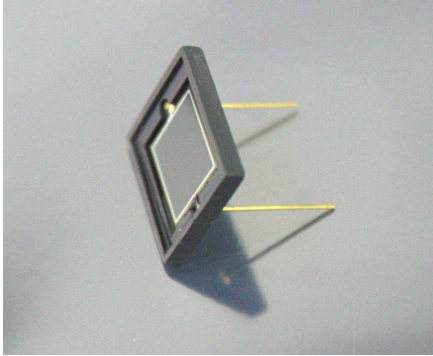


## UV Enhanced Photo diode

### OSD100-UC



## Description

The OSD100-UC is high-output, high sensitivity silicon UV enhanced photo diode mounted in ceramic stem package with or without flat UV glass window permits wide angular response.

## Features

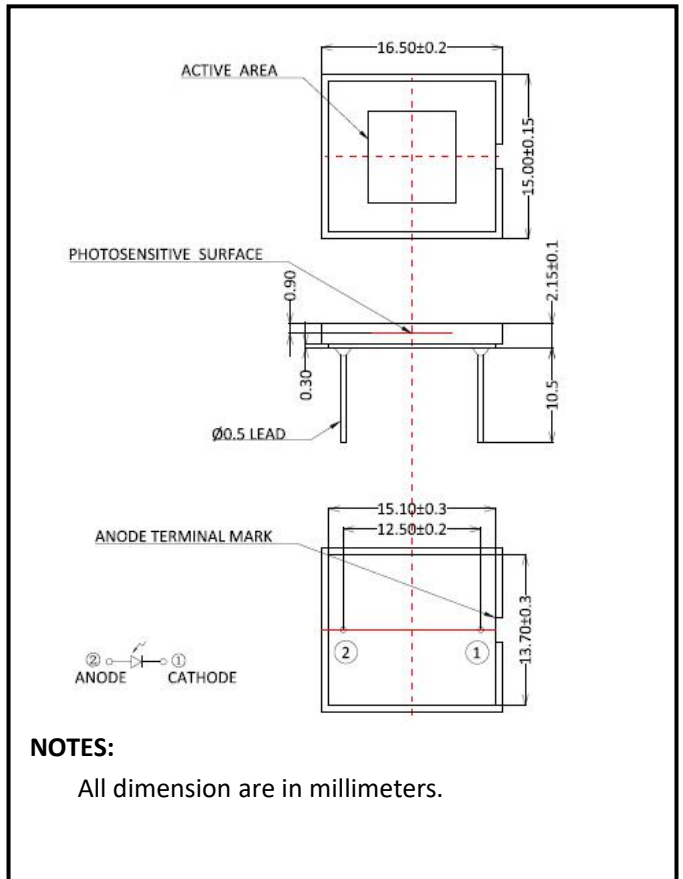
- \* High speed response
- \* Wide angular response
- \* High reliability in demanding environments
- \* Operating temperature is from -40 to +80°C
- \* Storage temperature is from -40 to +100°C
- \* soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

## General Ratings

- \* chip active area: 9.4\*9.4mm
- \* High linearity
- \* Chip Size: 10.0mm\*10.0mm
- \* Low dark current

## Applications

- \* UV-exposure Meters
- \* Optical measurement equipment
- \* Analytical /medical Instrument
- \* Pollution monitoring



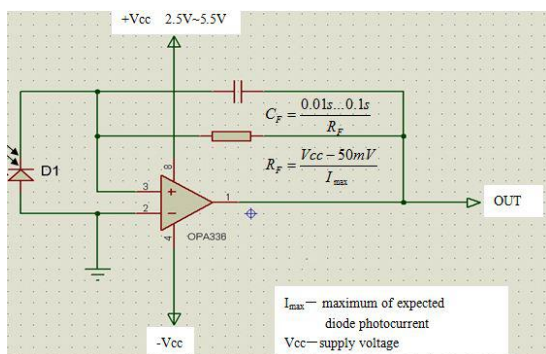
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## Absolute Maximum Ratings (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Short circuit Current	I <sub>SC</sub>	Ev=100lx fc=2856k*		180		μA
Isc Temperature Coefficient	TC Isc	2856k		1.1		%/°C
Open Circuit Voltage	Voc	Ev=100lx fc=2856k*		358		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I <sub>D</sub>	VR=10mV		2.7		nA
		VR=10V		5.94		
Rise time	tr	V <sub>R</sub> =0V; λ =375nm;R <sub>L</sub> =50Ω		120		ns
		V <sub>R</sub> =10V; λ =375nm;R <sub>L</sub> =50Ω		105		ns
Temp coefficient of I <sub>D</sub>	T <sub>CID</sub>			0.18		times/°C
Reverse breakdown voltage	V <sub>(BR)R</sub>	I <sub>R</sub> =100μA Ev=0lx	33			V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V f=1MHz		465		pF
		V <sub>R</sub> =10V f=1MHz		70		
Photo sensitivity	S <sub>R</sub>	190nm		1.4		A/W
		940nm		0.51		
Spectral Application Range	λ <sub>range</sub>		190		1100	nm
Spectral Response-Peak	λ <sub>p</sub>			700		nm
Shunt resistance	R <sub>sh</sub>	VR=10mV		3.7		GΩ
Rsh Temperature Coefficient	TC Rsh	Ev=100lx , VR=10mV		0.18		%/°C
Angular Resp 50% Resp Pt	θ <sub>1/2</sub>			±60		Degrees
Noise Equivalent Power	NEP	V <sub>R</sub> =10V λ =940nm		6.8×10 <sup>-14</sup>		W/Hz <sup>1/2</sup>
Specific Detectivity	D*	V <sub>R</sub> =10V λ =940nm		1.47×10 <sup>13</sup>		cm(Hz/W) <sup>1/2</sup>

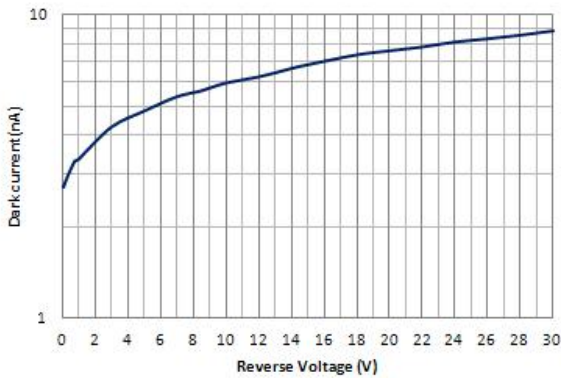
\* Ev: Illuminance by CIE standard light source A (tungsten lamp)

## Typical application circuit

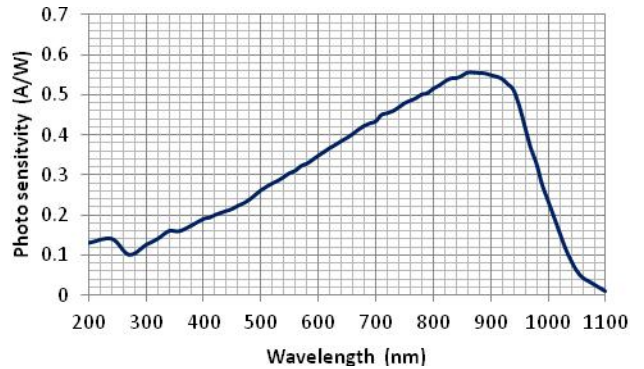


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## ■ Dark current vs. reverse voltage

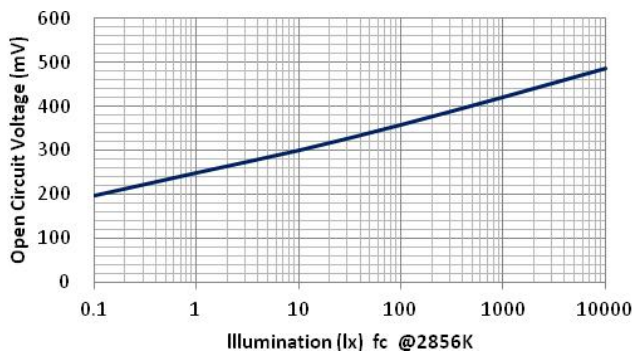


## ■ Spectral response



## ■ Open circuit Voltage

vs Illumination



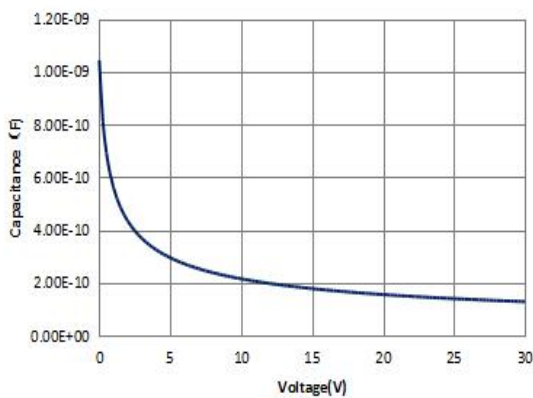
## ■ Relative Short Circuit

Current vs. Illumination

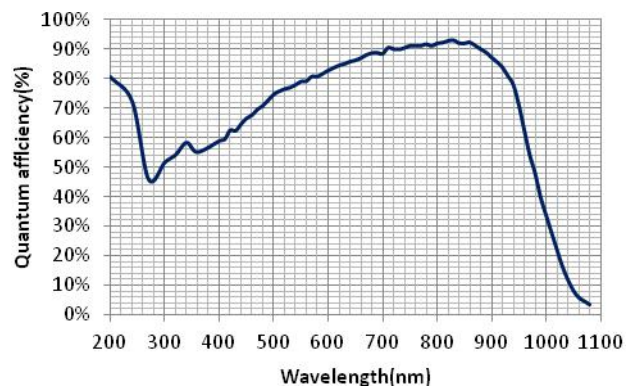


## ■ Relative Junction Capacitance

VS. Voltage



## ■ Quantum efficiency



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