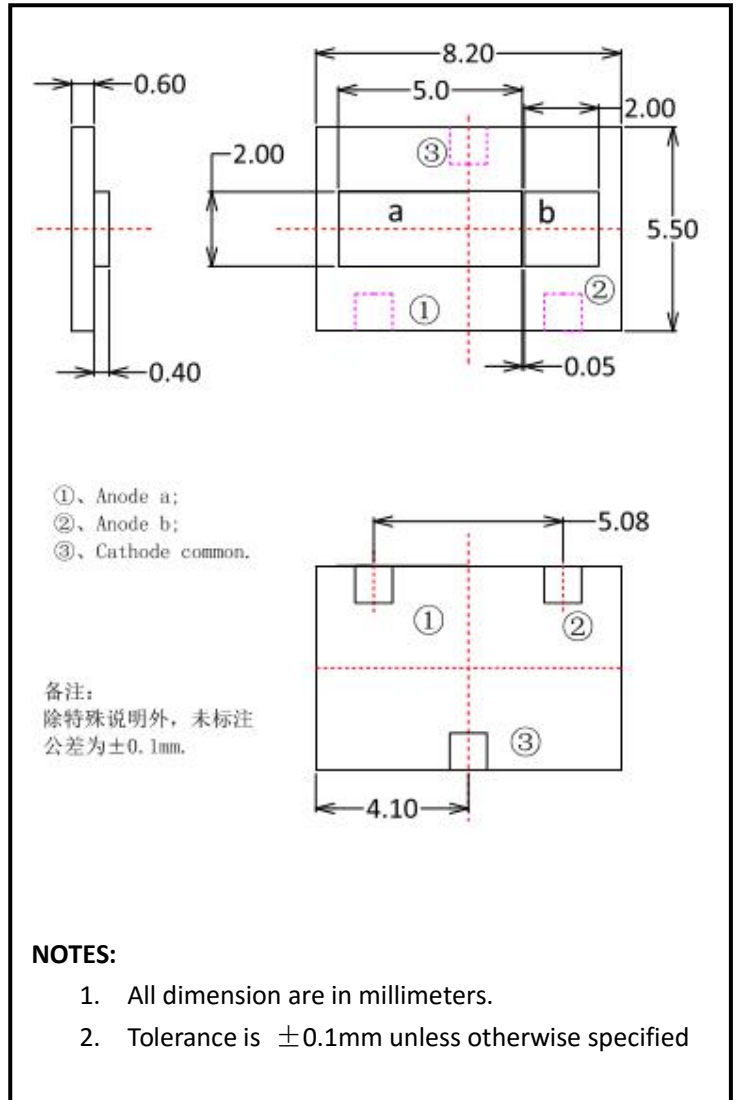
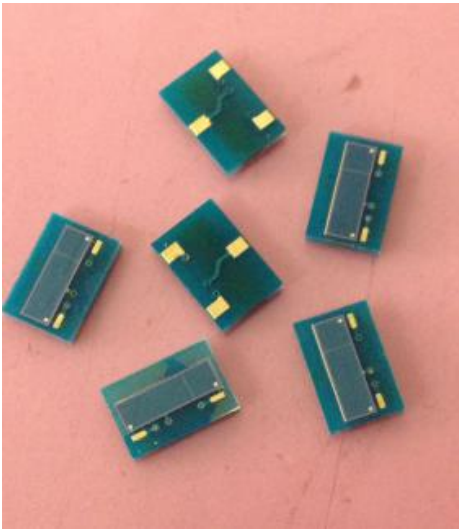


Silicon PIN Photodiode Array



Description

The OSD2225(2 cell) is a PIN photo diode array with 0.05mm gap of each element, thin plastic package by Molding technology. It has fast switch time for optical Detect application.

Features

- * Positioning is best performed
- * High-speed response
- * Low noise

General Ratings

- * High linearity
- * Low dark current

Applications

- * Follow-up controls
- * Edge drives
- * Industrial electronics

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Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Chip size	Size		2.3*7.35			mm ²
Active area	A	Small cell	2.0*2.0			mm ²
		Large cell	2.0*5.0			mm ²
Gap	Gap	Distance of Element to element	0.05			mm
Short circuit Current	I _{sc}	Ev=1000lx fc=2856k*		40		μA
		Ev=1000lx fc=2856k*		100		uA
Isc Temperature Coefficient	TC Isc	2856k		1.1		%/°C
Open Circuit Voltage	Voc	Ev=1000lx fc=2856k*, small cell		364		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I _D	Small cell, VR=10V		5		nA
		Large cell, VR=10V		10		nA
Rise time	t _R	V _R =5V;λ=850nm;R _L =50Ω		18		ns
		V _R =5V;λ=850nm;R _L =50Ω		25		ns
Temp coefficient of I _D	T _{CID}			0.18		times/°C
Forward voltage	VF	IF=20mA		1.0		V
Reverse breakdown voltage	V _{(BR)R}	I _R =100μA Ev=0lx	60			V
Junction Capacitance	C _J	V _R =5V f=1MHz , small cell		8		pF
		V _R =5V f=1MHz, large cell		13		
Photo sensitivity	S _R	650nm		0.38		A/W
		940nm		0.64		
CrossTalk Channel-to-Channel		400-850nm, Adjacent Channels		0.1	0.5	%
		850-1100nm, Adjacent Channels		1	5	
Spectral Application Range	λ _{range}		400		1100	nm
Spectral Response-Peak	λ _p			940		nm
Shunt resistance	R _{sh}	V _R =10mV		0.5		GΩ
Rsh Temperature Coefficient	TC R _{sh}	Ev=100lx , VR=10mV		0.18		%/°C
Angular Resp 50% Resp Pt	θ _{1/2}			±55		Degrees
Noise Equivalent Power	NEP	VR =10V λ=940nm, small cell		6.5×10 ⁻¹⁴		W/Hz ^{1/2}
		VR =10V λ=940nm, large cell		9.1×10 ⁻¹⁴		W/Hz ^{1/2}
Specific Detectivity	D*	VR =10V λ=940nm, small cell		3.1×10 ¹²		cm(Hz/W) ^{1/2}
		VR =10V λ=940nm, large cell		3.5×10 ¹²		cm(Hz/W) ^{1/2}

* Ev: Illuminance by CIE standard light source A (tungsten lamp)

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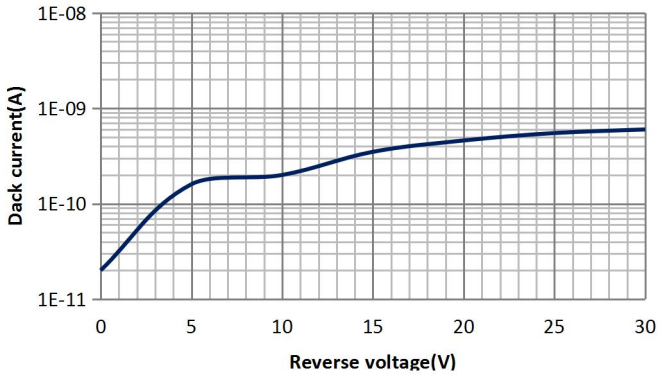
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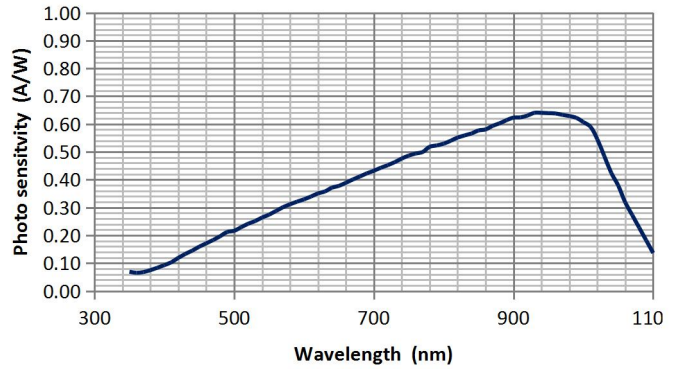
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■ Dark current vs. reverse voltage

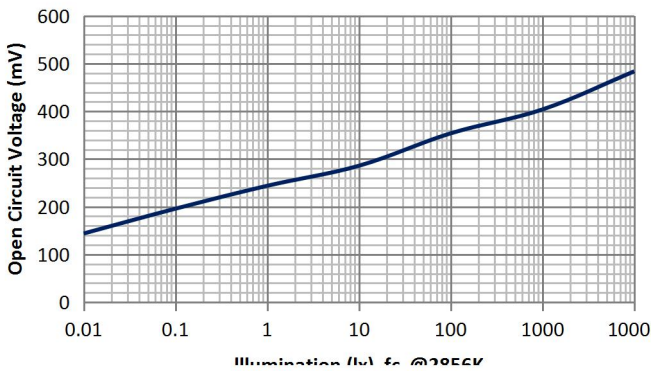


■ Spectral response



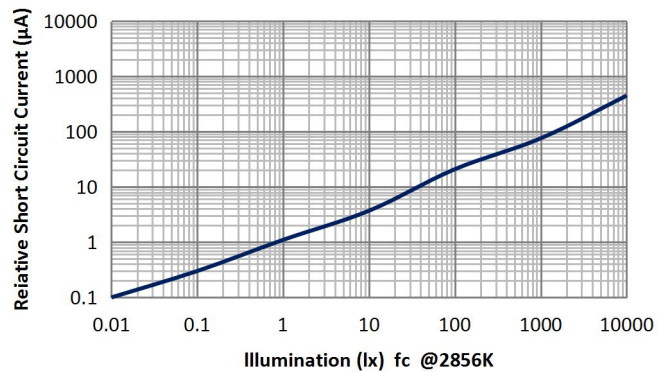
■ Open circuit Voltage

vs Illumination



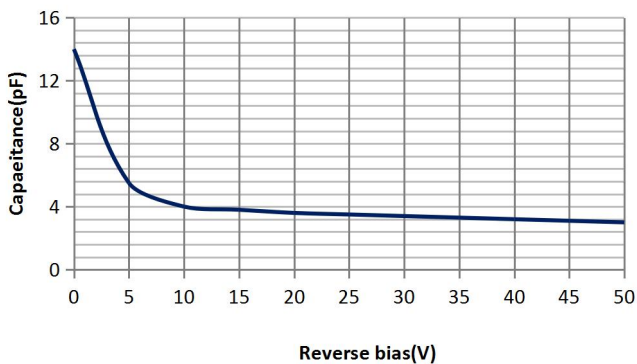
■ Relative Short Circuit

Current vs. Illumination

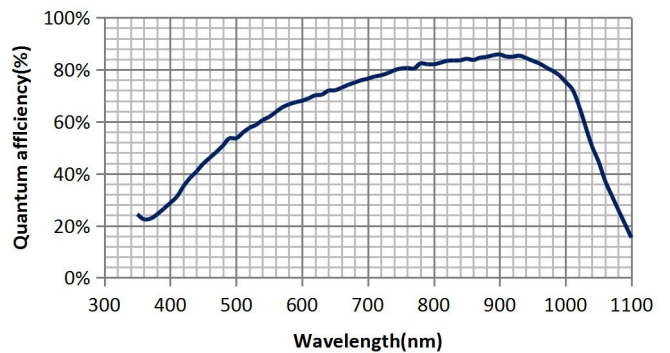


■ Relative Junction Capacitance

VS. Voltage



■ Quantum efficiency



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