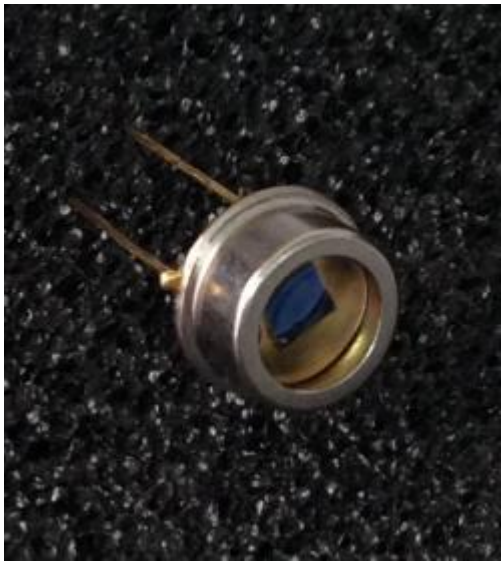
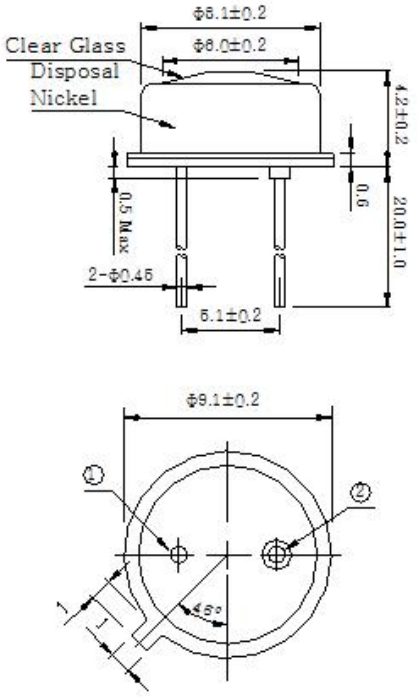
Silicon PIN Photodiode

OSD9-IT





NOTES:

All dimension are in millimeters.

Description

The OSD9-IT is high-output, high sensitivity silicon Photodiode mounted in TO-5 metal can package, permits wide response.

Features

* High speed response
* Wide angular response
* High reliability in demanding environments
* Operating temperature is from -40 to +80℃
*Storage temperature is from -40 to +100℃
* soldering temperature is 260℃ @Max.5 seconds at the position of 2mm from the PIN legs.

General Ratings

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

Applications

* Analytical instruments
* Optical measurement equipment
* Precision photometry
* Medical equipment
* IR/ Laser light Monitoring
* Optical switch

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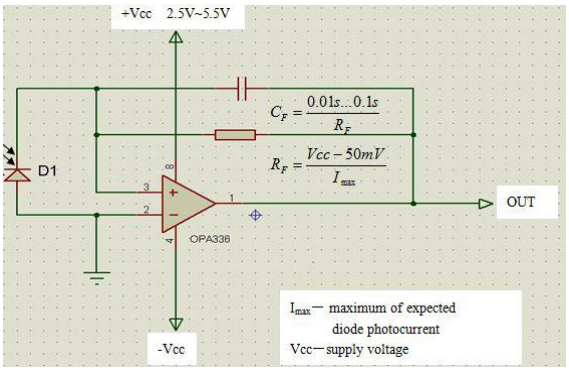
Absolute Maximum Ratings (Ta=25℃)

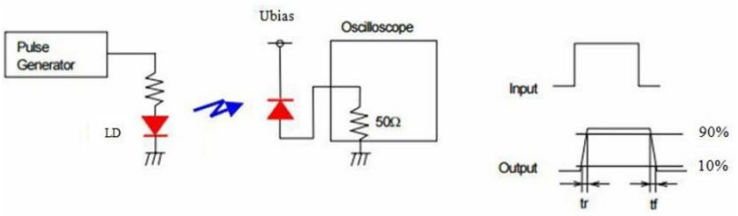
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Chip size	Size			3.05*3.05		mm^2
Active area	A			2.794*2.794		mm^2
Short circuit Current	I_{SC}	Vr=5V, Ev=5mw/cm^2, fc=2856k*		85		μA
Isc Temperature Coefficient	TC Isc	2856k		1.1		%/℃
Open Circuit Voltage	Voc	Vr=5V, Ev=5mw/cm^2 fc=2856k*		350		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/℃
Dark current	I_D	VR=100mV		15		pA
		VR=10V		25		
Rise time	t_{R**}	V_R=0V;λ=635nm;R_L=50Ω, f=1KHz		100		ns
		V_R=10V;λ=635nm;R_L=50Ω, f=1KHz		80		ns
Temp coefficient of I_D	T_{CID}			0.18		times/℃
Reverse breakdown voltage	$V_{(BR)R}$	I_R=100μA Ev=0lx	35			V
Junction Capacitance	C_J	V_R=0V f=1MHz		70		pF
		V_R=10V f=1MHz		25		
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
Shunt resistance	R_{sh}	V_R=10mV		0.5		GΩ
Rsh Temperature Coefficient	TC R_{sh}	Ev=100lx , VR=10mV		0.18		%/℃
Angular Resp 50% Resp Pt	$\theta_{1/2}$			±55		Degrees
Noise Equivalent Power	NEP	V_R =10V λ=940nm		2.58×10^{-14}		$W/Hz^{1/2}$
Specific Detectivity	D*	V_R =10V λ=940nm		1.67×10^{13}		$cm(Hz/W)^{1/2}$

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

■Typical application circuit

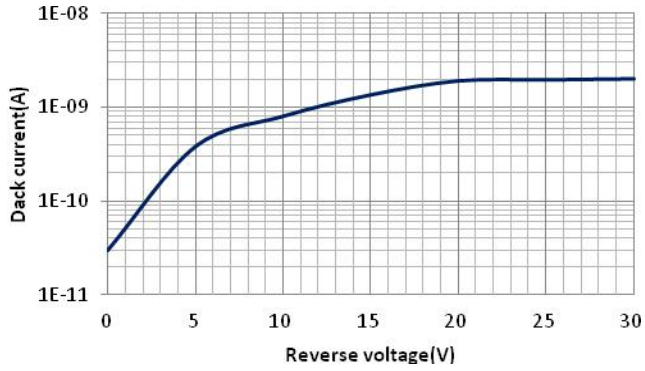


** Response time measurment Circuit:

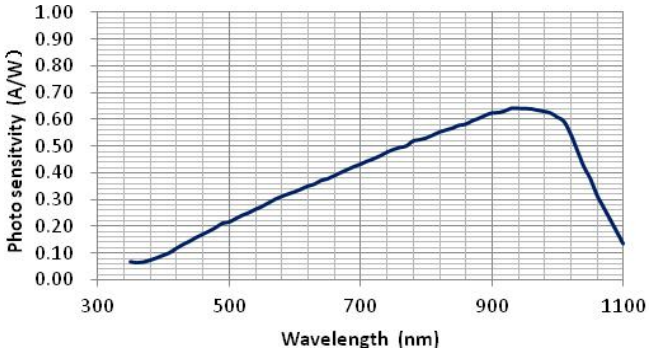


Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject change without notice

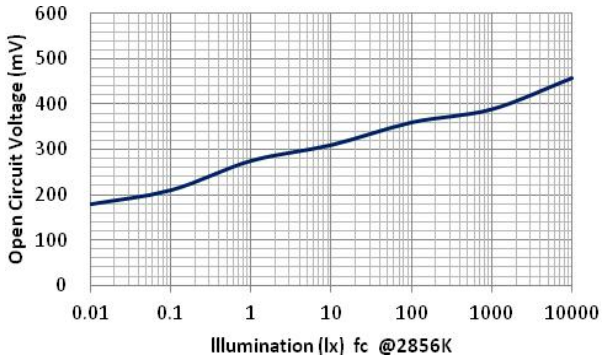
■Dark current vs. reverse voltage



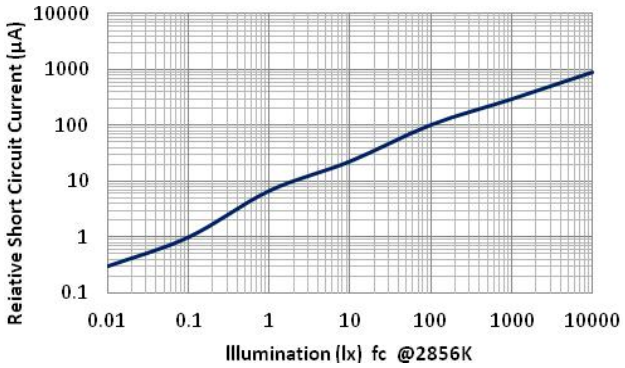
■ Spectral response



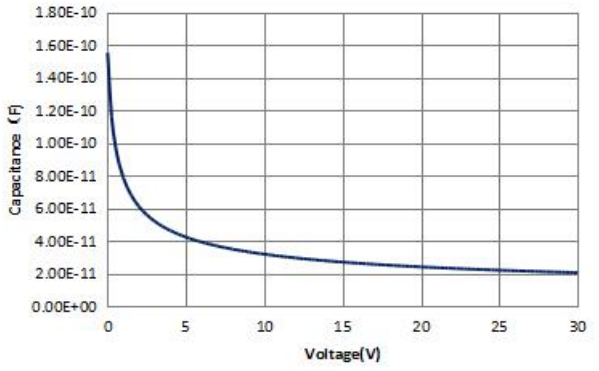
■Open circuit Voltage vs Illumination



■Relative Short Circuit Current vs. Illumination



■Relative Junction Capacitance VS. Voltage



■Quantum efficiency