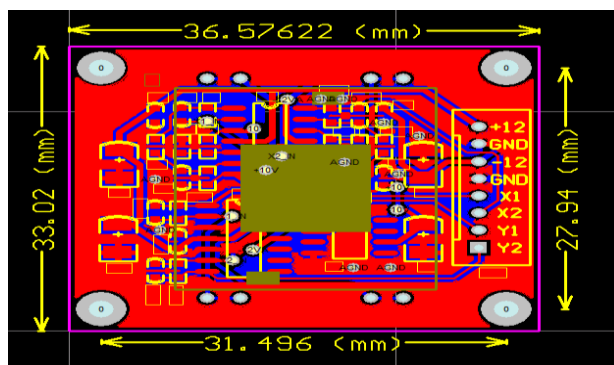
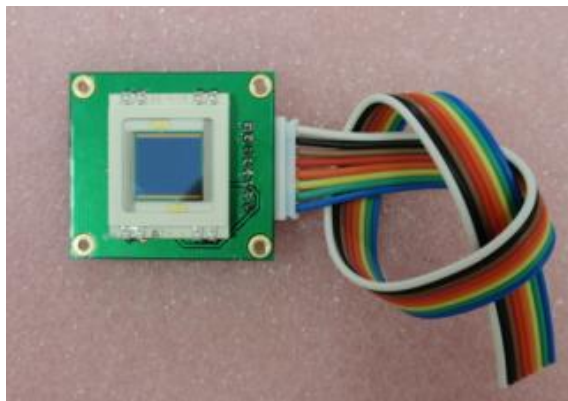


Two-dimensional PSD with I/V Amplifier



NOTES:

All dimension are in millimeters.

Description

The PSD100-SPB is a 10mm*10mm dual axis position sensing diode on a PCB with I/V amplifiers. It also contains circuitry for applying a 5V bias voltage to the position sensing diode, or the customer can externally apply a bias voltage. This module can be connected to Voltmeter, oscilloscope, A/D card or PC via USB cable.

Features

- * Both DC and AC light can work well.
- * Operating temperature is from -40 to +100°C
- * Storage temperature is from -40 to +100°C

Applications

- * NIR & Visible pulsed light position and tracking
- * Range finder
- * Length measurement
- * Laser beam tracking
- * 3D measurement
- * Distortion measurement

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

OTRON ELE CTRONIC TECHNOLOGY CO.LTD

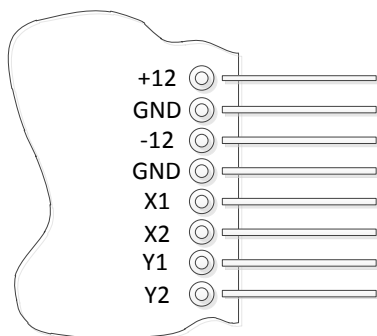
TEL:+86-21-54971821

FAX:+86-21-54971823

EMAIL:sales@otron-sensor.com

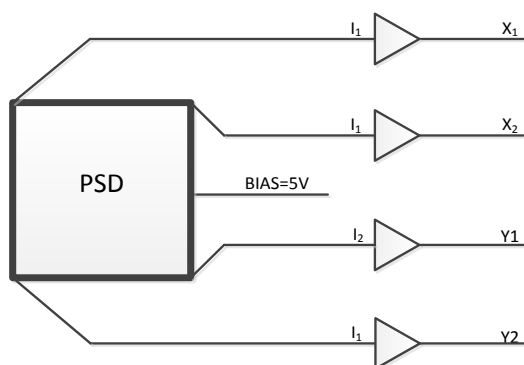
[Http://www.otron-sensor.com](http://www.otron-sensor.com)

Connection: (bottom layer)



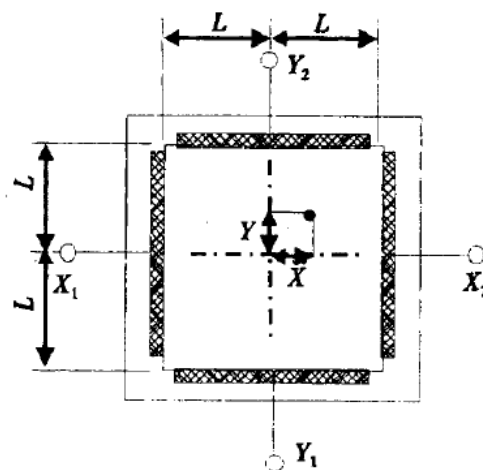
Symbol	Characteristic	Min.	Max.	Typ.	Unit
Y1	Y1 output voltage	$-V_S+3$	V_S-3	/	V
Y2	Y2 output voltage	$-V_S+3$	V_S-3	/	V
X1	X1 output voltage	$-V_S+3$	V_S-3	/	V
X2	X2 output voltage	$-V_S+3$	V_S-3	/	V
GND	GND	0	0	0	V
-12	$-V_S$, power supply voltage	-18	-4.5	-12	V
GND	GND	0	0	0	V
+12	$+V_S$, power supply voltage	+18	+4.5	+12	V

Block Diagram:



$$V_x \propto I_x = 10000$$

$$\frac{X_2 - X_1}{X_2 + X_1} = \frac{x}{L}$$



$$\frac{Y_2 - Y_1}{Y_2 + Y_1} = \frac{y}{L}$$

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

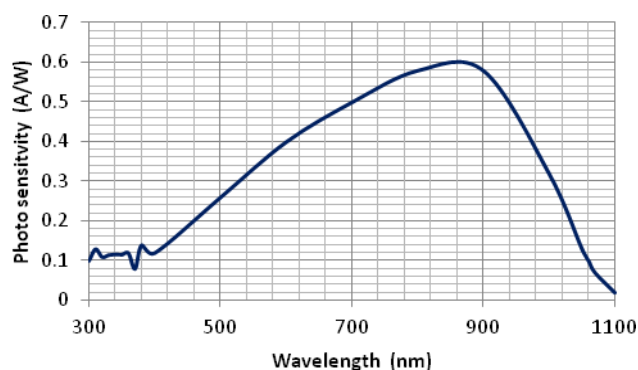


PSD100-SPB

ELECTRO OPTICAL CHARACTERISTICS:

Symbol	Characteristic	Test Conditions	Min.	Max.	Typ.	Unit
V_O	Output voltage	$V_S = \pm 12V$, $V_R = 5V$	$-V_S + 3$	$+V_S - 3$	/	V
I_O	Output current	$V_S = \pm 12V$, $V_R = 5V$	/	/	25	mA
	Theoretical noise	$V_S = \pm 12V$, $V_R = 5V$	/	/	15	nV/ $\sqrt{\text{Hz}}$
f_{3dB}	3dB bandwidth	$V_S = \pm 12V$, $V_R = 5V$	/	/	250	kHz
V_S	Power supply voltage		± 11	± 18	± 12	V
V_R	Applied Bias Voltage		0	12	10	V
Tstg	Storage Temp		-15	+100	+25	°C
Top	Operating Temp		0	+70	+25	°C

PSD Characteristics:



Parameter	Symbol	Min.	Typ.	Max.	Unit
Active area			10 x 10		mm ²
Position non-linearity			0,3	0,8	%(±)
Detector resistance	R_{det}	7	10	16	k Ω
Dark current	I_d		100	500	nA
Noise current	I_{noise}		1,3	2,5	pA/ $\sqrt{\text{Hz}}$
Responsivity	r		0,63		A/W
Capacitance	C_j		90	110	pF
Rise time (10-90%)	t_r		400	800	ns
Reverse voltage (bias)	V_r	5	15	20	V
Thermal drift			40	200	ppm/°C
Maximum ratings					
Reverse voltage	V_{R-max}			30	V
Operating temperature	T_{oper}			70	°C
Storage temperature	T_{stg}			100	°C

Test conditions: Room temperature 23°C. Reverse voltage 15 V. Light-source wavelength 940 nm.
Position non-linearity and thermal drift are valid within 80% of the detector length.

Package: Ceramic substrate, 25,0 x 21,0 mm², with solderable pins and protective window.

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

OTRON ELECTRONIC TECHNOLOGY CO.LTD

TEL:+86-21-54971821

FAX:+86-21-54971823

EMAIL:sales@otron-sensor.com

[Http://www.otron-sensor.com](http://www.otron-sensor.com)