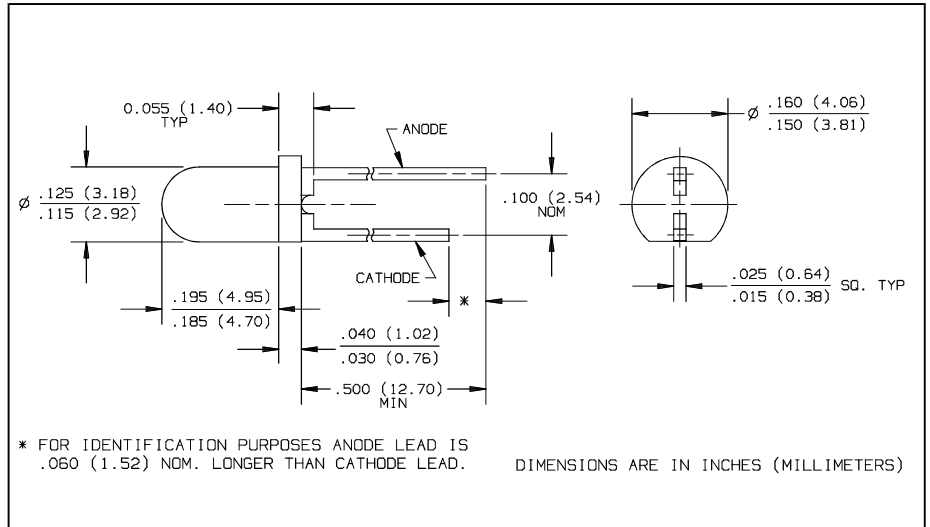


# PIN Silicon Photodiode

## Type OP906



### Features

- Narrow receiving angle
- Linear response vs irradiance
- Fast switching time
- T-1 package style
- Small package ideal for space limited applications

### Description

The OP906 device consists of a PIN silicon photodiode molded in a clear epoxy package which allows spectral response from visible to infrared light wavelengths. The narrow receiving angle provides excellent on-axis coupling. These devices are 100% production tested using infrared light for close correlation with Optek's GaAs and GaAlAs emitters. Lead spacing is 0.100 inch (2.54 mm).

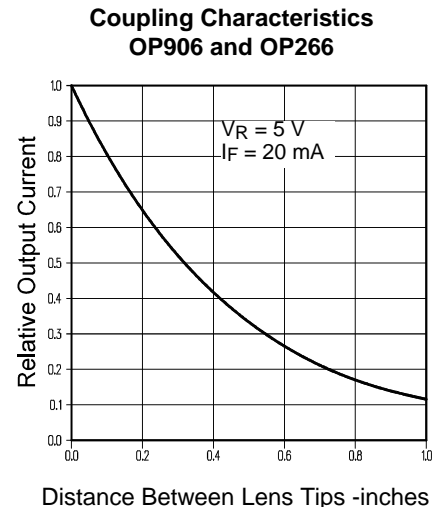
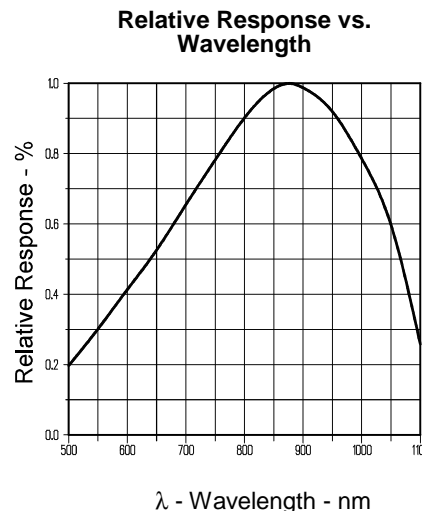
### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Reverse Breakdown Voltage	60 V
Storage and Operating Temperature Range	$-40^\circ\text{C}$ to $+100^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	$260^\circ\text{C}^{(1)}$
Power Dissipation	100 mW <sup>(2)</sup>

#### Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. Max. 20 grams force may be applied to leads when soldering.
- (2) Derate linearly 1.67 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
- (3) Light source is an unfiltered GaAs LED with a peak emission wavelength of 935nm and a radiometric intensity level which varies less than 10% over the entire lens surface of the photodiode being tested.
- (4) To calculate typical dark current in nA, use the formula  $I_D = 10^{(0.042 T_A - 1.5)}$  where  $T_A$  is ambient temperature in  $^\circ\text{C}$ .

### Typical Performance Curves



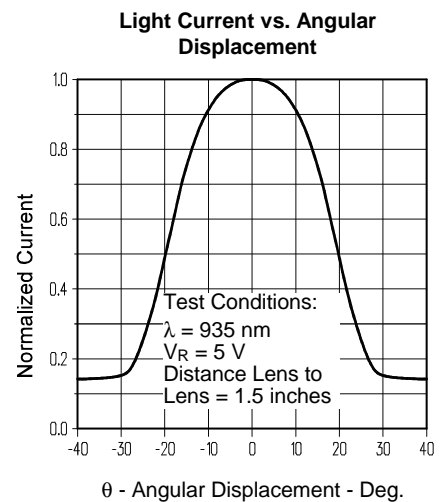
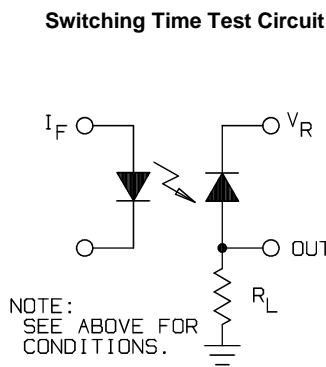
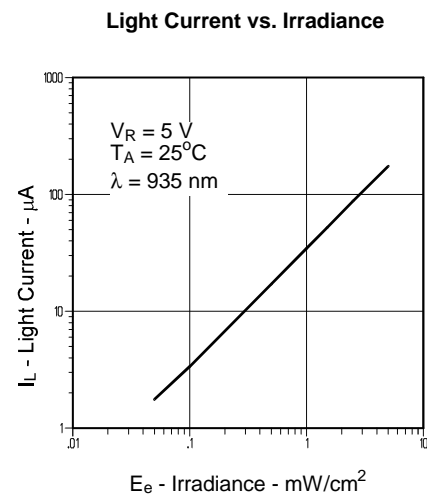
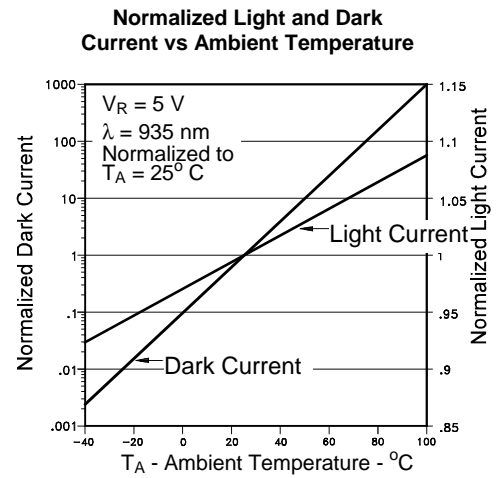
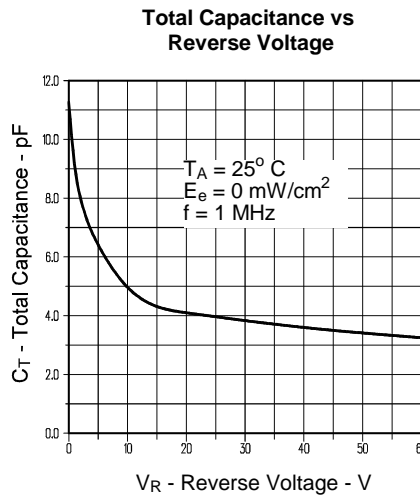
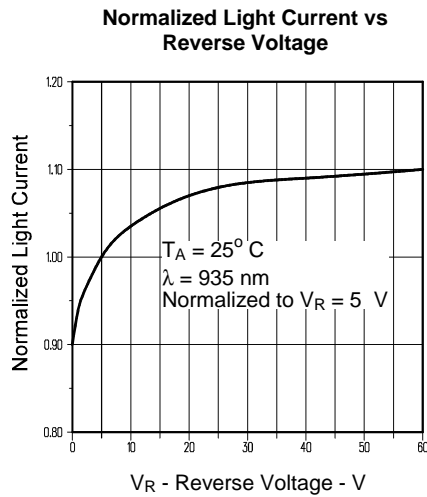
# Type OP906

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$I_L$	Reverse Light Current	16		35	$\mu\text{A}$	$V_R = 5\text{ V}$ , $E_e = 0.50\text{ mW/cm}^2$ <sup>(3)</sup>
$I_D$	Reverse Dark Current		1	60	nA	$V_R = 30\text{ V}$ , $E_e = 0$
$V_{(BR)R}$	Reverse Breakdown Voltage	60			V	$I_R = 100\ \mu\text{A}$
$V_F$	Forward Voltage			1.2	V	$I_F = 1\text{ mA}$
$C_T$	Total Capacitance		4		pF	$V_R = 20\text{ V}$ , $E_e = 0$ , $f = 1.0\text{ MHz}$
$t_r$ , $t_f$	Rise Time, Fall Time		5		ns	$V_R = 20\text{ V}$ , $\lambda = 850\text{ nm}$ , $R_L = 50\ \Omega$

PHOTOSENSORS

## Typical Performance Curves



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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