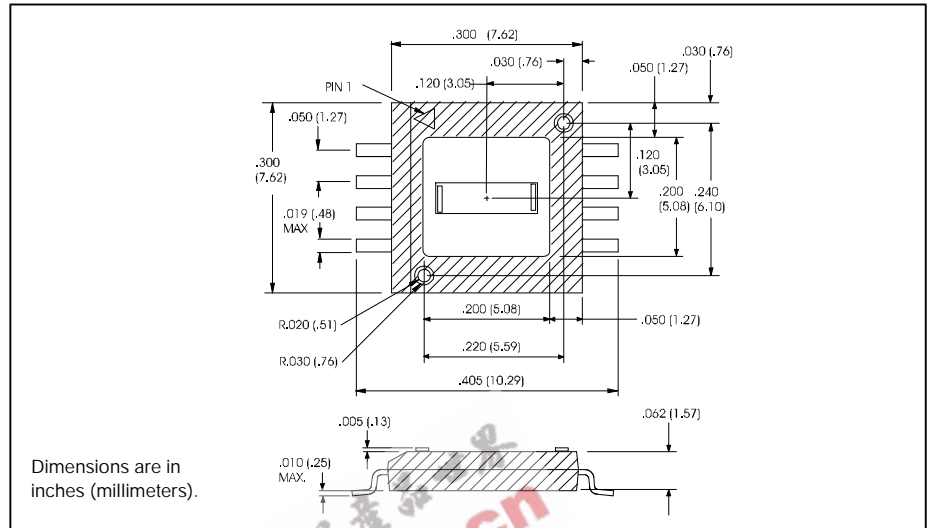
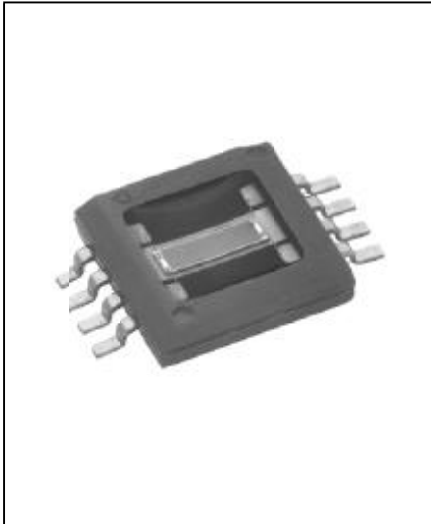


# Position Sensing Detector Type OSM910, OSM910P



## Features

- Excellent position detection capability
- High resolution capability
- High interelectrode resistance
- Fast response time

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

Storage Temperature Range	-40° C to +125° C
Operating Temperature Range	-40° C to +100° C
Reverse Voltage	30 V

### Notes:

(1) Position Detection Error is defined by:

$$\frac{L}{2} \times \frac{l_1 - l_2}{l_1 + l_2} = \text{Incident Position}$$

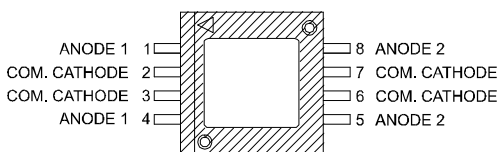
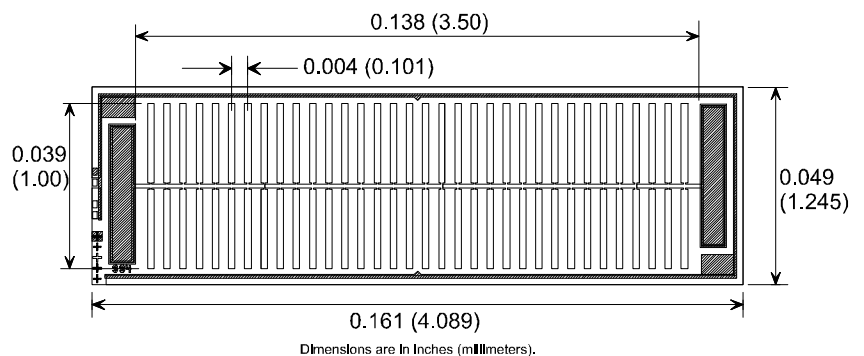
L = Length of Active Area

(2) Alignment pins shown are for "P" suffix part number only.

## Description

The OSM910 Position Sensing Detector (PSD) is a silicon photodiode designed for use in distance or displacement sensing applications. The PSD produces an analog output that is directly proportional to the position of a light spot on the detector active area. The output produced is independent of the light spot intensity, profile, symmetry or size.

## Sensor Detail



### Reference:

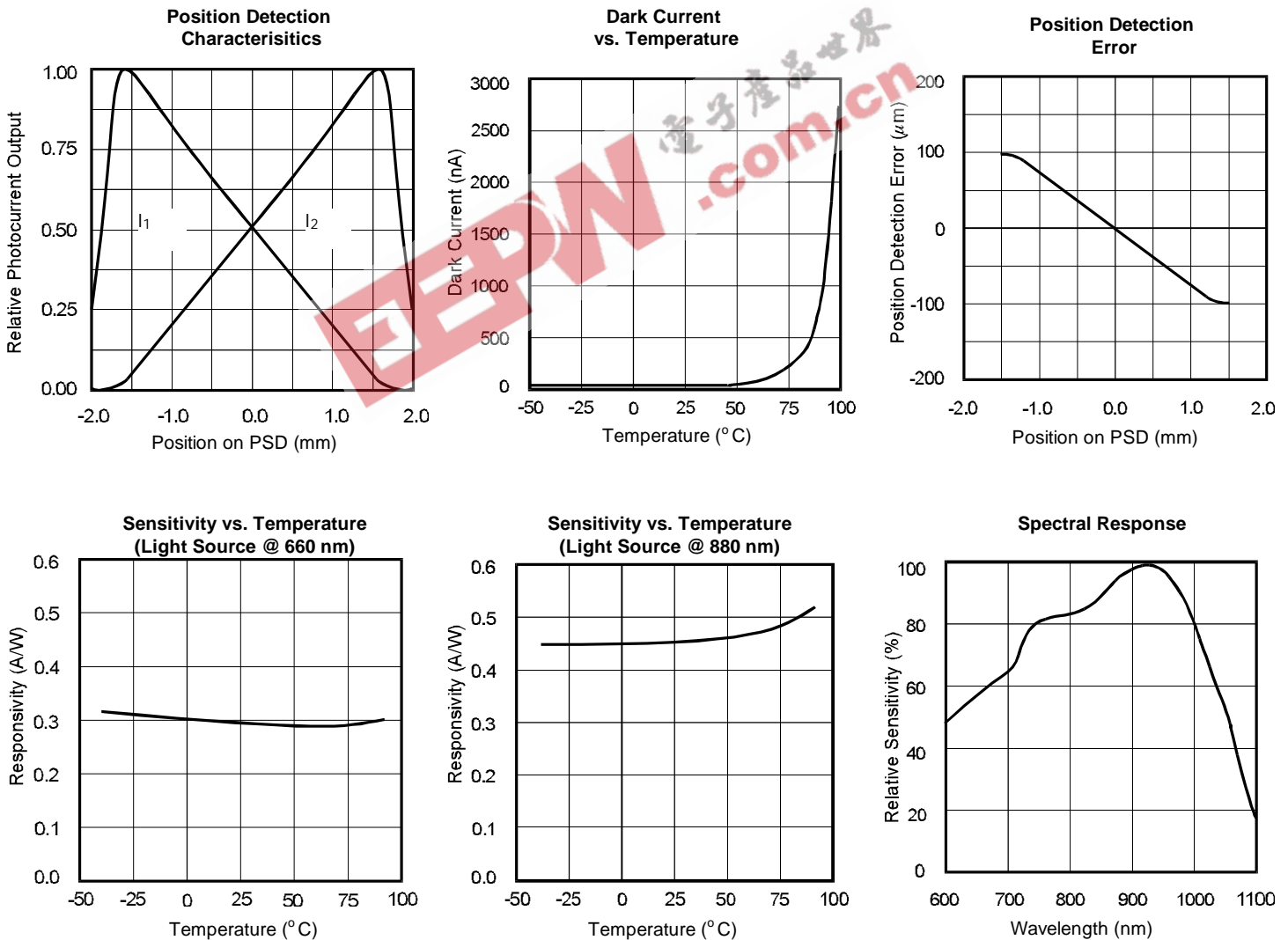
Refer to Optek's Application Note 216.

# Type OSM910, OSM910P

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$\lambda_P$	Peak Sensitivity Wavelength		920		nm	$V_R = 5\text{ V}$
$R_I$	Responsivity		0.30		A/W	$V_R = 5\text{ V}, I_P = 660\text{ nm}$
$R_I$	Responsivity		0.43		A/W	$V_R = 5\text{ V}, I_P = 880\text{ nm}$
$R_I$	Inter-electrode Resistance		160		K $\Omega$	$V_{BIAS} = 0.1\text{ V}$
$I_D$	Dark Current		10	100	nA	$V_R = 5\text{ V}$
$I_S$	Saturation Current		220		mA	$V_R = 5\text{ V}, I_P = 880\text{ nm}$
$t_r$	Rise Time		2.0	10.0	ns	$V_R = 5\text{ V}, I_P = 880\text{ nm}$ $R_L = 1\text{ K}\Omega$

## 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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