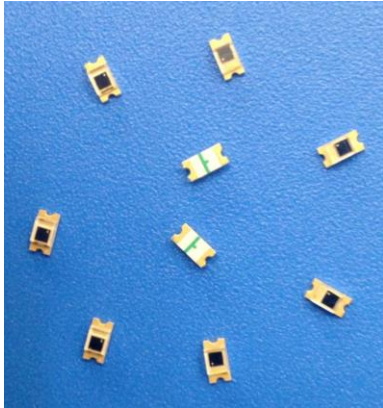


HIGH SPEED PIN PHOTODIODE



Description

OSD1-IM is Single PIN photodiode in standard SMD package. The high optical responsivity is due to the antireflective Coating deposited on the photodiode active area. The low dark current is good for high temperature app. The high speed epitaxy PIN photodiode chip on PCB carrier, The product is available in standard reel.

Features

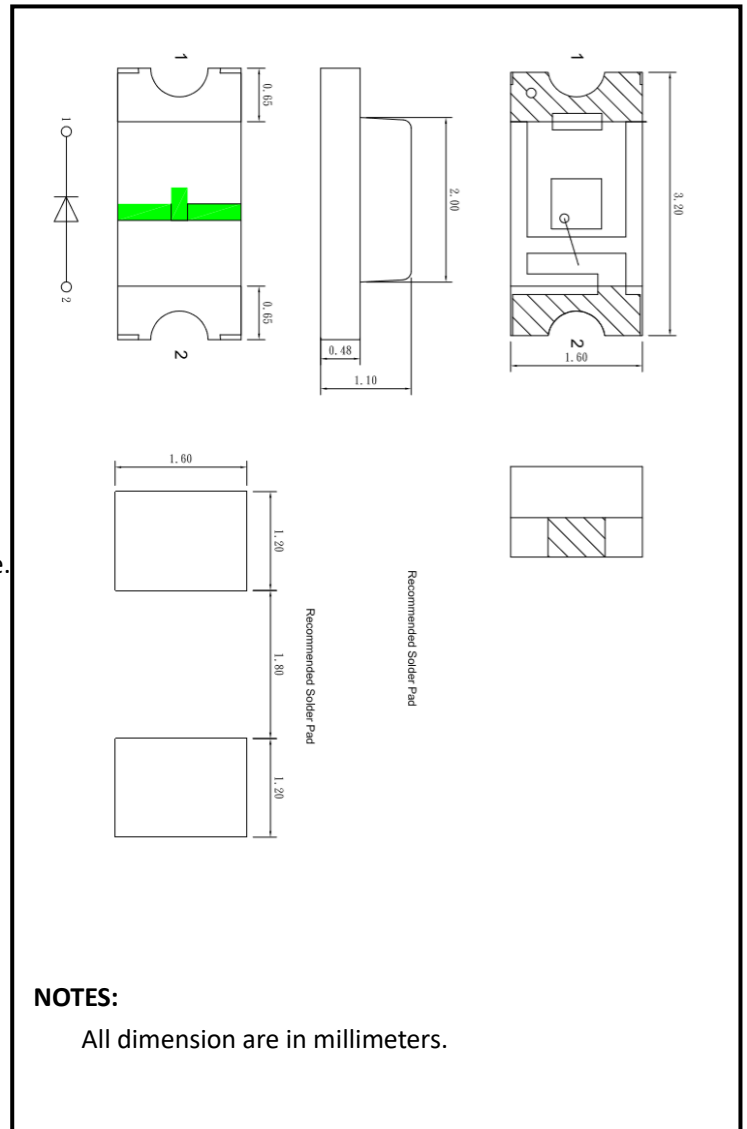
- * Fast response time
- * Low dark current
- * Operating temperature is from -20 to +80°C
- * Storage temperature is from -40 to +100°C
- * Reflow solderable

General Ratings

- * High Uniformity
- * High linearity

Applications

- * Photo interrupters
- * Pulse light detection
- * High speed optical communication
- * Optical Encoders



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



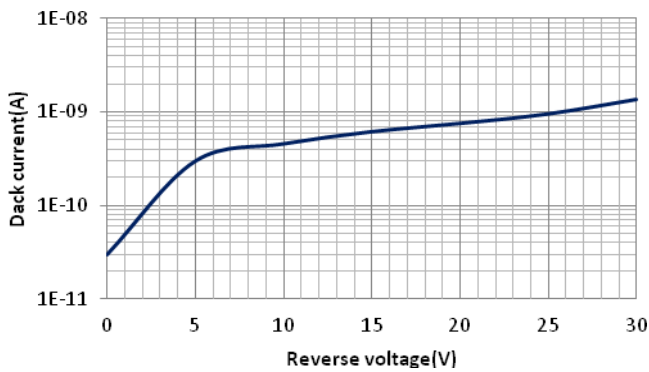
Absolute Maximum Ratings (Ta=25°C)

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 _{CI_D}			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}

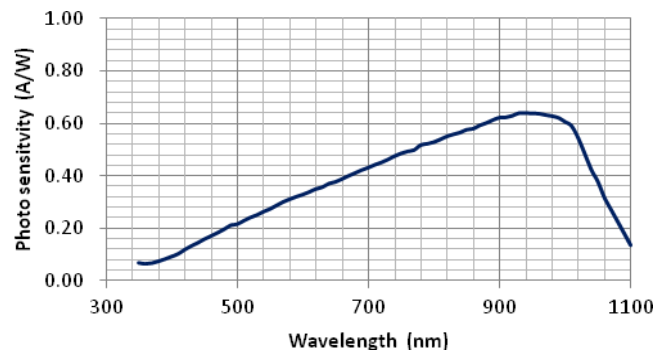
* Ev: Illuminance by CIE standard light source A (tungsten lamp)

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■ Dark current vs. reverse voltage

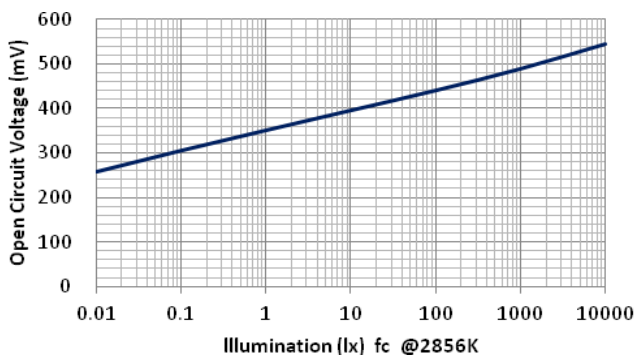


■ Spectral response

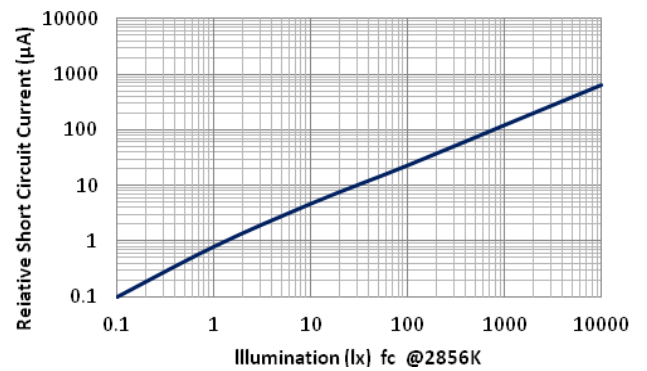


■ Open circuit Voltage vs Illumination

Illumination

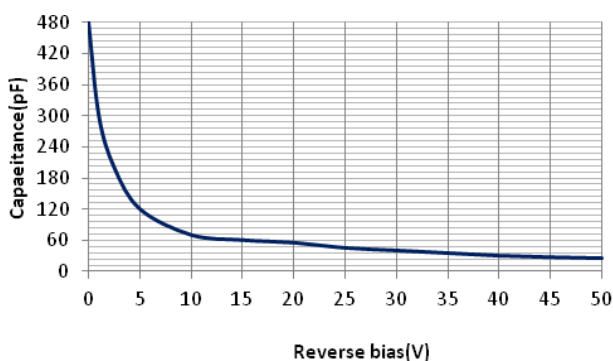


■ Relative Short Circuit

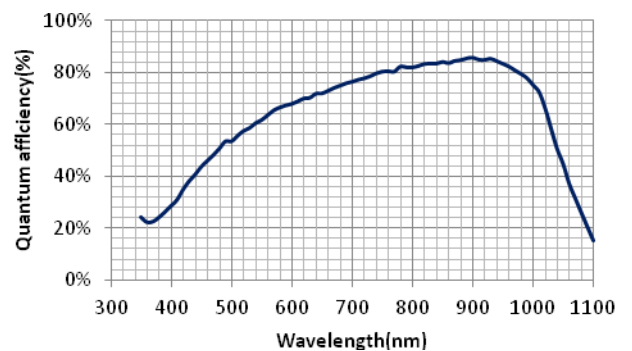


■ Relative Junction Capacitance

VS. Voltage



■ Quantum efficiency



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