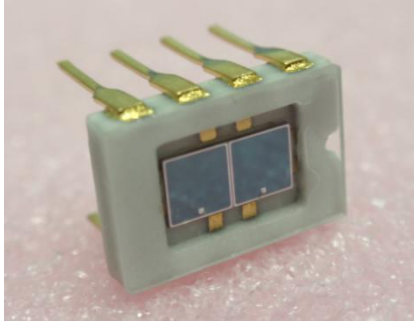


## Silicon PIN Photodiode Array

### OSD9-2-IC



## Description

The OSD9-2-IC is a high sensitive silicon planar photodiode array in an inline configuration. Two single photodiode chips with a common cathode are mounted in a DIP8 package with flat glass. Each chip measures 3mm by 3mm and provides a radiant sensitive area of 7.2mm<sup>2</sup>.

## Features

- \* High-speed response
- \* High photo sensitivity
- \* High reliability in demanding environments
- \* Operating temperature is from -40 to +100°C
- \* Storage temperature is from -40 to +100°C
- \* Soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

## General Ratings

- \* Type Silicon Photodiode
- \* Low dark current
- \* Chip active area: 2.675\*2.675\*2mm<sup>2</sup>
- \* gpa of each element: 25.4um

## Applications

- \* optical switcher
- \* Automatic sensor
- \* pulse laser detector
- \* Industry machine

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**NOTES:**

1. All dimension are in millimeters.
- 2.

A	2.8±0.2	D1	1.1±0.1
AA	0.5±0.1	E	7.8±0.2
A1	1±0.1	E1	7±0.2
...	1.8±		2.5±

3. PIN1=PIN4=PIN5=PIN8= Cathode  
PIN6=Anode1, PIN7=Anode2  
PIN2=PIN3=NC



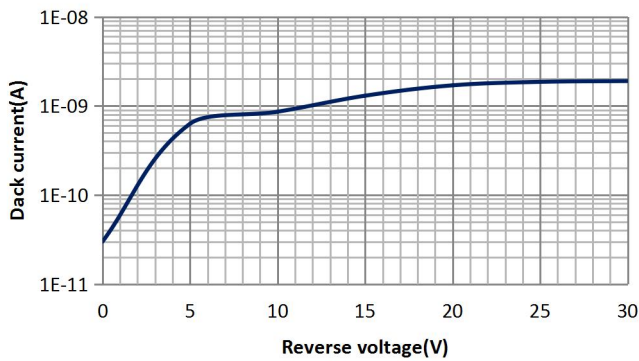
## Absolute Maximum Ratings (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Short circuit Current	I <sub>sc</sub>	Ev=100lx , fc=2856k*		42		μA
Isc Temperature Coefficient	TC I <sub>sc</sub>	2856k		1.1		%/°C
Open Circuit Voitage	V <sub>oc</sub>	Ev=100lx , fc=2856k*		344		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I <sub>D</sub>	V <sub>R</sub> =10mV		50		pA
		V <sub>R</sub> =10V		860		
Tempcoeffi-cient of I <sub>D</sub>	T <sub>CID</sub>			0.18		times/°C
Reverse breakdown voltage	V <sub>(BR)R</sub>	I <sub>R</sub> =100μA , Ev=0lx	33			V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V , f=1MHz		33		pF
		V <sub>R</sub> =10V , f=1MHz		8.2		
Turn-on/Turn-off Time	ton/toff	V <sub>R</sub> =5V, λ=850nm, R <sub>L</sub> =50Ω		50/50		ns
		VR=10V, λ=940nm, RL=1KΩ		1000/1000		
		VR=10V, λ=880nm, RL=1KΩ		200/200		
		VR=10V, λ=650nm, RL=1KΩ		80/80		
Photo sensitivity	S <sub>R</sub>	650nm		0.38		A/W
		880nm		0.60		
		940nm		0.64		
CrossTalk Channel-to-Channel		400-850nm, Adjacent Channels		0.1	0.5	%
		850-1100nm, Adjacent Channels		1	5	
Uniformity of each Element	%		1		2	%
Spectral Application Range	λ <sub>range</sub>		400		1100	nm
Spectral Response-Peak	λ <sub>p</sub>			940		nm
Shunt resistance	R <sub>sh</sub>	V <sub>R</sub> =10mV		0.2		GΩ
Rsh Temperature Coefficient	TC R <sub>sh</sub>			0.18		%/°C
Angular Resp 50% Resp Pt	θ <sub>1/2</sub>			±60		Degrees
Noise Equivalent Power	NEP	V <sub>R</sub> =10V, λ=940nm		2.59×10 <sup>-14</sup>		W/Hz <sup>1/2</sup>
Specific Detectivity	D*	V <sub>R</sub> =10V, λ=940nm		1.46 × 10 <sup>13</sup>		cm(Hz/W) <sup>1/2</sup>

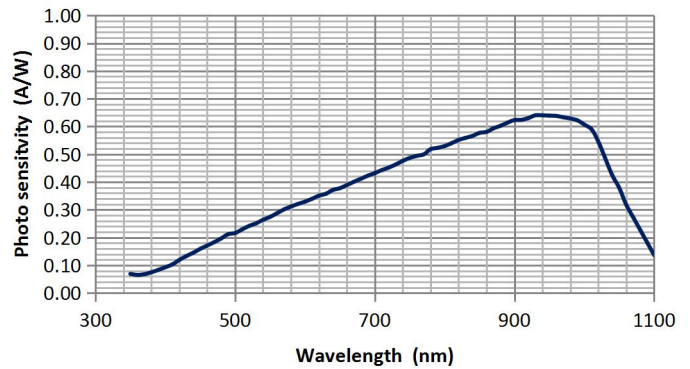
\* Ev: Illuminance by CIE standard light source A (tungsten lamp)

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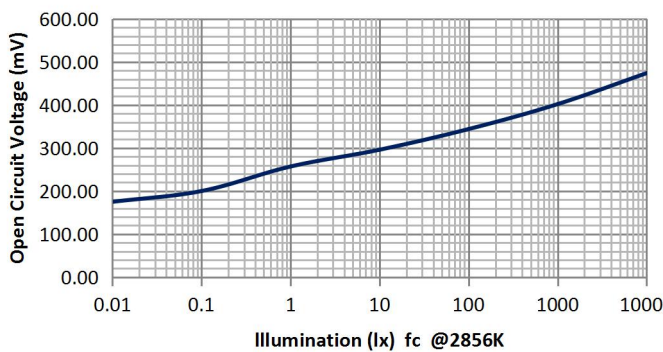
## ■ Dark current vs. reverse voltage



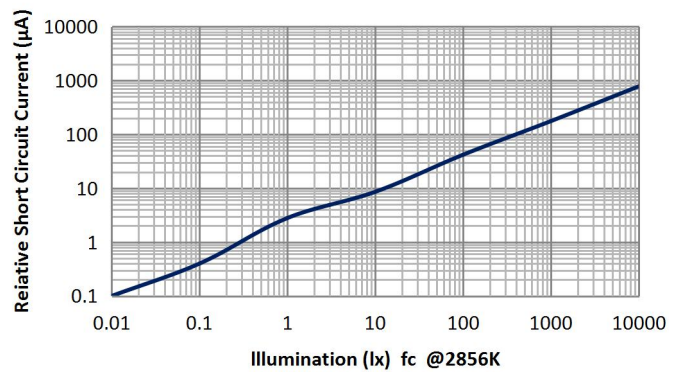
## ■ Spectral response



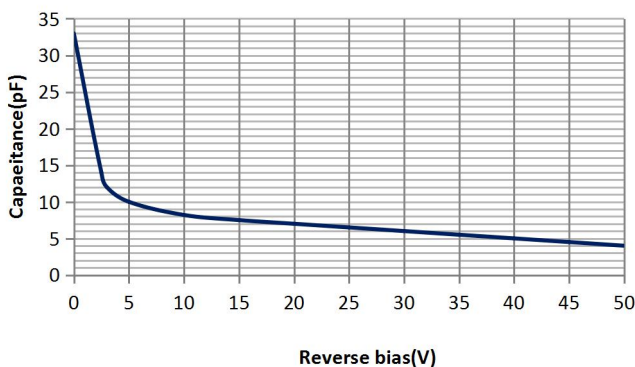
## ■ Open circuit Voltage vs Illumination



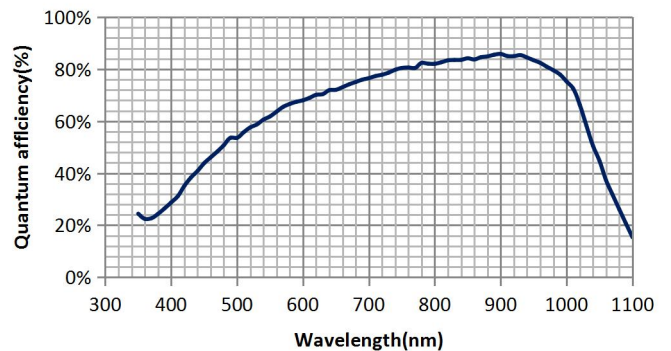
## ■ Relative Short Circuit Current vs. Illumination



## ■ Relative Junction Capacitance VS. Voltage



## ■ Quantum efficiency



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