

PIN Photodiode

OSD1-IP3



Description

The OSD1-IP3 is a high sensitive silicon planar photo-Diode in water-clear 3mm plastic molded package.

Features

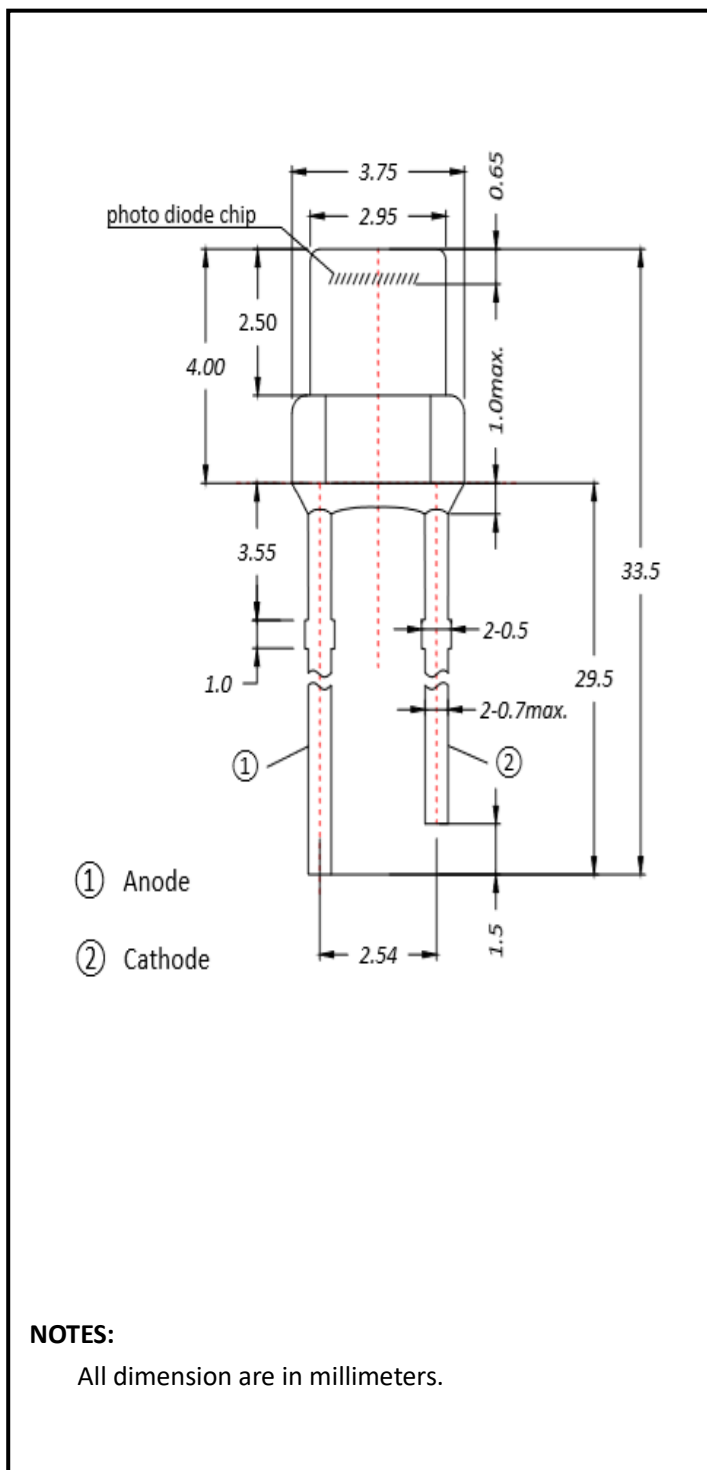
- * High-speed response
- * High photo sensitivity
- * High reliability in demanding environments
- * Operating temperature is from -40 to +80°C
- * Storage temperature is from -40 to +100°C

General Ratings

- * Type Silicon Photodiode
- * Low dark current
- * High linearly

Applications

- * optical switcher
- * Edge sensing
- * Industry machine



Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject change without notice



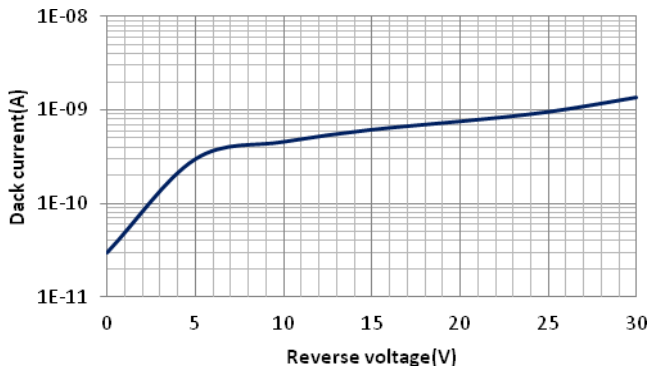
Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Chip size	S			1.095*1.095		mm ²
Active area	Dia			0.895*0.895		mm ²
Damage Threshold cw				300		mw/cm ²
Damage 10ns Pulse				1500		mJ/cm ²
Short circuit Current	I _{sc}	Ev=100lx fc=2856k*		35		μA
Isc Temperature Coefficient	TC I _{sc}	2856k		1.1		%/°C
Open Circuit Voltage	V _{oc}	Ev=100lx fc=2856k*		498		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I _D	VR=5V		0.2		nA
		VR=20V		0.8	50	
Rise time	t _r	V _R =5V;λ=850nm;R _L =50Ω		60		ns
Temp coefficient of I _D	T _{CID}			0.18		times/°C
Reverse breakdown voltage	V _{(BR)R}	I _R =100μA Ev=0lx	60			V
Junction Capacitance	C _J	V _R =0V f=1MHz		13		pF
		V _R =10V f=1MHz		5		
Photo sensitivity	S _R	650nm		0.38		A/W
		940nm		0.64		
Spectral Application Range	λ _{range}		400		1100	nm
Spectral Response-Peak	λ _p			940		nm
Angle of half sensitivity	∅			±60		deg
Shunt resistance	R _{sh}	V _R =10mV		0.33		GΩ
Rsh Temperature Coefficient	TC R _{sh}	Ev=100lx , VR=10mV		0.18		%/°C
Noise Equivalent Power	NEP	V _R =10V λ=940nm		1.50×10 ⁻¹⁴		W/Hz ^{1/2}
Specific Detectivity	D*	V _R =10V λ=940nm		3.02×10 ¹³		cm(Hz/W) ^{1/2}

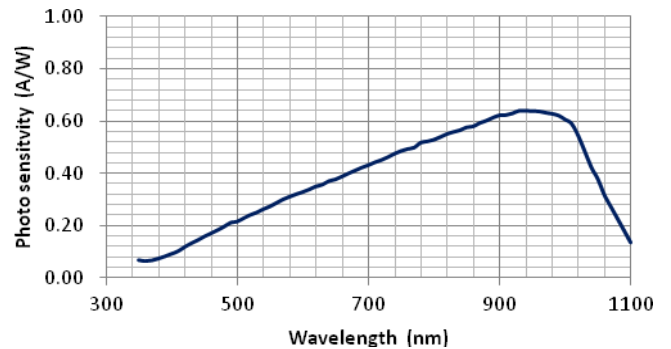
* Ev: Illuminance by CIE standard light source A (tungsten lamp)

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■ Dark current vs. reverse voltage

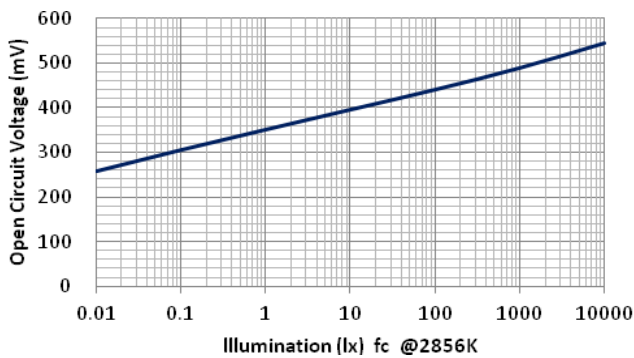


■ Spectral response

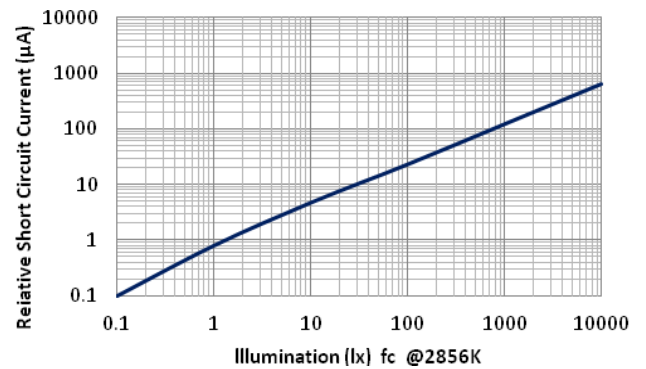


■ Open circuit Voltage vs Illumination

Illumination

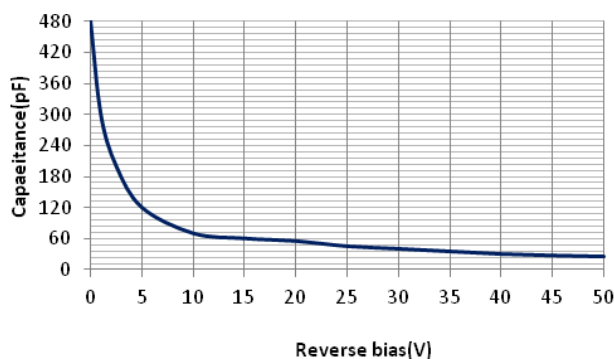


■ Relative Short Circuit

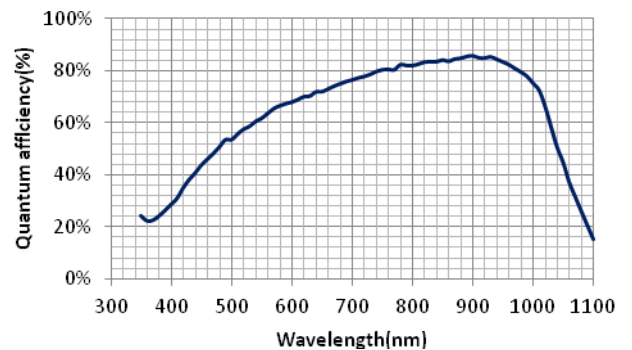


■ Relative Junction Capacitance

VS. Voltage



■ Quantum efficiency



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