

Large active area Photodiode

OSD100-IC



Description

The OSD100-IC is high-output, high sensitivity silicon Photodiode mounted in ceramic stem package, With resin coating, permits wide angular response.

Features

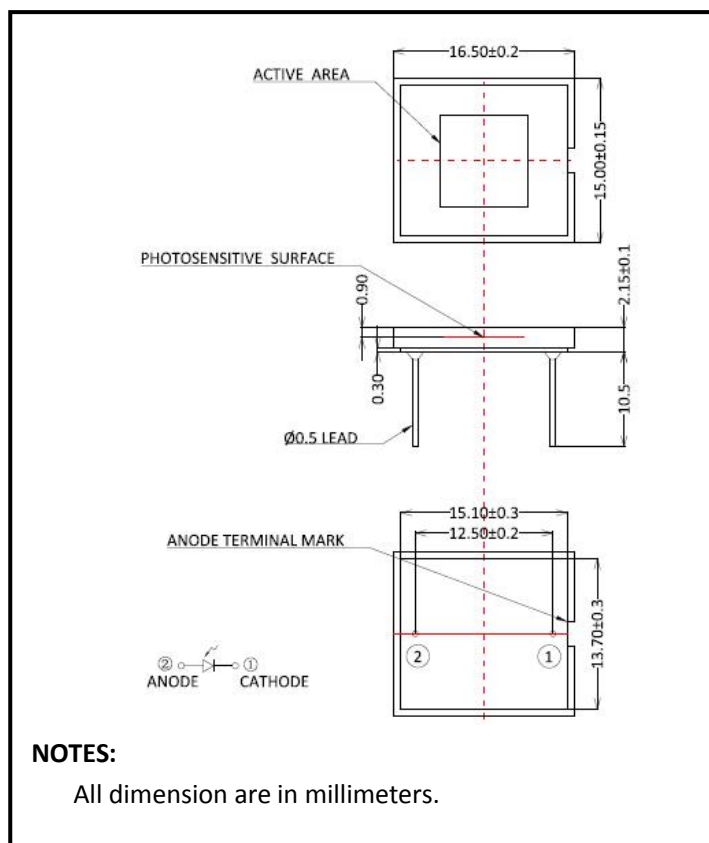
- * High sensitivity, high speed response
- * Wide angular response
- * High reliability in demanding environments
- * Operating temperature is from -40 to $+80^{\circ}\text{C}$
- * Storage temperature is from -40 to $+100^{\circ}\text{C}$
- * soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

General Ratings

- * Type Silicon Photodiode
- * High linearity
- * Low cost
- * Low dark current

Applications

- * Analytical instruments
- * Precision photometry
- * Fluorescence detector
- * IR/ pulse Laser light Monitoring
- * Optical measurement equipment
- * Medical equipment
- * Spectrum photometry/CT scan



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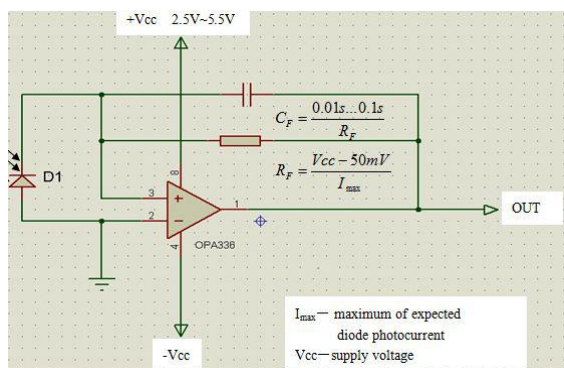
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Absolute Maximum Ratings (Ta=25°C)

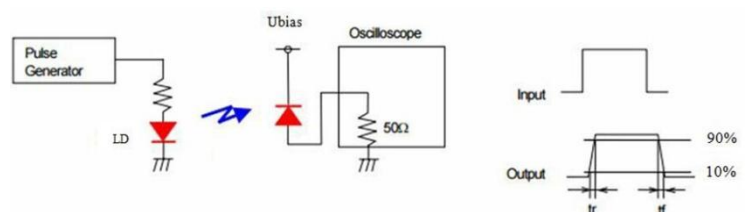
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Chip size	Size			10*10		mm
Active area	A			9.4*9.4		mm ²
Short circuit Current	I _{sc}	Ev=5mw/cm ² fc=2856k*		750		μA
Isc Temperature Coefficient	TC Isc	2856k		1.2		%/°C
Open Circuit Voltage	Voc	Ev=5mw/cm ² fc=2856k*		450		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I _D	VR=10mV		80		pA
		VR=10V		760		
Rise time	t _{R**}	V _R =0V; λ=635nm; R _L =50Ω, f=1kHz,		320		ns
		V _R =5V; λ=635nm; R _L =50Ω, f=1kHz		310		ns
		V _R =10V; λ=635nm; R _L =50Ω, f=1kHz		270		ns
Temp coefficient of I _D	T _{CD}			0.18		times/°C
Reverse breakdown voltage	V _{(BR)R}	I _R =100μA Ev=0lx	50			V
Junction Capacitance	C _J	V _R =0V f=1MHz		790		pF
		V _R =10V f=1MHz		150		
Photo sensitivity	S _R	650nm		0.37		A/W
		940nm		0.66		
Spectral Application Range	λ _{range}		400		1100	nm
Spectral Response-Peak	λ _p			940		nm
Shunt resistance	Rsh	VR=10mV		0.13		GΩ
Rsh Temperature Coefficient	TC Rsh			0.18		%/°C
Angular Resp 50% Resp Pt	θ _{1/2}			±60		Degrees
Noise Equivalent Power	NEP	V _R = 10V λ=940nm		2.44×10 ⁻¹⁴		W/Hz ^{1/2}
Specific Detectivity	D*	V _R = 10V λ=940nm		4.09×10 ¹³		cm(Hz/W) ^{1/2}

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

Typical application circuit



** Response time measurement Circuit:

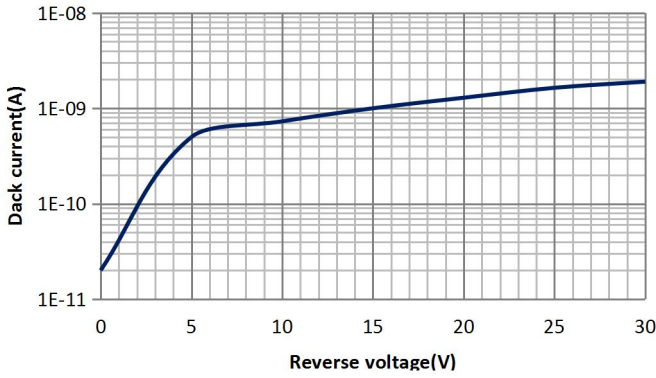


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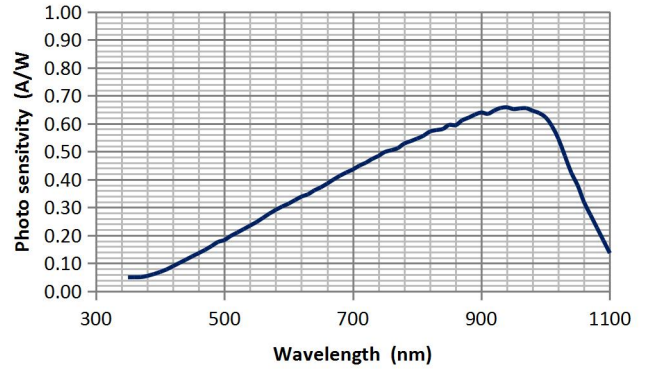


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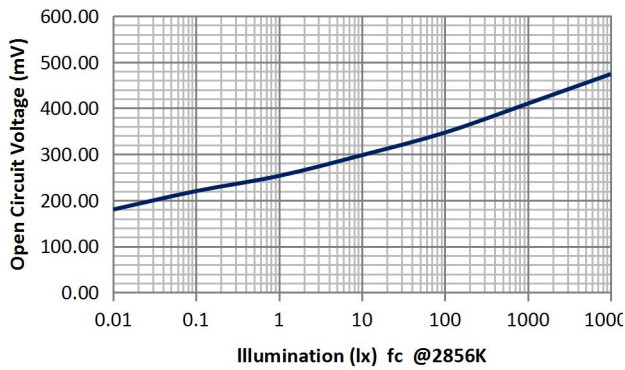
■ Dark current vs. reverse voltage



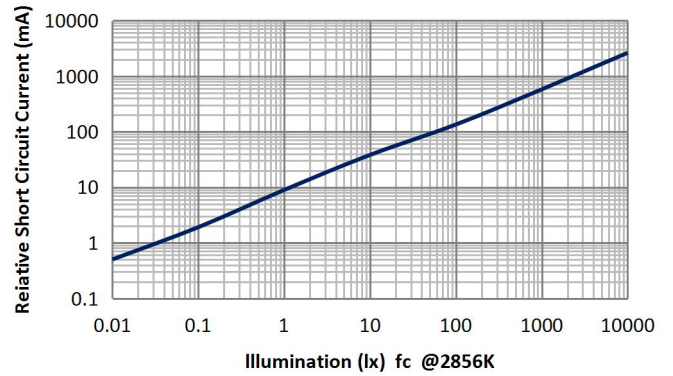
■ Spectral response



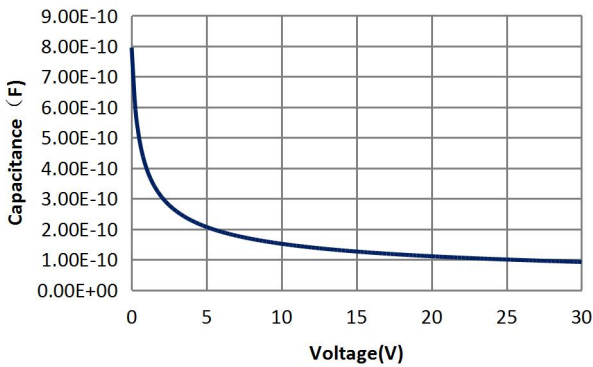
■ Open circuit Voltage vs Illumination



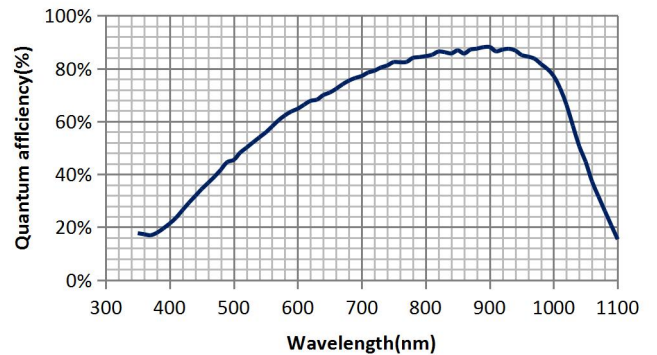
■ Relative Short Circuit Current vs. Illumination



■ Relative Junction Capacitance VS. Voltage



■ Quantum efficiency



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