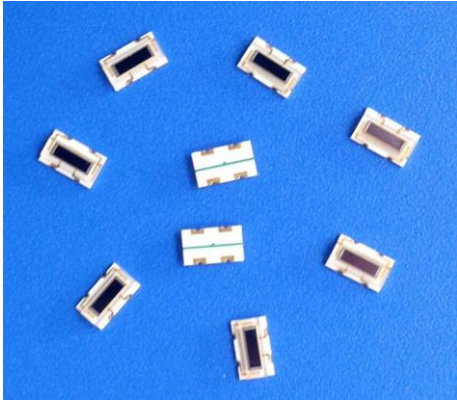


## One Direction Position Sensing Detector PSD1545



### Description

The PSD1545 is according to the lateral Effect photodiode principle. It is analogue Device and displays excellent position Resolution under better system signal to Noise ration.

It has low dark current, high linearity in the Biased mode. It can also detect the optical Power and position of the light sourcing at The same time.

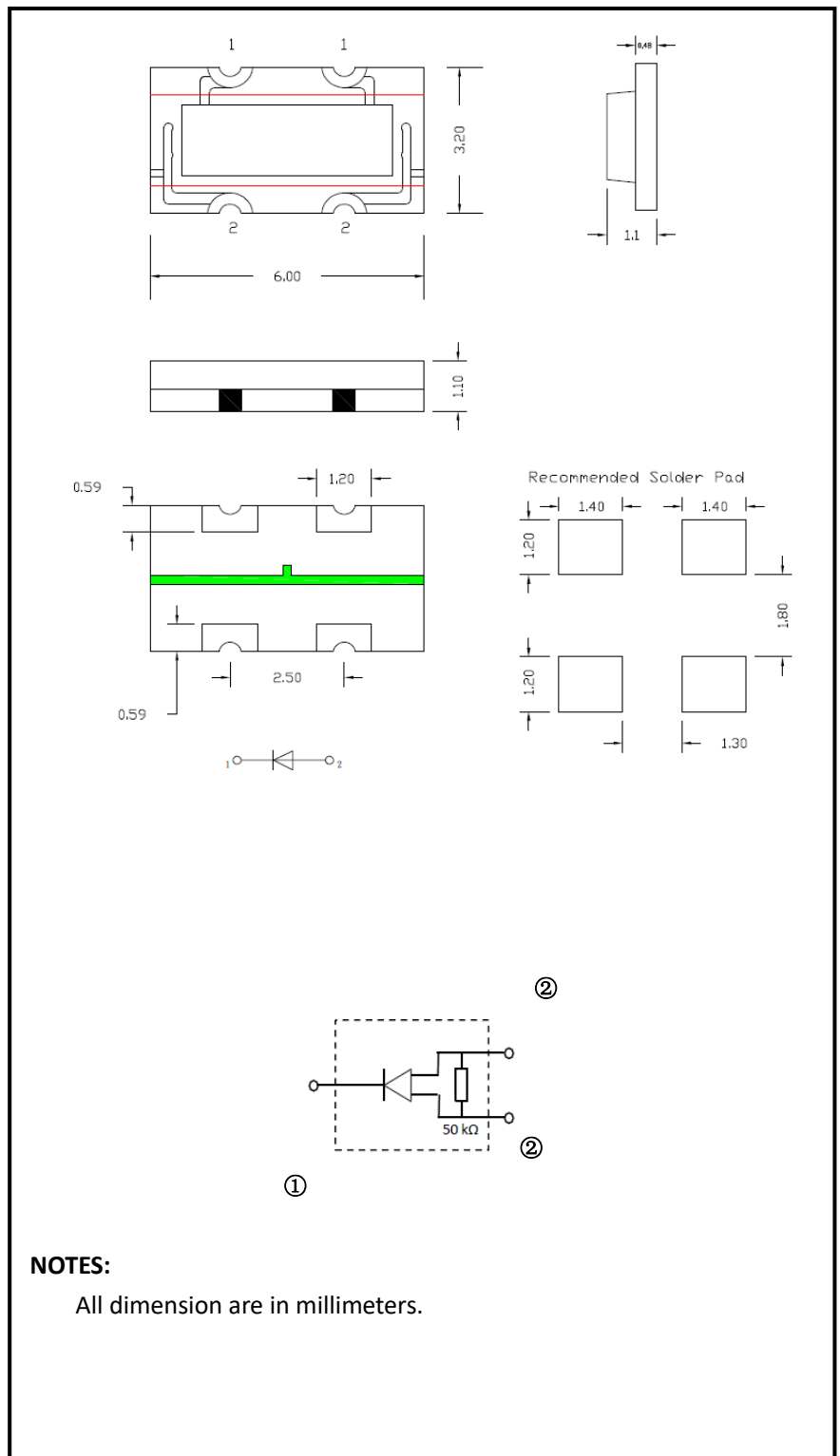
### Features

- \* High speed response
- \* Wide angular response
- \* Operating temperature is from -40 to +80°C
- \* Chip active area: 4.54\*1.54mm
- \* High linearity

### Applications

- \* Proximity sensor

- \* Laser beam focusing



#### NOTES:

All dimension are in millimeters.

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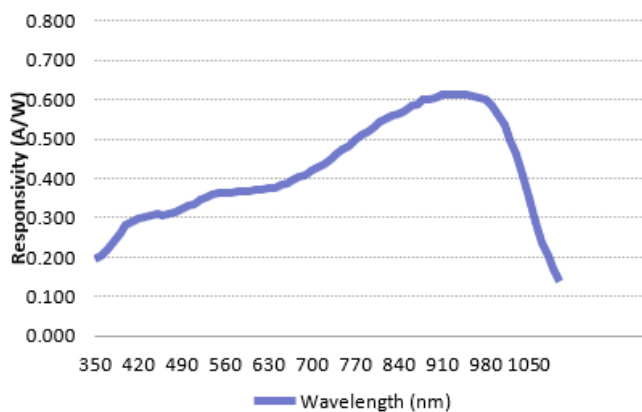


## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Chip size	A				1.54*4.54	mm
Photo sensitivity	S <sub>R</sub>	650nm		0.27		A/W
		850nm		0.51		A/W
Isc Temperature Coefficient	TC Isc	2856k		0.18		%/°C
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =10mA, E <sub>v</sub> =0lx	0.5		1.3	V
Reverse Voltage	V <sub>BR</sub>	I <sub>R</sub> =100uA	10	30		V
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I <sub>D</sub>	V <sub>R</sub> =5V		12	15	nA
Rise time	t <sub>R</sub>	V <sub>R</sub> =1V;λ=850nm;R <sub>L</sub> =1kΩ		5		μs
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =1V f=1MHz		35		pF
		V <sub>R</sub> =10V f=1MHz		15		
Spectral Application Range	λ <sub>range</sub>		400		1100	nm
Spectral Response-Peak	λ <sub>p</sub>			850		nm
Angular Resp 50% Resp Pt	θ <sub>1/2</sub>			±60		Degrees
Interelectrode resistance	R <sub>s</sub>	E <sub>v</sub> =0lx	30	50	70	kΩ
Noise limited resolution	Res.	λ=635nm, P <sub>o</sub> =0.5uW, Spot size= φ 0.5mm		0.05		um
Position detection error	Pe	λ=635nm, P <sub>o</sub> =0.5uW, Spot size= φ 0.5mm		±0.2	±1.0	%

\* E<sub>v</sub>: Illuminance by CIE standard light source A (tungsten lamp)

### ■ Spectral response



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