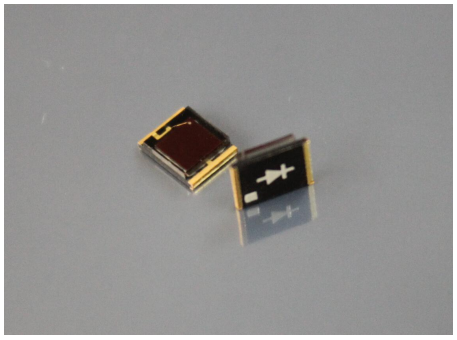
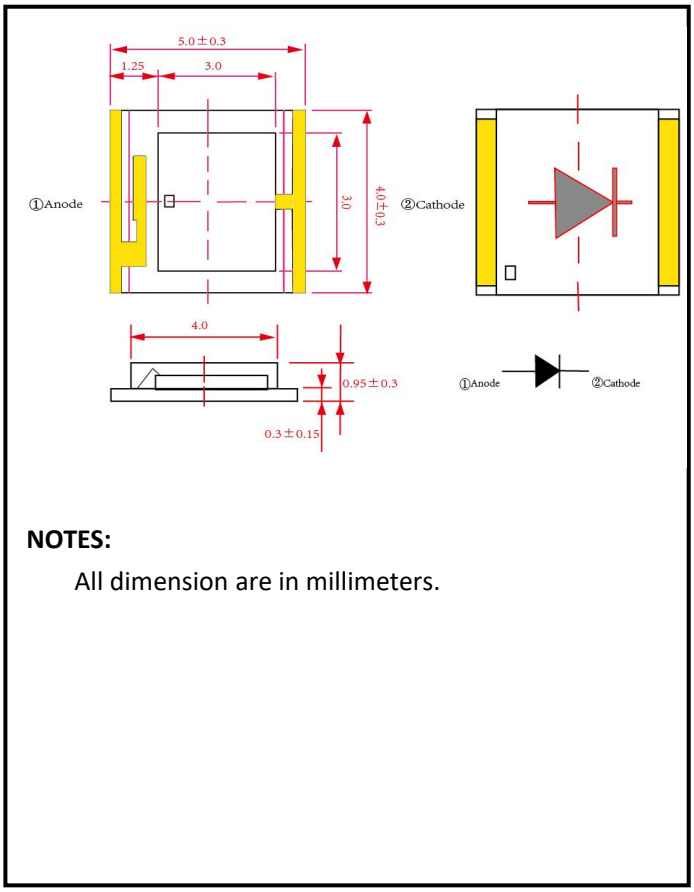
OSD9-HM

Visible light enhanced photodiode





NOTES:

All dimension are in millimeters.

Description

The OSD9-HM is device as visible, IR wavelength photodiode in COB package, It can get fast response output of high Sensitivity for visible light.This device is ideal for applications Such as smartwatch, smartphone, smart bracelet etc.

Features

* high sensitivity for visible light.
* Low dark current
* Operating temperature is from -40 to +80℃
* Storage temperature is from -40 to +100℃

General Ratings

* peak wavelength: 940nm
* Low capacitance

Applications

*Optical switch
* Medical
* AR, VR, Wearable

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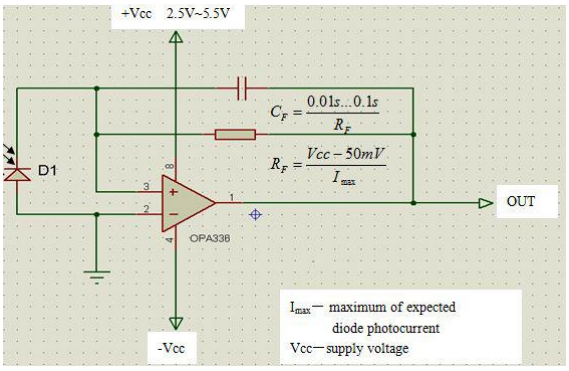
Absolute Maximum Ratings (Ta=25℃)

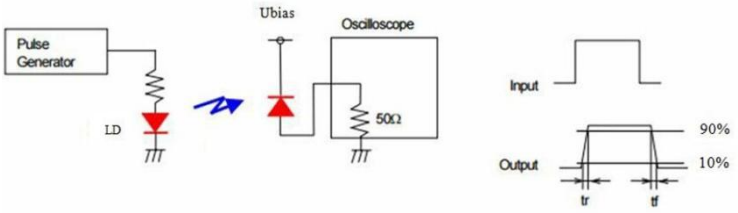
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Chip size	Size			3.0*3.0		mm^2
Active area	A			2.84*2.84		mm^2
Short circuit Current	I_{SC}	Vr=5V, Ev=5mw/cm^2, fc=2856k*		95		μA
Isc Temperature Coefficient	TC Isc	2856k		1.1		%/℃
Open Circuit Voltage	Voc	Vr=5V, Ev=5mw/cm^2 fc=2856k*		380		mV
Voc Temperature 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	40			V
Junction Capacitance	C_J	V_R=0V f=1MHz		70		pF
		V_R=10V f=1MHz		25		
Photo sensitivity	S_R	650nm		0.42		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	$\theta_{1/2}$			±30		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

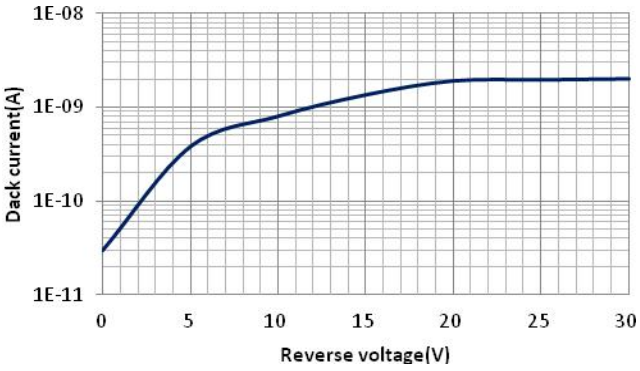


** Response time measurment Circuit:

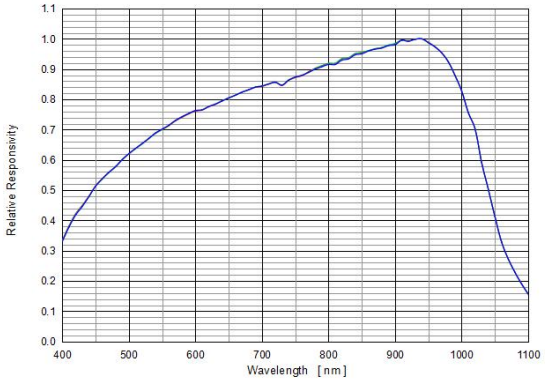


Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject change without notice

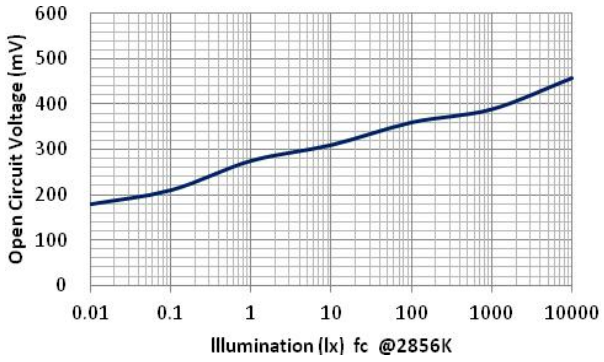
■Dark current vs. reverse voltage



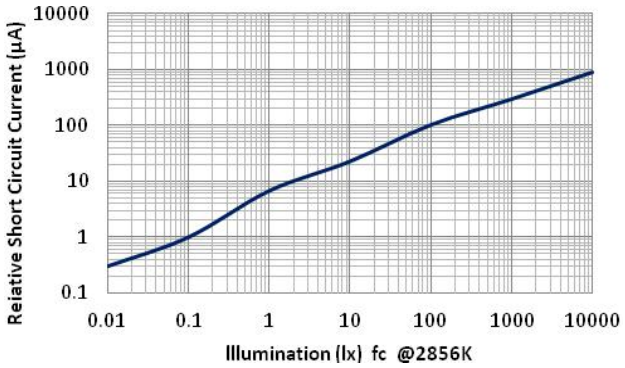
■ Spectral response



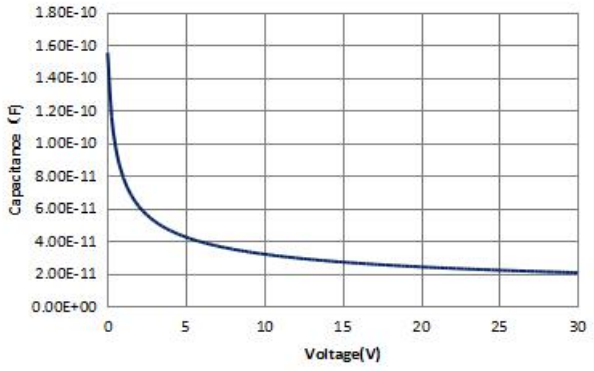
■Open circuit Voltage vs Illumination



■Relative Short Circuit Current vs. Illumination



■Relative Junction Capacitance VS. Voltage



■Quantum efficiency