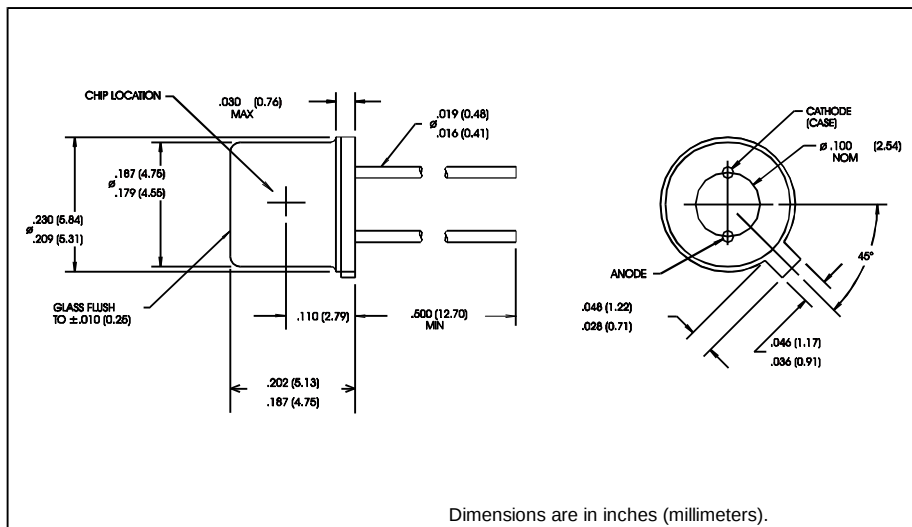


PIN Silicon Photodiode

Type OP910W



Features

- Wide receiving angle
- Fast switching time
- Linear response vs. irradiance
- Enhanced temperature range

Description

The OP910W consists of a PIN silicon photodiode mounted in a two-leaded hermetic TO-46 package. The flat lens has an acceptance half angle of $\pm 40^\circ$.

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

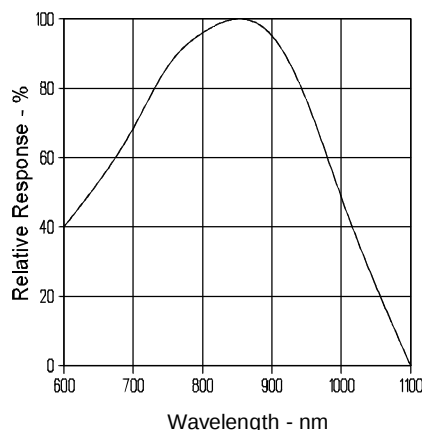
Reverse Voltage	60 V
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Operating Temperature Range	-65°C to $+125^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6mm) from case for 5 sec. with soldering iron]	$200^\circ\text{C}^{(1)}$
Power Dissipation	250 mW

Notes:

- (1) RMA Flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (2) Light source is an unfiltered GaAs LED with a peak wavelength of 935 nm and a radiometric intensity level which varies less than 10% over the entire lens surface of the photodiode being tested.
- (3) Junction temperature maintained at 25°C .
- (4) To calculate typical dark current in nA, use the formula $I_D = 10^{(0.42 T_A - 1.5)}$ where T_A is ambient temperature in $^\circ\text{C}$.
- (5) Derate linearly 2.5 mW/ $^\circ\text{C}$ above 25°C .

Typical Performance Curves

Typical Spectral Response



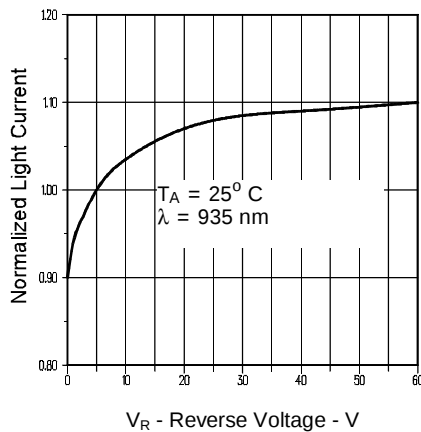
Type OP910W

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

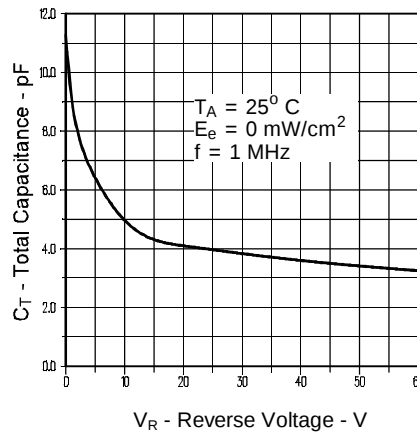
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITION
I_L	Light Current	1.7	2.4		nA	$V_R = 20\text{ V}$, $E_e = .50\text{ mW/cm}^2$ note 2, 3
I_D	Dark Current		1	10	nA	$V_R = 20\text{ V}$, $E_e = 0.0$
$V_{(BR)R}$	Reverse Voltage Breakdown	100			V	$I_R = 100\text{ mA}$
t_r	Rise Time		10		nS	$V_R = 20\text{ V}$, $R_L = 50\text{ OHMS}$
t_f	Fall Time		10		nS	$V_R = 20\text{ V}$, $R_L = 50\text{ OHMS}$
$\emptyset$	Half Angle		+/-40		degr.	$I_F = \text{Constant}$
C_P	Capacitance		13		pF	$V_R = 0\text{ V}$, $F = 1\text{ MHz}$, $E_e = 0$
V_F	Forward Voltage			1.2	V	$I_F = 100\text{ mA}$

Typical Performance Curves

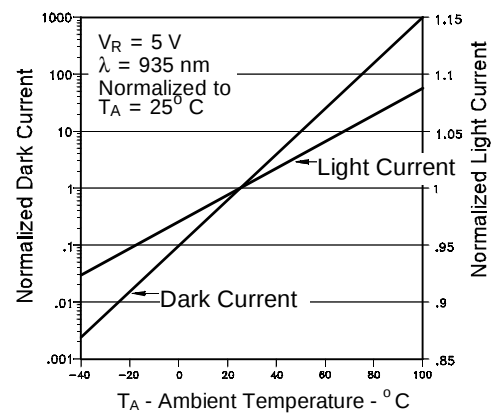
Normalized Light Current vs. Reverse Voltage



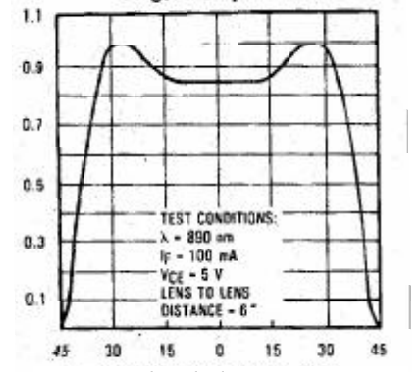
Total Capacitance vs. Reverse Voltage



Normalized Light and Dark Current vs. Ambient Temperature



Angular Displacement



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

Optek Technology, Inc. 1215 W. Crosby Road Carrollton, Texas 75006 (972)323-2200 Fax (972)323-2396