

## Silicon PIN Photodiode

### OSD8-IT



## Description

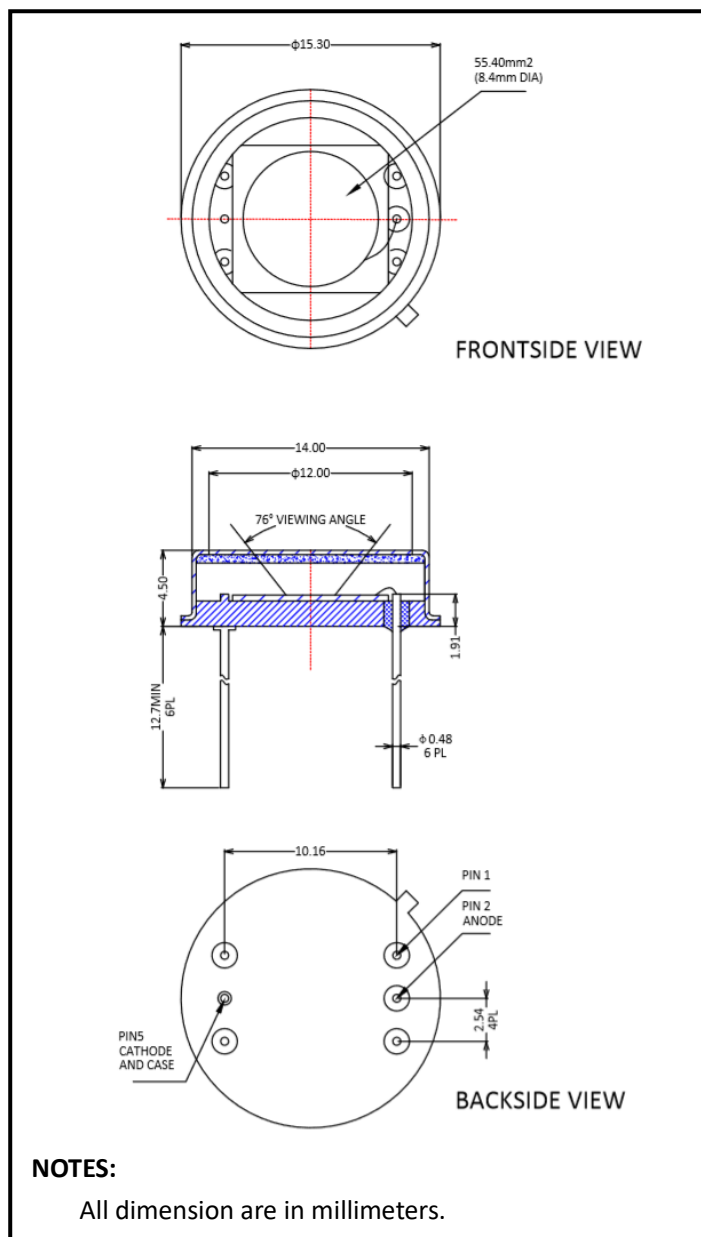
The OSD8-IT is high-output, high sensitivity silicon Photodiode mounted in TO-8 metal can package with flat K9 glass window , permits wide angular response.

## 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

## Applications

- |                              |                                 |
|------------------------------|---------------------------------|
| * Analytical instruments     | * Optical measurement equipment |
| * Precision photometry       | * Medical equipment             |
| * Fluorescence detector      | * Spectrophotometry/CT scan     |
| * IR/ Laser light Monitoring |                                 |



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

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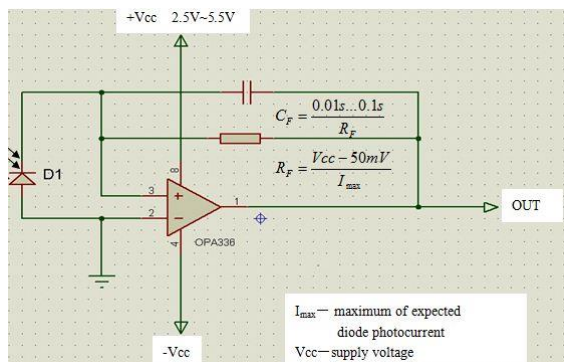
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## Absolute Maximum Ratings (Ta=25°C)

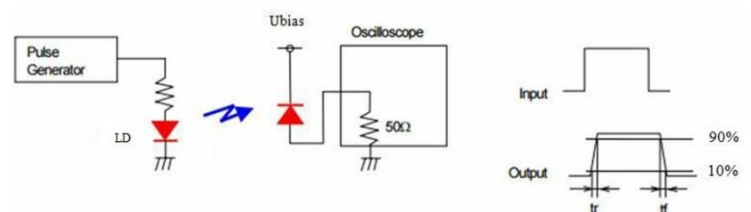
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Chip size	S		8.73*8.73			mm <sup>2</sup>
Active area	A		Ø8.4			mm <sup>2</sup>
Short circuit Current	I <sub>sc</sub>	Ev=100lx fc=2856k*		152		µA
Isc Temperature Coefficient	TC I <sub>sc</sub>	2856k		1.1		%/°C
Open Circuit Voltage	V <sub>oc</sub>	Ev=100lx fc=2856k*		249		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I <sub>d</sub>	VR=0V		0.10		nA
		VR=5V		10		
Rise time**	t <sub>r</sub>	V <sub>R</sub> =10V;λ=850nm;R <sub>L</sub> =50Ω, f=1KHz		30		ns
		V <sub>R</sub> =80V;λ=850nm;R <sub>L</sub> =50Ω, f=1KHz		8		
Temp coefficient of I <sub>d</sub>	T <sub>CI<sub>d</sub></sub>			0.18		times/°C
Reverse breakdown voltage	V <sub>(BR)R</sub>	I <sub>R</sub> =100µA Ev=0lx	30			V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V f=1MHz		480		pF
		V <sub>R</sub> =10V f=1MHz		90		
Photo sensitivity	S <sub>R</sub>	650nm		0.38		A/W
		940nm		0.64		
Spectral Application Range	λ <sub>range</sub>		400		1100	nm
Spectral Response-Peak	λ <sub>p</sub>			940		nm
Shunt resistance	R <sub>sh</sub>	V <sub>R</sub> =10mV		0.1		GΩ
Rsh Temperature Coefficient	TC R <sub>sh</sub>	Ev=100lx , VR=10mV		0.18		%/°C
Angular Resp 50% Resp Pt	θ <sub>1/2</sub>			±55		Degrees
Noise Equivalent Power	NEP	V <sub>R</sub> =10V ,λ=940nm		2.39×10 <sup>-14</sup>		W/Hz <sup>1/2</sup>
Specific Detectivity	D*	V <sub>R</sub> =10V ,λ=940nm		2.51×10 <sup>13</sup>		cm(Hz/W) <sup>1/2</sup>

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

### Typical application circuit



### \*\* Response time measurement Circuit:



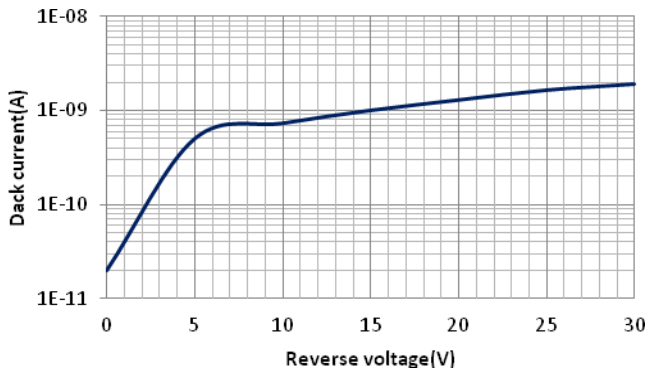
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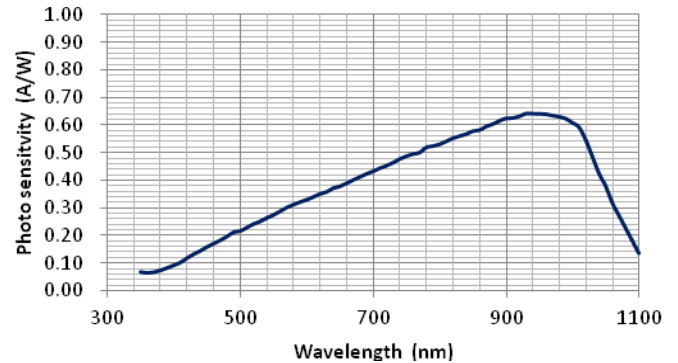
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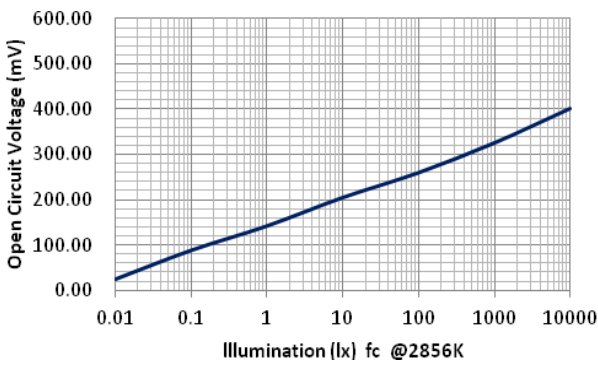
## ■ Dark current vs. reverse voltage



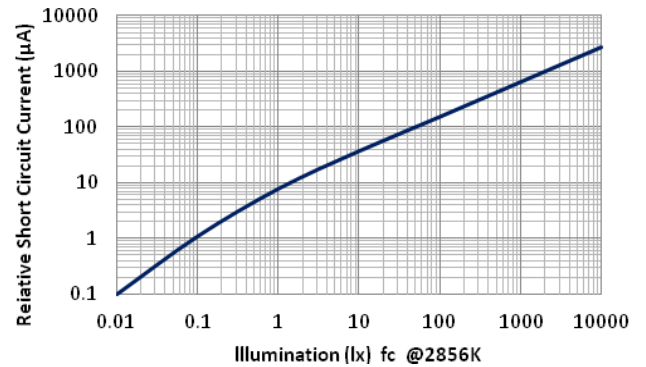
## ■ Spectral response



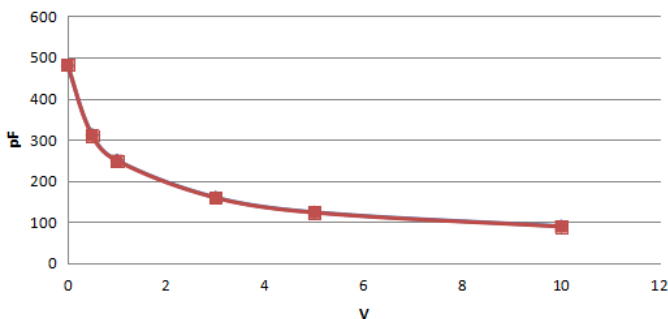
## ■ Open circuit Voltage vs Illumination



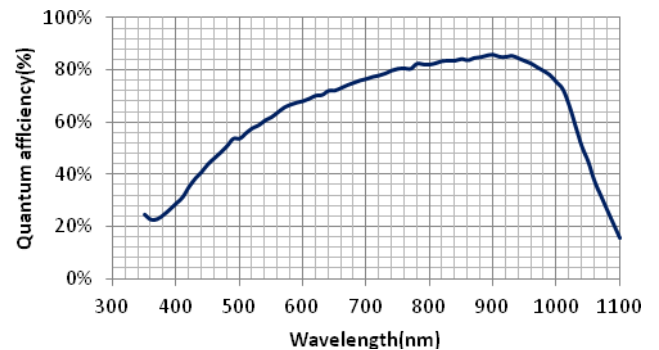
## ■ Relative Short Circuit Current vs. Illumination



## ■ Relative Junction Capacitance VS. Voltage



## ■ Quantum efficiency



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