PN Silicon Photodiode

OP900SL

Features:

- Narrow receiving angle
- Enhanced temperature range
- Ideal for direct mounting to PC Board
- Fast switching speed
- Linear response vs. irradiance
- Mechanically and spectrally matched to OP123 emitters

Description:

Each **OP900SL** consists of a PN junction silicon photodiode mounted in a miniature glass-lensed hermetically sealed "pill" package. The lensing effect allows an acceptance half-angle of 18°, when measured from the optical axis to the half-power point.

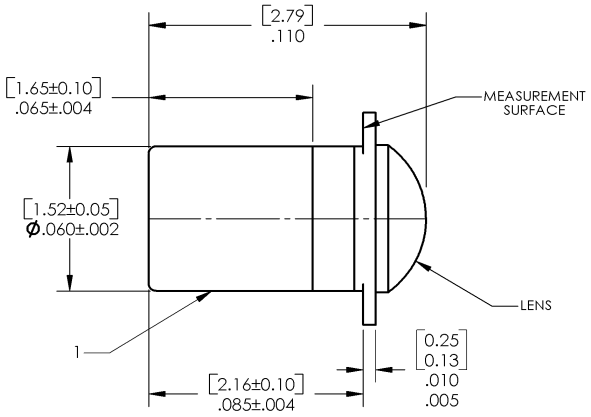
The OP900SL is mechanically and spectrally matched to the OP123 series emitters.

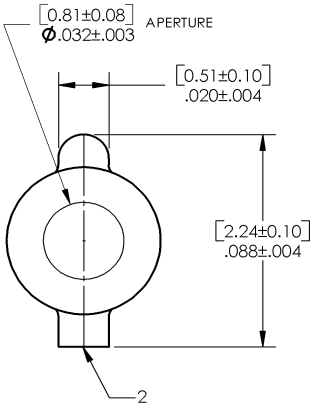
Please refer to Application Bulletin 210 for additional thermal design information and to Application Bulletin 202 for pill-type soldering to PC Board.

Ordering Information		
Part Number	**Sensor**	**Viewing Angle**
OP900SL	Photodiode	35°

Applications:

- Non-contact reflective object sensor
- Assembly line automation
- Machine automation
- Machine safety
- End of travel sensor
- Door sensor





DIMENSIONS ARE IN: **[MILLIMETERS]**
INCHES

Pin #	Sensor
1	Cathode
2	Anode

RoHS

TT Electronics | OPTEK Technology
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

PN Silicon Photodiode

OP900SL

Electrical Specifications

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

Reverse Voltage	50 V
Operating Temperature Range	-65° C to +125° C
Storage Temperature Range	-65° C to +150° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from the case for 5 seconds with soldering iron] (1)	260° C
Power Dissipation (2)	50 mW

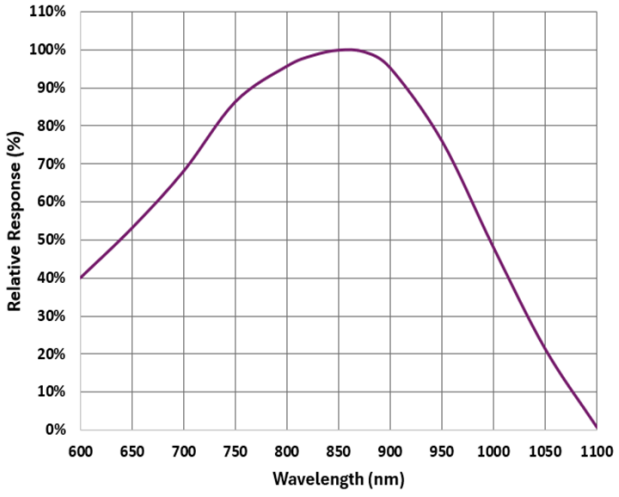
Electrical Characteristics (T_A = 25° C unless otherwise noted)

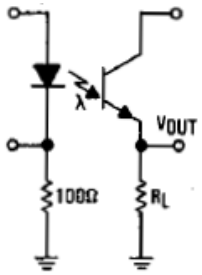
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
I_L (3)(4)	Light Current	8	14	-	µA	V_R = 10 V, E_E = 20 mW/cm^2
I_D (3)	Dark Current	-	-	10	nA	V_R = 10 V, E_E = 0
$V_{(BR)R}$	Reverse Voltage Breakdown	50	80	-	V	I_R = 100 µA
t_r	Rise Time	-	100	-	ns	V_R = 50 V, I_L = 8 µA, R_L = 1 kΩ (see test circuit)
t_f	Fall Time	-	100	-		

Notes:
(1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
(2) Derate linearly 0.40 mW/° C above 25° C.
(3) Junction temperature maintained at 25° C.
(4) Light source is an unfiltered tungsten bulb operating at CT = 2870 K or equivalent infrared source.

Typical Performance

Typical Spectral Response





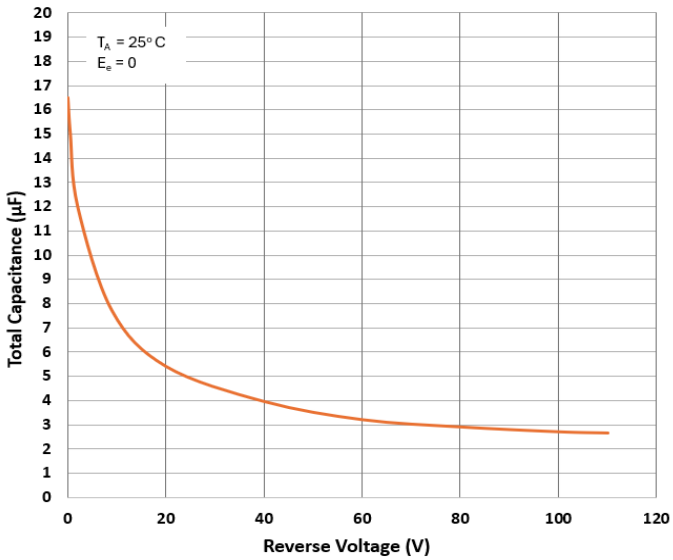
Test Circuit

TT Electronics | OPTEK Technology
2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

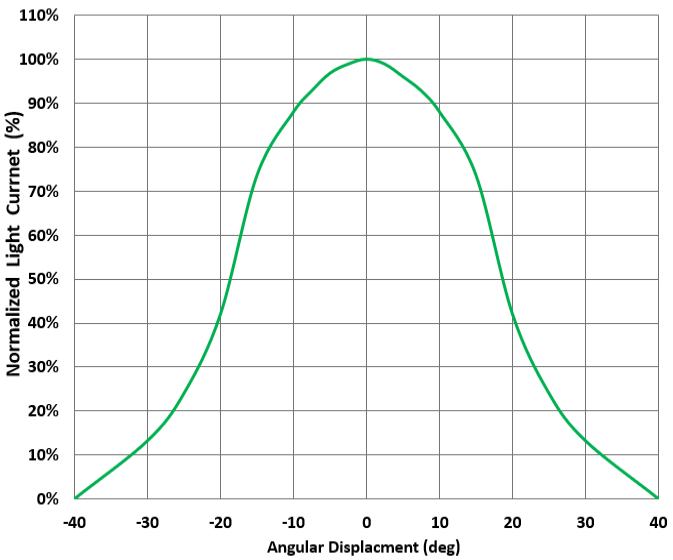
Typical Performance

OP900SL

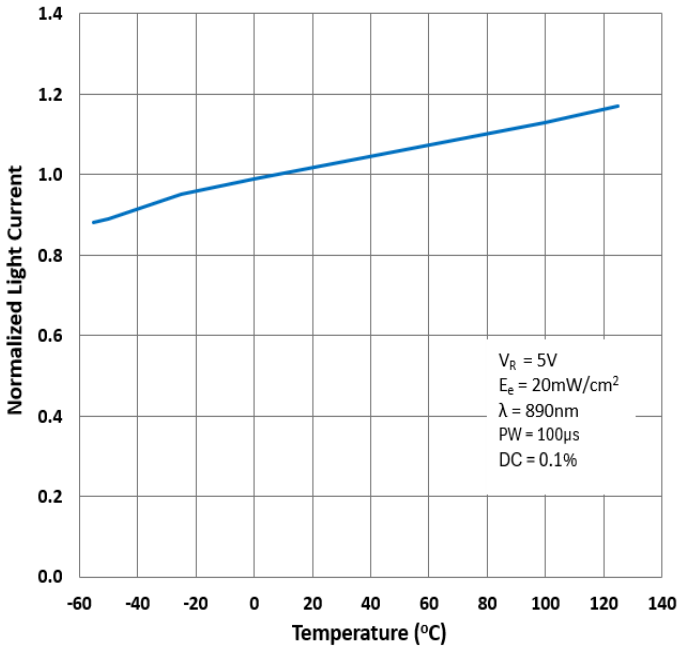
Total Capacitance vs Voltage



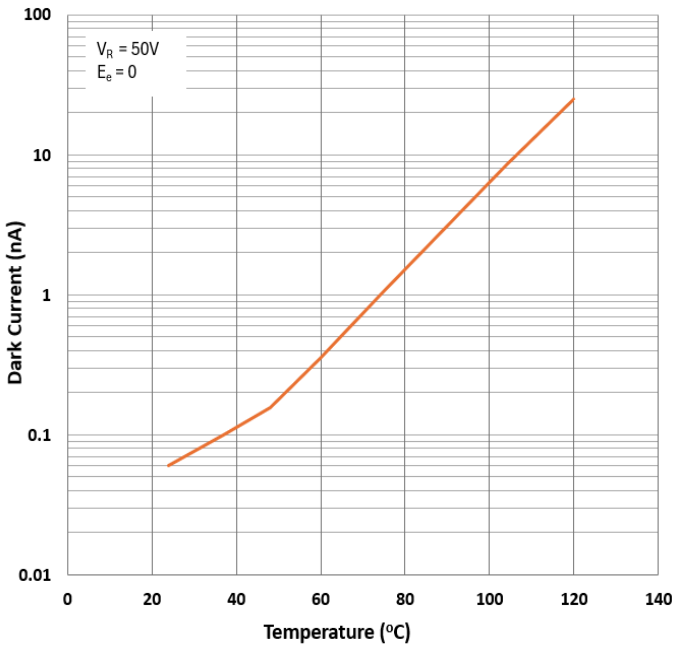
Normalized Light Current vs Angular Displacement



Normalized Light Current vs Temperature



Dark Current vs Temperature



TT Electronics | OPTEK Technology

2900 E. Plano Pkwy, Plano, TX 75074 | Ph: +1 972 323 2200

www.ttelectronics.com | sensors@ttelectronics.com