PD3111F

Compact PSD* for Camera AF

■ Features

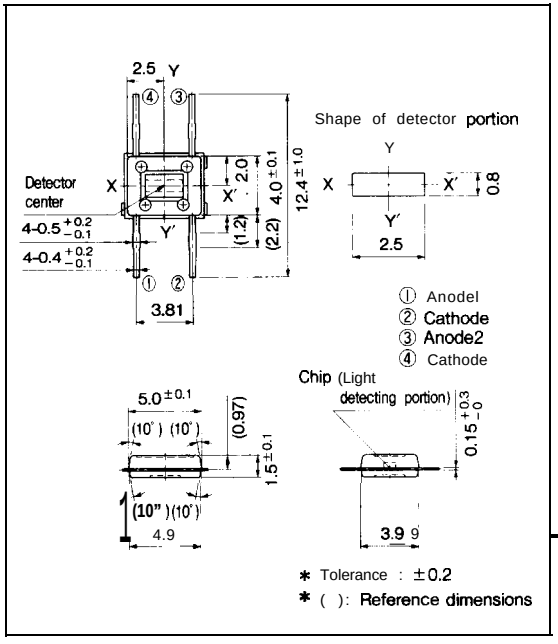
1. Compact flat package
2. High accuracy detection at close range
   Size of light detecting chip : 2.5mm
   (0.5mm longer than PD3101F)
3. High noise resistance
4. Visible light cut-off type
5. Provide continuous electrical signal
   according to incident position of light

■ Application

1. Cameras

* PSD : Position Sensitive Detector

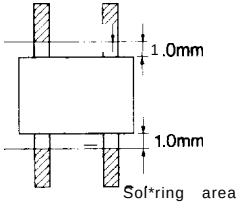
■ Outline Dimensions (Unit : mm)



■ Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse voltage	V_R	30	V
Operating temperature	T_{opr}	-25 to +85	℃
Storge temperature	T_{stg}	−40 to +85	℃
*1 Soldering temperature	T_{sol}	+260	℃

*1 For MAX. 3 seconds at the position of 1.0mm from the resin edge



■ Electro-optical Characteristics

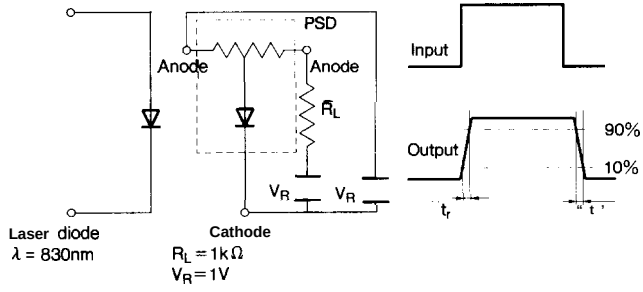
(Ta=25℃)

Parameter	Symbol]	Conditions	MIN.	TYP.	MAX.	Unit
Reverse voltage	V_R	$I_R=10\mu A$	30	—	—	V
Peak sensitivity wavelength	λp		—	940	—	nm
Response time	*2 t_r, t_f	$V_R=1V$, $R_L=1k\Omega$	—	15	30	u s
Resistance between electrode	Rie	$V_R=1V$, Va=0.5V	160	200	240	kΩ
Error of position detection	*3 —		—	—	±25	μm
Sensitivity	R		—	0.5	—	A/W

*1 $I_L=I_1+I_2$

However, I_1 and I_2 are collector current of Al and A2.
Ex : Illuminance by CIE standard light source A (tungsten lamp)

*2 Test circuit for response time is shown below



*3 75% area from detecting portion center to the edge of detecting portion

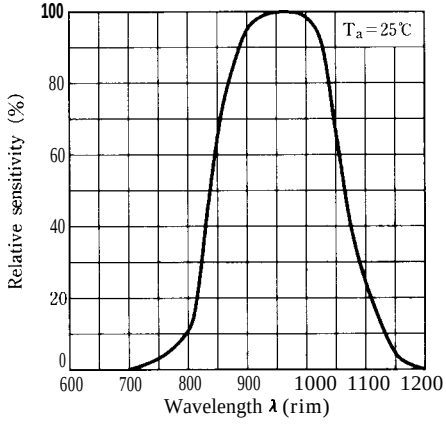
Definition of error of position detection

Error of position detection of each incident light position defines the following formula if electrical center position is $I_1=12$

Error of position detection (μm) $= \frac{L}{2} \times \frac{I_1-I_2}{I_1+I_2}$ incident light position (μm)

L : Length of light detector surface

Fig. 1 Spectral Sensitivity



● Please refer to the chapter "Precautions for Use." (Page 78 to 93)