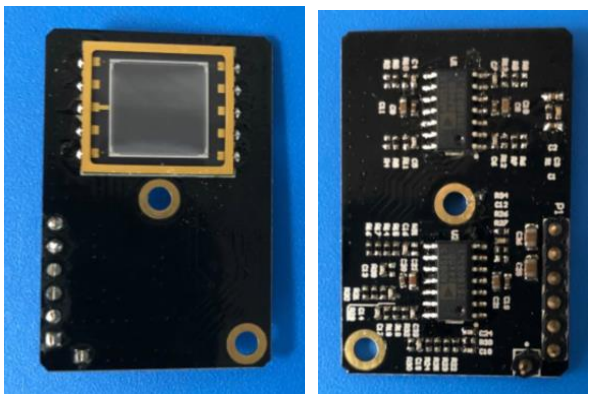




## Two-dimensional PSD with Amplifier



### Description

PSD100-SPB3 is 2D lateral effect position sensor that provide X and Y axis positional information.

This module contain a high precision 2D PSD (OTRON P/N: PSD100-IC) and low noise amplifier (I/V converter), to output VX, VY and Vsum signal.

### Features

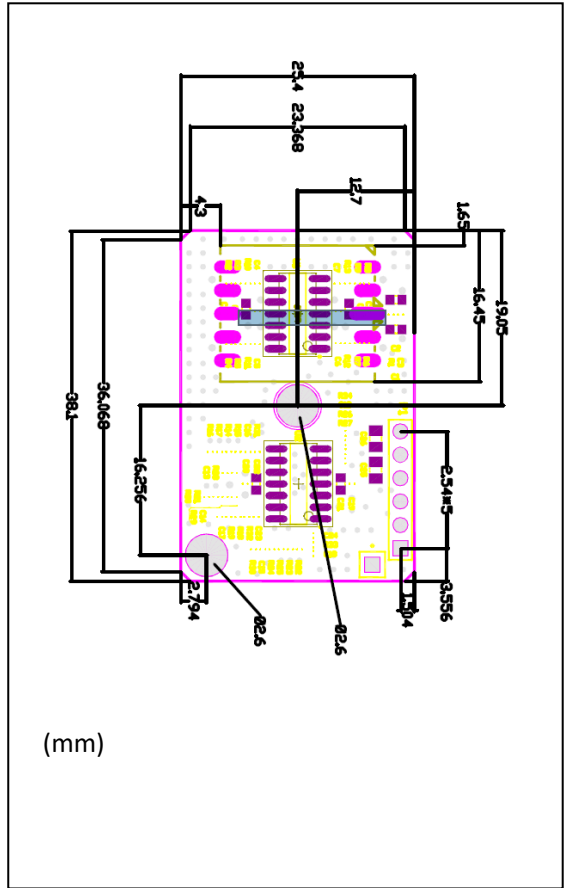
- \* Small package size
- \* High precision analog voltage output

### Applications

- \* Optical axis alignment
- \* Distance measurement
- \* Laser beam tracking
- \* Length measurement

### Absolute Maximum Rating

Symbol	Parameter	Min.	Max.	Typ.	Units
T <sub>STD</sub>	Storage Temp.	-40	+80	25	°C
T <sub>OP</sub>	Operating Temp	-40	+60	25	°C
V <sub>CC</sub>	Power Supply Voltage	-	-	±5	V
V <sub>R</sub>	Applied Bias Voltage	0	15	5	V
I <sub>O</sub>	Current Consumption	-	-	35	mA

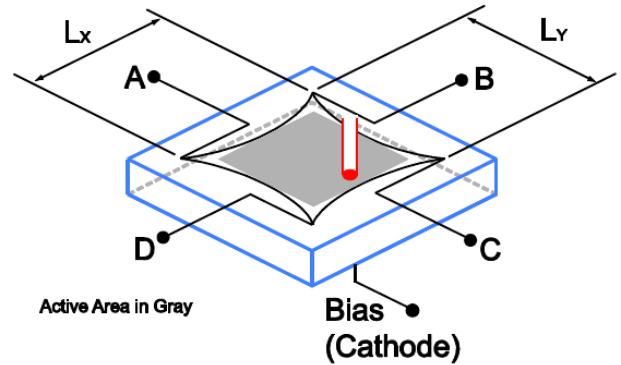
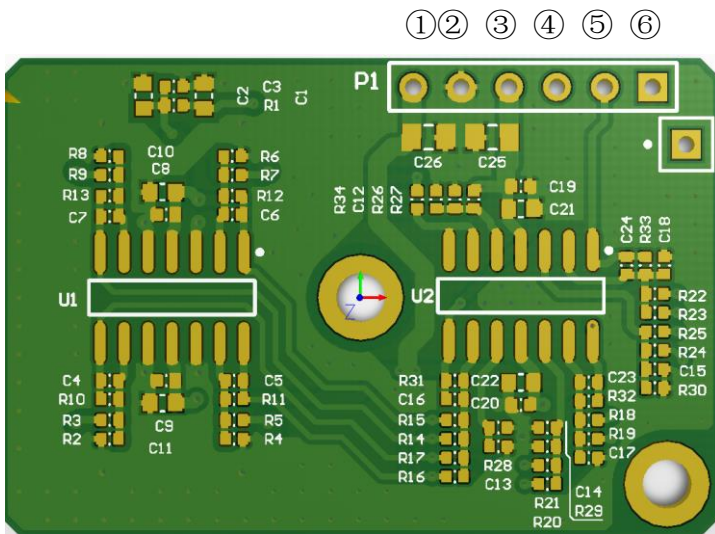


Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject change without notice

## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Active area	A			9*9		mm <sup>2</sup>
Position detection error			70		180	um
Position resolution	ΔR			0.8	2	um
Wavelength range	λ		320	960	1100	nm
Responsivity	Re	@960nm		63		V/mW
Transimpedance	Rf			1*10 <sup>4</sup>		KV/A
Output Voltage	Vout			±4		V
Output noise	Vnoise			2	10	mVp-p
3dB bandwidth	F3db			15		KHz
Spot size	Φ		0.2		9	mm
Response time	T				70	us
Photocurrent (max)	Po			40		uA

### ■ Calculating the position



- ① -5V
- ② SGND (common)
- ③ +5V
- ④ Vsum =(A+B+C+D)
- ⑤ Vy =(A+B)-(C+D)
- ⑥ Vx= (A+D)-(B+C)

$$X=(Lx*Vx)/(2* V_{SUM}) ;$$

$$Y=(Ly *Vy)/ (2* V_{SUM})$$

X, Y: Position (mm) of light spot relative to center of PSD photosensitive area