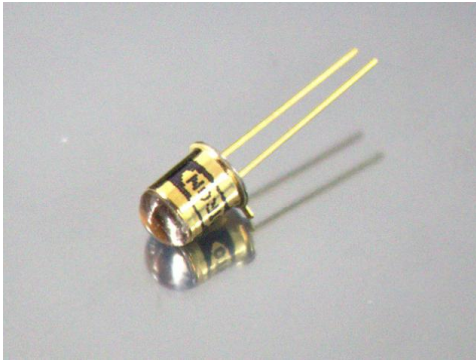


## PIN Photodiode

### OSD1.21-IT



## Description

The OSD1.21-IT is a high sensitive silicon planar photo-Diode in a standard TO-18 hermetically sealed metal Case with a glass lens

## Features

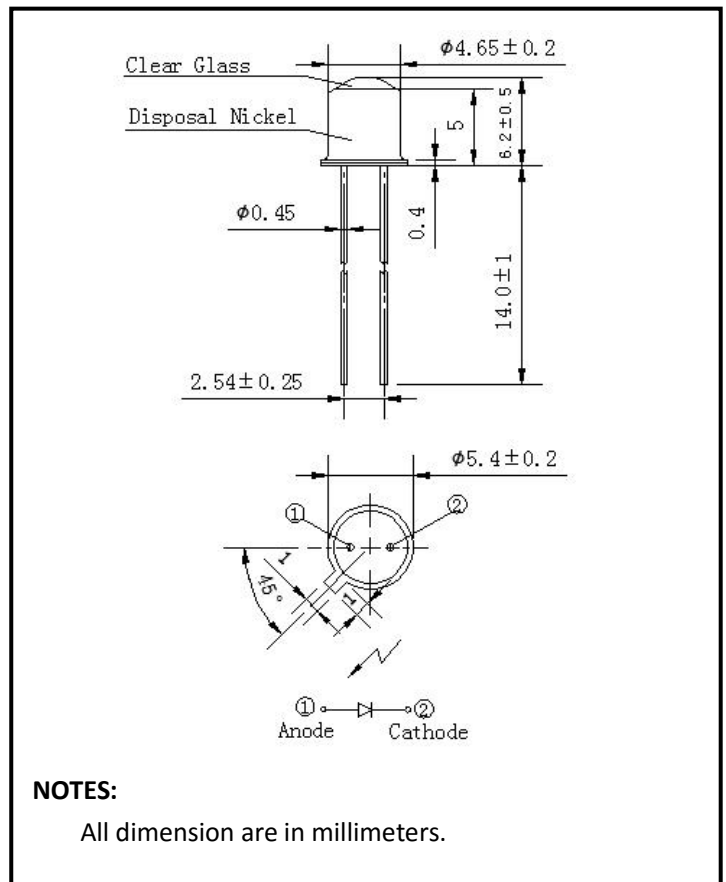
- \* High-speed response
- \* High photo sensitivity
- \* High reliability in demanding environments
- \* Operating temperature is from -40 to +100°C
- \* Storage temperature is from -40 to +100°C
- \* soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

## General Ratings

- \* Type Silicon Photodiode
- \* Similar to BPW24R
- \* Chip active area: 1.1\*1.1mm
- \* Low dark current

## Applications

- \* optical switcher
- \* Automatic sensor
- \* pulse laser detector
- \* Industry machine



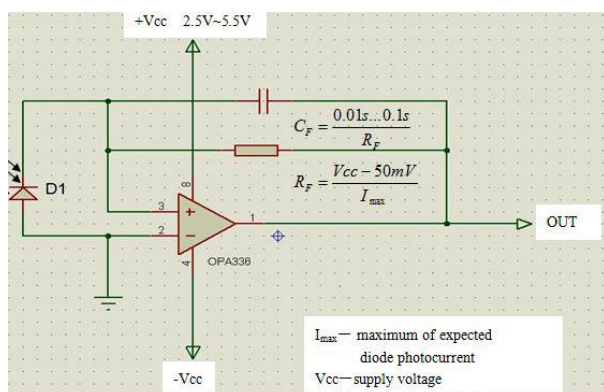
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## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Short circuit Current	I <sub>SC</sub>	Ev=100lx fc=2856k*		7		μA
Isc Temperature Coefficient	TC I <sub>SC</sub>	2856k		1.2		%/°C
Open Circuit Voltage	V <sub>OC</sub>	Ev=100lx fc=2856k*		332		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I <sub>D</sub>	V <sub>R</sub> =10mV		20		pA
		V <sub>R</sub> =10V		180		
Tempcoeffi-cient of I <sub>D</sub>	T <sub>CD</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		9.46		pF
		V <sub>R</sub> =10V f=1MHz		4.40		
Photo sensitivity	S <sub>R</sub>	650nm		0.38		A/W
		940nm		0.64		
Spectral Application Range	λ <sub>range</sub>			940		nm
Spectral Response-Peak	λ <sub>p</sub>		400		1100	nm
Shunt resistance	R <sub>sh</sub>	V <sub>R</sub> =10mV		0.5		GΩ
Rsh Temperature Coefficient	TC R <sub>sh</sub>			0.18		%/°C
Angular Resp 50% Resp Pt	θ <sub>1/2</sub>			±12		Degrees
Noise Equivalent over	NEP	V <sub>R</sub> =10V λ =940nm		1.19×10 <sup>-14</sup>		W/Hz <sup>1/2</sup>
Specific Detectivity	D*	V <sub>R</sub> =10V λ =940nm		8.4×10 <sup>13</sup>		cm(Hz/W) <sup>1/2</sup>

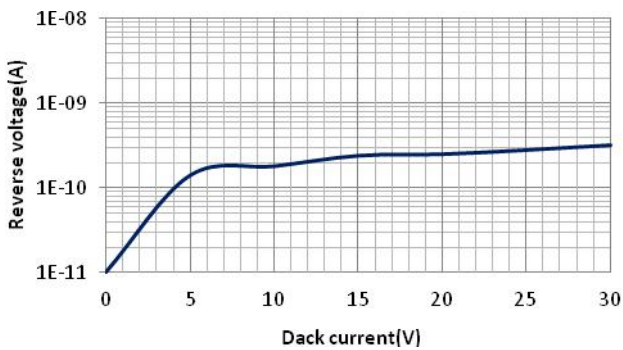
\* Ev: Illuminance by CIE standard light source A (tungsten lamp)

## Typical application circuit

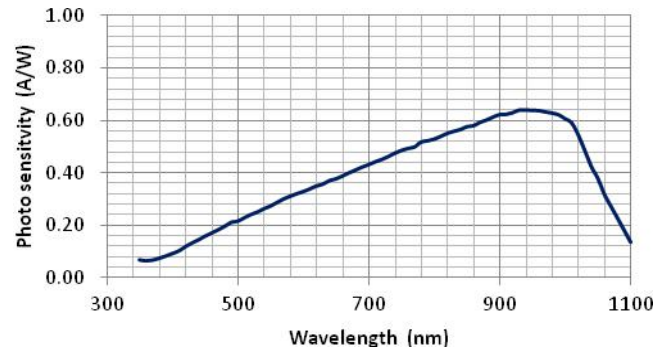


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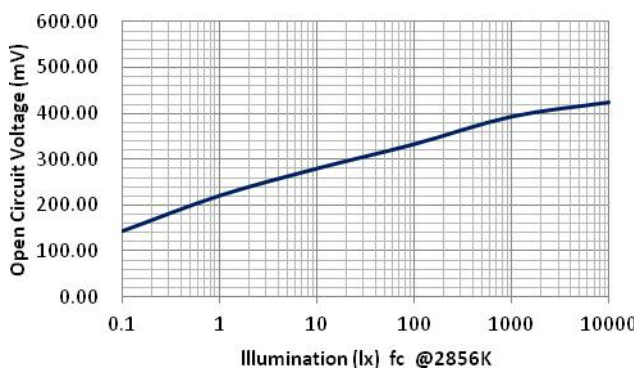
## ■ Dark current vs. reverse voltage



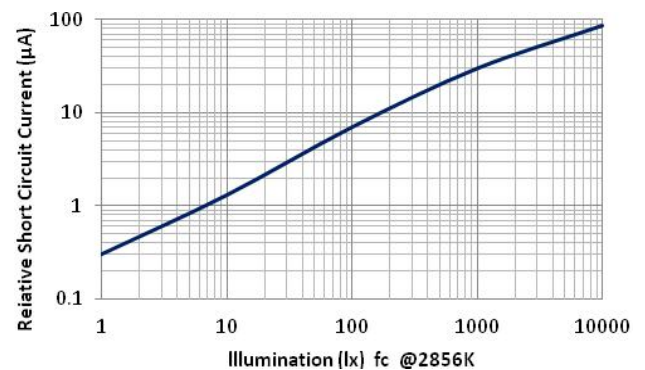
## ■ Spectral response



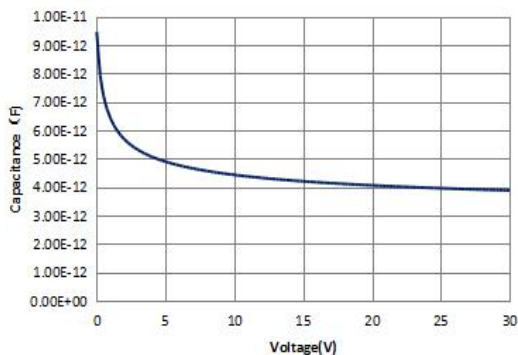
## ■ Open circuit Voltage vs Illumination



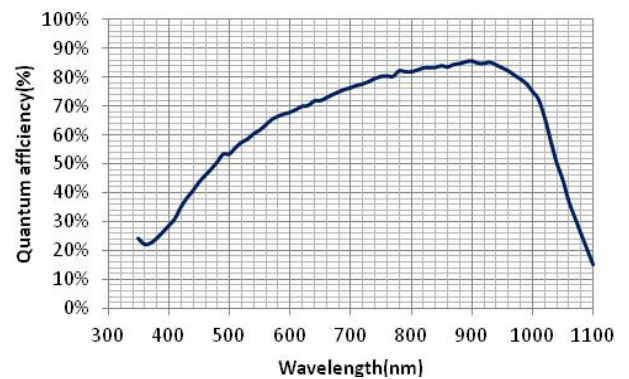
## ■ Relative Short Circuit Current vs. Illumination



## ■ Relative Junction Capacitance VS. Voltage



## ■ Quantum efficiency



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