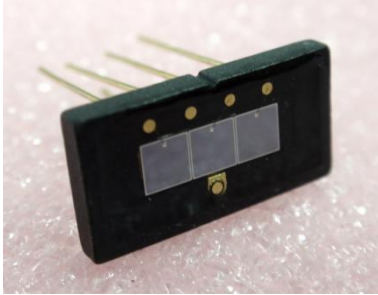


Silicon PIN Photodiode Array

OSA9-3-IC



Description

The OSA9-3-IC is a high sensitive silicon planar photodiode array in an inline configuration. Four single photodiode chips with a common cathode are mounted in a ceramic package with resin coating. Each chip measures 3mm by 3mm and provides a radiant sensitive area of 7.2mm².

Features

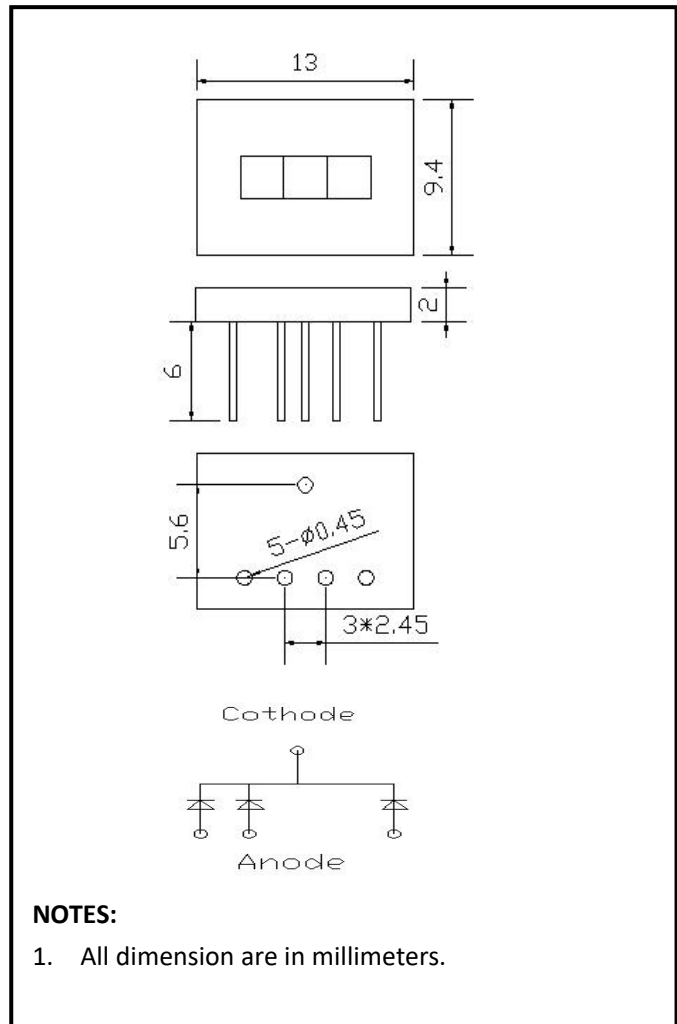
- * High-speed response
- * High photo sensitivity
- * High reliability in demanding environments
- * Operating temperature is from -40 to +100°C
- * Storage temperature is from -40 to +100°C
- * Soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

General Ratings

- * Type Silicon Photodiode
- * Low dark current
- * Chip active area: 2.675*2.675*3mm²
- * Area of each element: 25.4um

Applications

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



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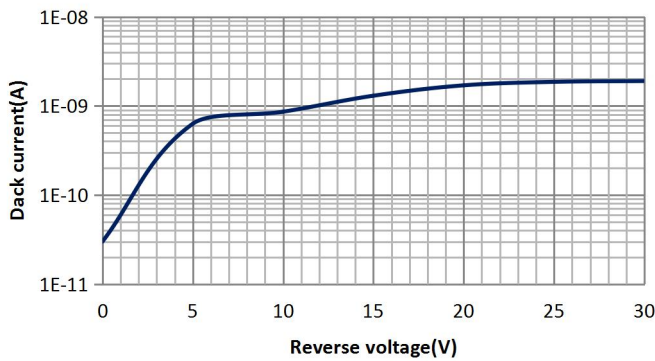
Absolute Maximum Ratings (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Short circuit Current	I _{SC}	Ev=100lx , fc=2856k*		42		μA
Isc Temperature Coefficient	TC I _{SC}	2856k		1.1		%/°C
Open Circuit Voitage	Voc	Ev=100lx , fc=2856k*		344		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I _D	V _R =10mV		50		pA
		V _R =10V		860		
Tempcoeffi-cient of I _D	T _{CID}			0.18		times/°C
Reverse breakdown voltage	V _{(BR)R}	I _R =100μA , Ev=0lx	33			V
Junction Capacitance	C _J	V _R =0V , f=1MHz		33		pF
		V _R =10V , f=1MHz		8.2		
Turn-on/Turn-off Time	ton/toff	V _R =5V, λ=850nm, R _L =50Ω		50/50		ns
		V _R =10V, λ=940nm, R _L =1KΩ		1000/1000		
		V _R =10V, λ=880nm, R _L =1KΩ		200/200		
		V _R =10V, λ=650nm, R _L =1KΩ		80/80		
Photo sensitivity	S _R	650nm		0.38		A/W
		880nm		0.60		
		940nm		0.64		
CrossTalk Channel-to-Channel		400-850nm , Adjacent Channels		0.1	0.5	%
		Non-adjacent Channels		0.01	0.05	
		850-1100nm , Adjacent Channels		1	5	
		Non-adjacent Channels		0.1	2.5	
Uniformity of each Element	%		1		2	%
Spectral Application Range	λ _{range}		400		1100	nm
Spectral Response-Peak	λ _p			940		nm
Shunt resistance	R _{sh}	V _R =10mV		0.2		GΩ
Rsh Temperature Coefficient	TC R _{sh}			0.18		%/°C
Angular Resp 50% Resp Pt	θ _{1/2}			±60		Degrees
Noise Epuivalent Power	NEP	V _R =10V , λ=940nm		2.59 × 10 ⁻¹⁴		W/Hz ^{1/2}
Specific Detectivity	D*	V _R =10V , λ=940nm		2.07 × 10 ¹³		cm(Hz/W) ^{1/2} 2

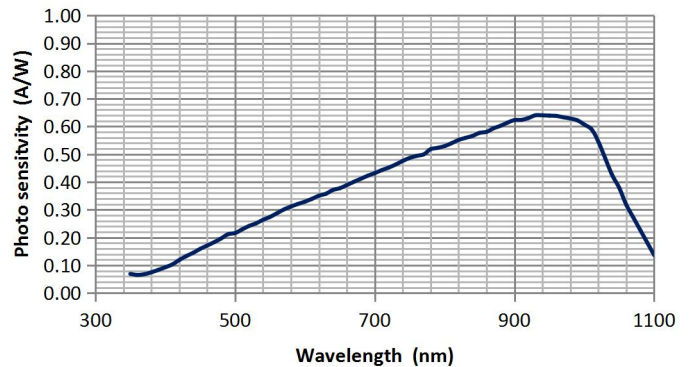
* Ev: Illuminance by CIE standard light source A (tungsten lamp)

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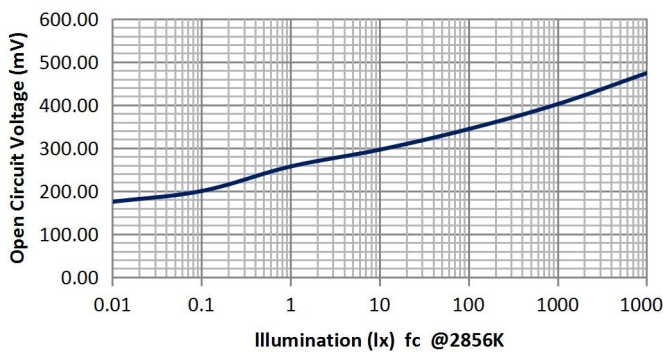
■ Dark current vs. reverse voltage



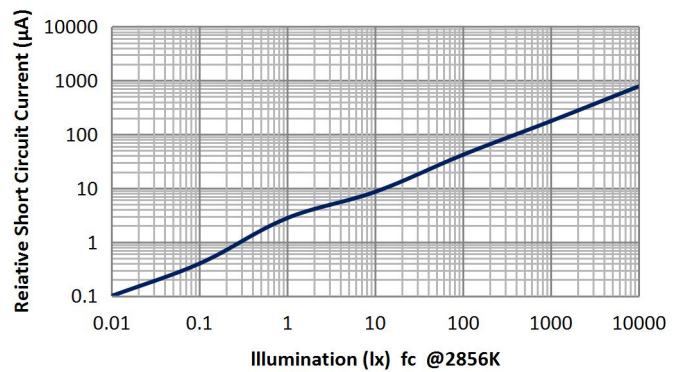
■ Spectral response



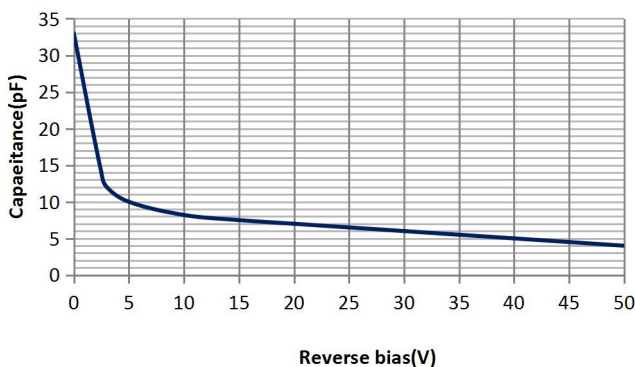
■ Open circuit Voltage vs Illumination



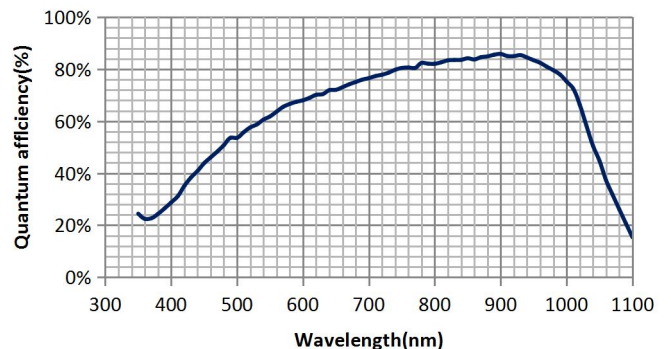
■ Relative Short Circuit Current vs. Illumination



■ Relative Junction Capacitance VS. Voltage



■ Quantum efficiency



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