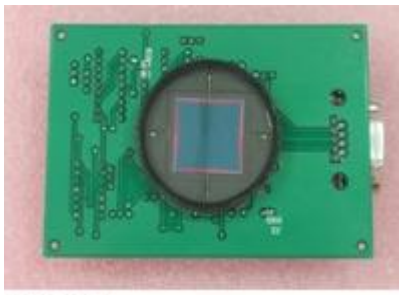
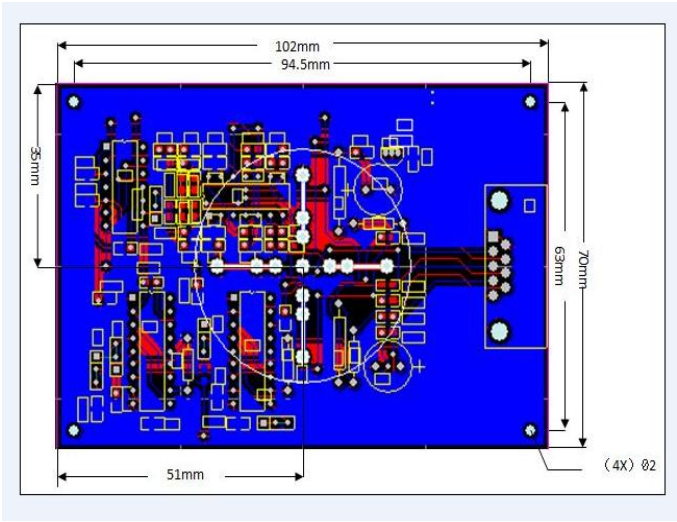
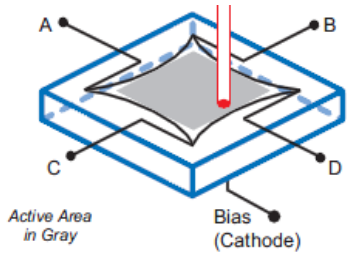
PSD400-SPB

Two-dimensional PSD with SUM, Difference Amplifier And Divider circuit



PSD400-SPB





NOTES:

All dimension are in millimeters.

Description

Tetra-lateral position sensing detector PSD400-LC is Assembled on compact signal processing circuit PCB.

The output voltage directly representing the position data, the position(mm) of a light spot from the PSD center is Obtained as an output voltage, this module can be connected to Voltmeter, oscilloscope, A/D card or PC via RS232 cable.

Features

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

Applications

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

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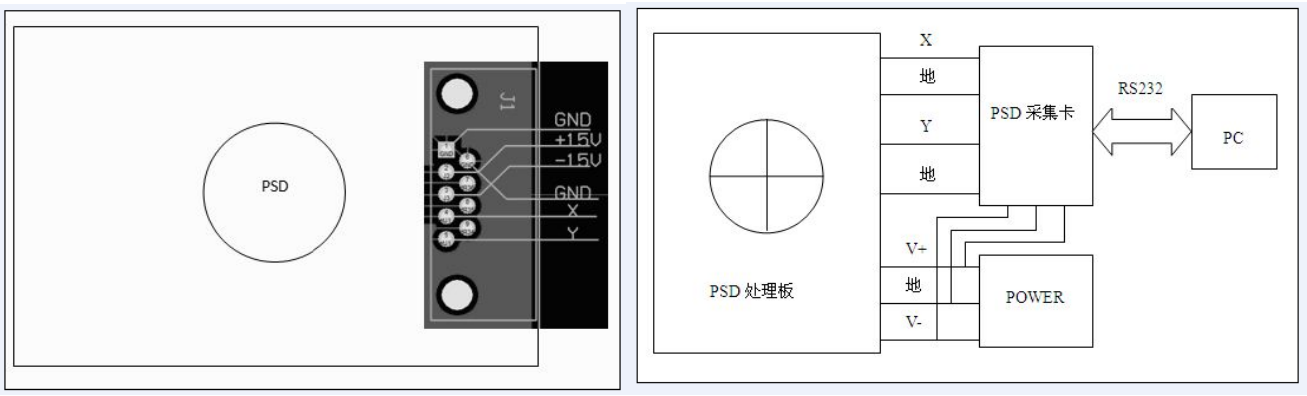
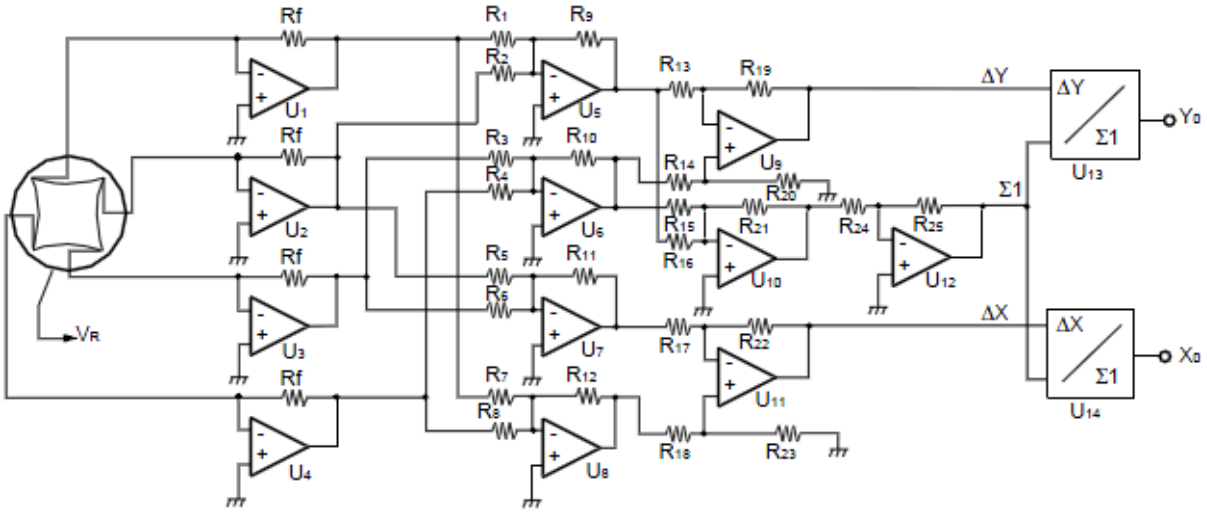
Connection: (bottom layer)



Block Diagram:



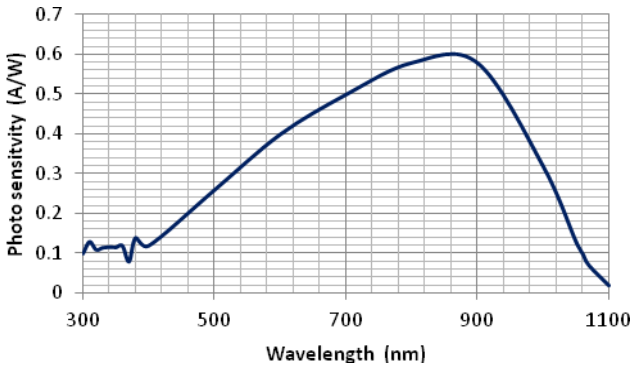
$$x = \frac{(V_{X2} + V_{Y1}) - (V_{X1} + V_{Y2})}{V_{X1} + V_{X2} + V_{Y1} + V_{Y2}} \times \frac{L}{2}$$

$$y = \frac{(V_{X2} + V_{Y2}) - (V_{X1} + V_{Y1})}{V_{X1} + V_{X2} + V_{Y1} + V_{Y2}} \times \frac{L}{2}$$

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply voltage	Vcc			±15V		V
Applied Bias Votage	Vbias			6		V
Current consumption	Icc			25		mA
Output offset voltage	Vos			−20-+20		mV
Output voltage	VX,VY			-10~+10		V
Output noise voltage	Vn			8		mVp-p
Position detection error	E			±3		%
Position resolution	Δ R			8		um
Cut-off frequency （-3dB）	f-3dB	V_R=15V, 650nm, 50Ω		15		KHz
Signal conversion time	T			5		mS

PSD Characteristics:



Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Sensor Type				Pincushion Tetra Lateral Senaor		
Wavelength Range	λ			400-1100		nm
Sensor Size(active area)	A			21×21		mm^2
Recommended Spot Size				φ 0.2-φ 10		mm
Absolute Position Detection Error(mm)				5		μm
Incident power density	Ist	V_R=5V R_L=1KΩ		10		mw/cm^2
Interelectrode Resistance	R			60		kΩ
Photo sensitivity	S_R	λ=650nm		0.45		A/W
		λ=900nm		0.58		