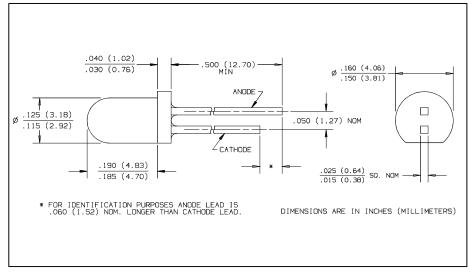


# **PIN Silicon Photodiode** Type OP905





#### **Features**

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

#### Description

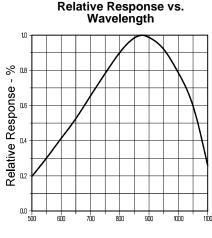
The OP905 device consists of a PIN silicon photodiode molded in a clear epoxy package which allows spectral response from visible to infrared light wavelengths. The narrow receiving angle provides excellent on-axis coupling. These devices are 100% production tested using infrared light for close correlation with Optek's GaAs and GaAlAs emitters.

### **Absolute Maximum Ratings** (T<sub>A</sub> = 25<sup>o</sup> C unless otherwise noted)

Reverse Breakdown Voltage	
Storage and Operating Temperature Range	-40° C to +100° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 se	
iron]	260° C <sup>(1)</sup>
Power Dissipation	100 mW <sup>(2)</sup>
Notes:	

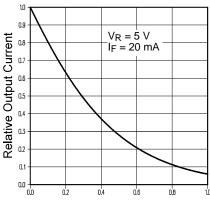
- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. Max. 20 grams force may be applied to leads when soldering. Derate linearly 1.67 mW/° C above 25° C.
- (3) Light source is an unfiltered GaAs LED with a peak emission wavelength of 935nm and a radiometric intensity 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  $I_D = 10^{(0.042 \text{ T}_A^{-1.5})}$  where  $T_A$  is ambient temperature in  $^{\circ}$  C.

#### **Typical Performance Curves**



#### $\lambda$ - Wavelength - nm

## **Coupling Characteristics** OP905 and OP265



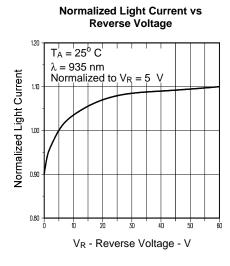
Distance Between Lens Tips - inches

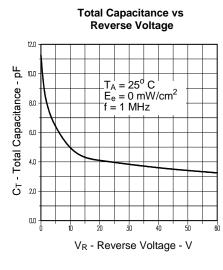
# Type OP905

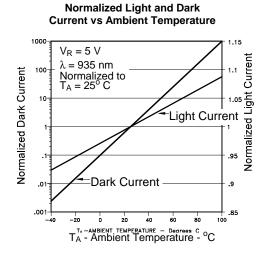
Electrical Characteristics (T<sub>A</sub> = 25<sup>o</sup> C unless otherwise noted)

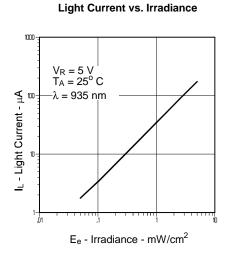
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
lμ	Reverse Light Current	14		32	μΑ	$V_R = 5 \text{ V, Ee} = 0.50 \text{ mW/cm}^{2(3)}$
$I_{D}$	Reverse Dark Current		1	60	nA	$V_R = 30 \text{ V}, E_e = 0$
$V_{(BR)}$	Reverse Breakdown Voltage	60			V	$I_R = 100 \mu A$
$V_{F}$	Forward Voltage			1.2	V	I <sub>F</sub> = 1 mA
$C_{T}$	Total Capacitance		4		pF	$V_R = 20 \text{ V}, E_e = 0, f = 1.0 \text{ MHz}$
t <sub>r</sub> , t <sub>f</sub>	Rise Time, Fall Time		5		ns	$V_R$ = 20 V, $\lambda$ = 850 nm, $R_L$ = 50 $\Omega$

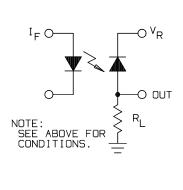
### **Typical Performance Curves**











**Switching Time Test Circuit** 

