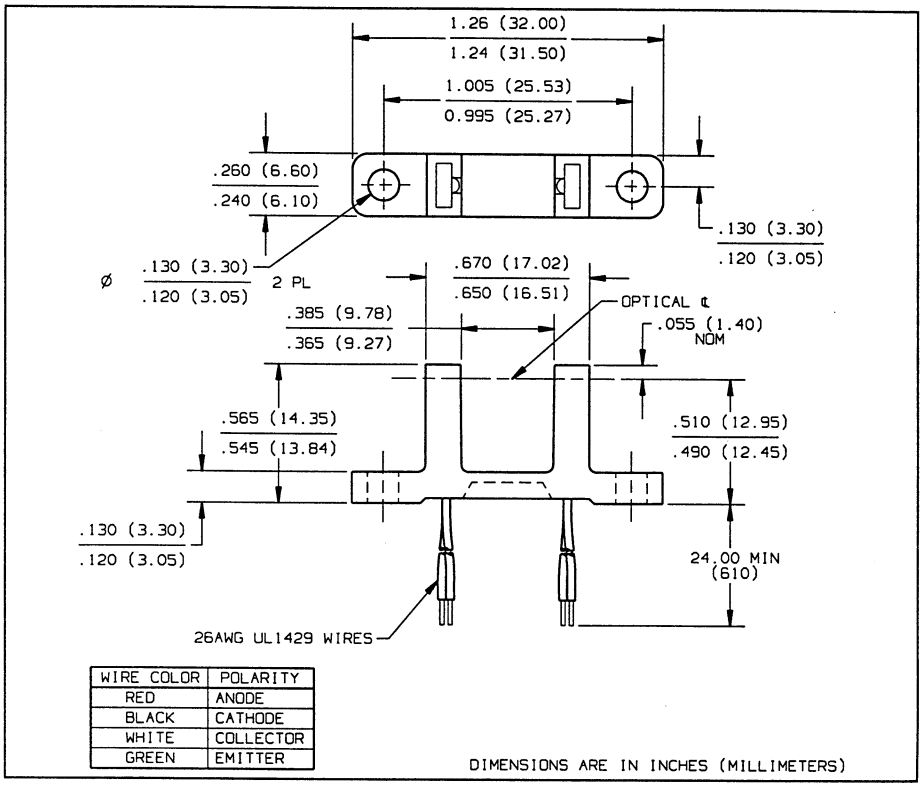
Deep Gap Slotted Optical Switch
Type OPB815W





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. Avaliable with PC board mountable leads as OPB815L.

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

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

Input Diode

Continuous Forward Current ..... 50 mA
Peak Forward Current (1 µs pulse width, 300 pps) ..... 3.0 A
Reverse Voltage ..... 2.0 V
Power Dissipation ..... 100 mW(2)

Output Phototransistor

Collector-Emitter Voltage ..... 30 V
Emitter-Collector Voltage ..... 5.0 V
Power Dissipation ..... 100 mW(2)

Notes:
(1) RMA flux is recommended. Duration can be extended to 10 sec. max when flow soldering.
(2) Derate linearly 1.67 mW/° C above 25° 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.

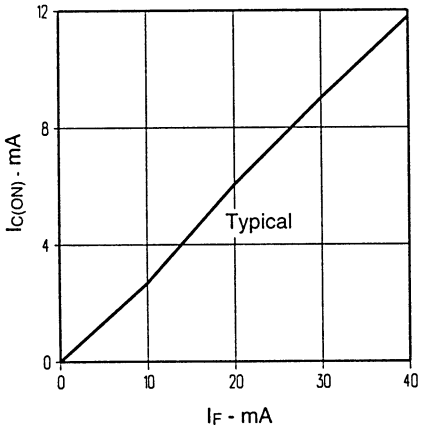
Type OPB815W

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

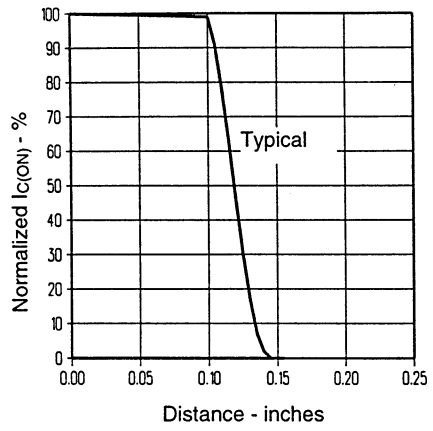
SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Input Diode					
V_F	Forward Voltage		1.70	V	I_F = 20 mA
I_R	Reverse Current		100	µA	V_R = 2.0 V
Output Phototransistor					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30		V	I_C = 1.00 mA
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0		V	I_E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

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)