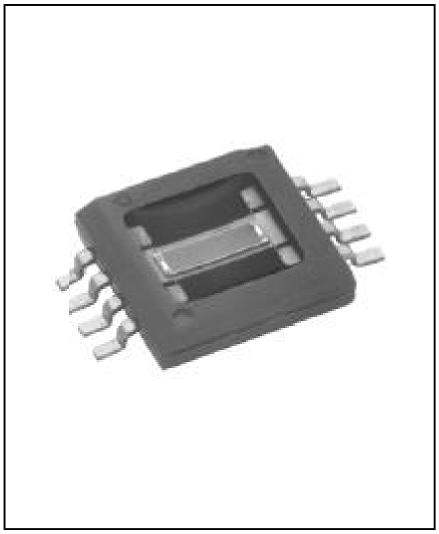
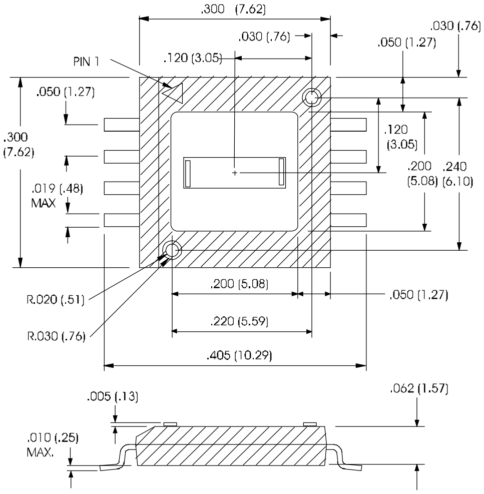
Product Bulletin OSM910
May 1999

Position Sensing Detector
Type OSM910, OSM910P





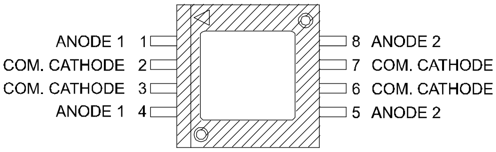
Dimensions are in inches (millimeters).

Features

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

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.



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

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

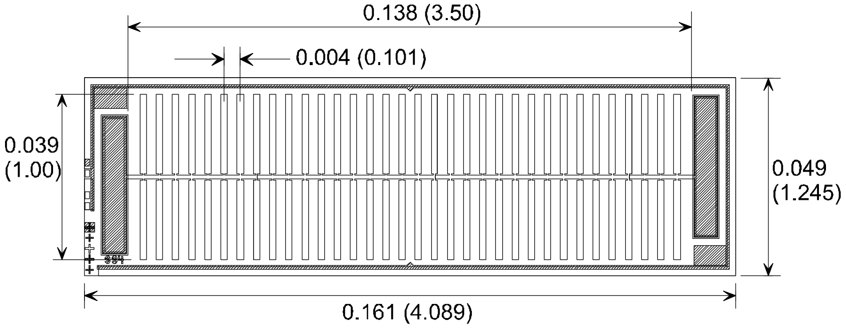
Notes:
(1) Position Detection Error is defined by:

$$\frac{L}{2} \times \frac{I_1 - I_2}{I_1 + I_2} \text{ — Incident Position}$$

L = Length of Active Area

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

Sensor Detail



Dimensions are in inches (millimeters).

Reference:
Refer to Optek’s Application Note 216.

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
l_P	Peak Sensitivity Wavelength		920		nm	V_R = 5 V
R l	Responsivity		0.30		A/W	V_R = 5 V, l_P = 660 nm
R l	Responsivity		0.43		A/W	V_R = 5 V, l_P = 880 nm
R_I	Inter-electrode Resistance		160		KW	V_{BIAS} = 0.1 V
I_D	Dark Current		10	100	nA	V_R = 5 V
I_S	Saturation Current		220		mA	VR = 5 V, l_P = 880 nm
t_r	Rise Time		2.0	10.0	ms	V_R = 5 V, l_P = 880 nm R_L = 1 KW

Typical Performance Curves