

## Silicon PIN Photodiode

### OSD4-IPT



### Description

The OSD4-IPT is high-output, high sensitivity silicon Photodiode mounted in TO-18 metal can package with epoxy glob top, non hermetic , permits wide response.

### Features

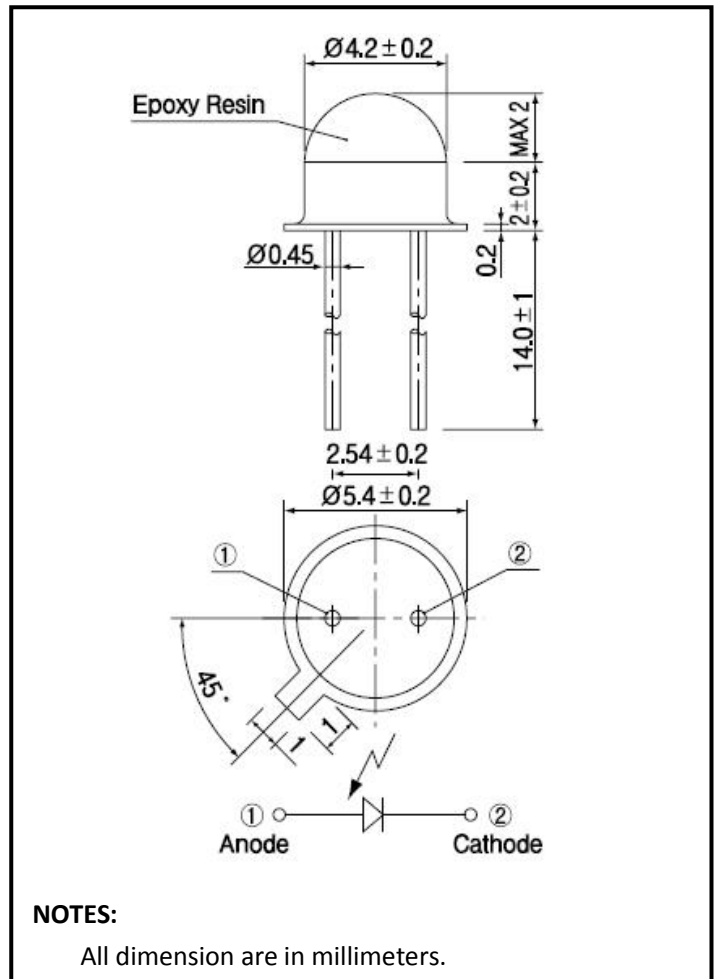
- \* High speed response
- \* Wide angular response
- \* High reliability in demanding environments
- \* Operating temperature is from -40 to +80°C
- \* Storage temperature is from -40 to +100°C
- \* soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

### General Ratings

- \* Type Silicon Photodiode
- \* High linearity
- \* Chip active area: 2mm\*2mm
- \* Low dark current

### Applications

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



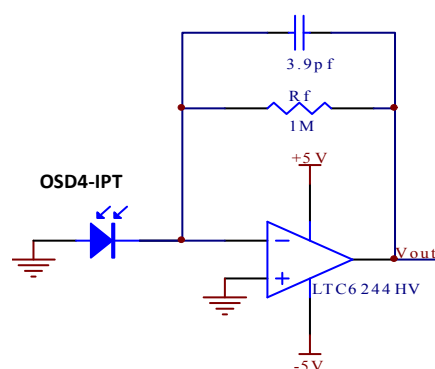
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## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Short circuit Current	I <sub>sc</sub>	Ev=100lx fc=2856k*		66		μA
Isc Temperature Coefficient	TC I <sub>sc</sub>	2856k		1.1		%/°C
Open Circuit Voltage	V <sub>oc</sub>	Ev=100lx fc=2856k*		358		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I <sub>D</sub>	V <sub>R</sub> =10mV		60		pA
		V <sub>R</sub> =10V		160		
Rise time	t <sub>R</sub>	V <sub>R</sub> =5V;λ=850nm;R <sub>L</sub> =50Ω		30		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	20			V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V f=1MHz		14		pF
		V <sub>R</sub> =10V f=1MHz		4		
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		0.2		GΩ
Rsh Temperature Coefficient	TC R <sub>sh</sub>	Ev=100lx , V <sub>R</sub> =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		1.11×10 <sup>-14</sup>		W/Hz <sup>1/2</sup>
Specific Detectivity	D*	V <sub>R</sub> =10V λ=940nm		1.80×10 <sup>13</sup>		cm(Hz/W) <sup>1/2</sup>

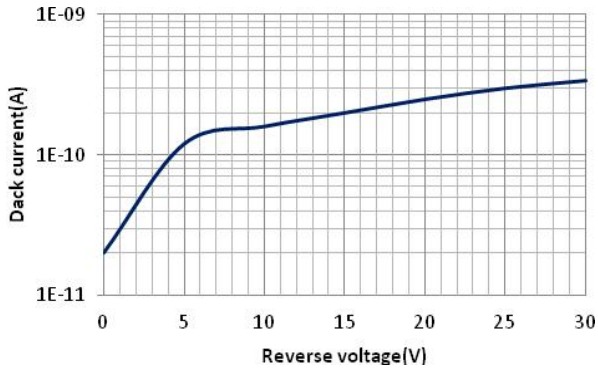
\* Ev: Illuminance by CIE standard light source A (tungsten lamp)

## ■ Typical application circuit

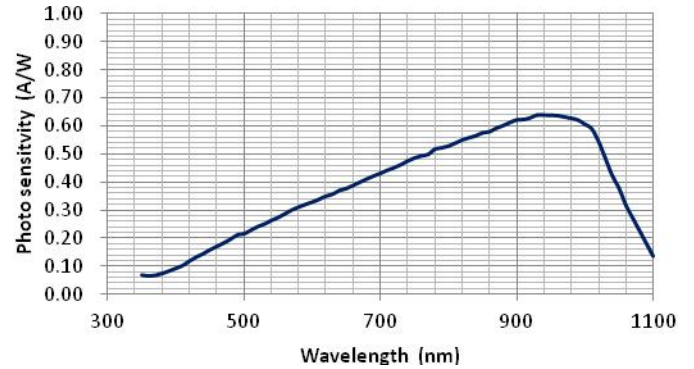


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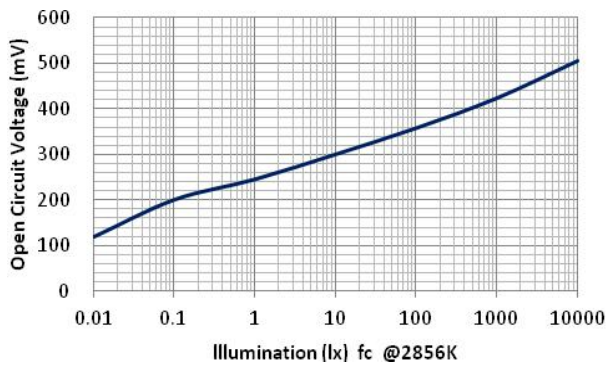
## ■ Dark current vs. reverse voltage



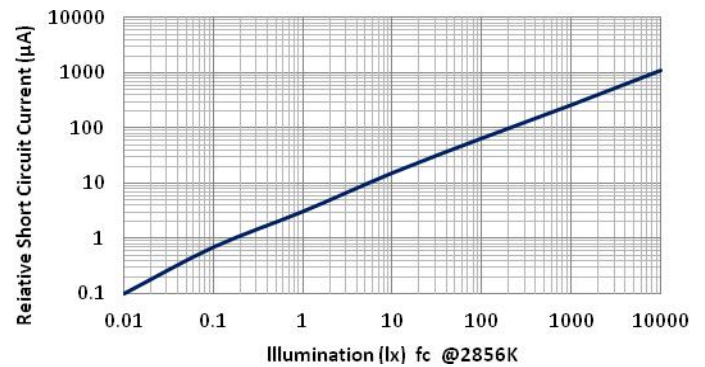
## ■ Spectral response



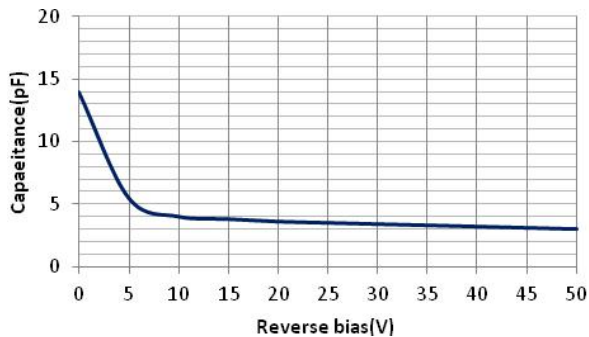
## ■ Open circuit Voltage vs Illumination



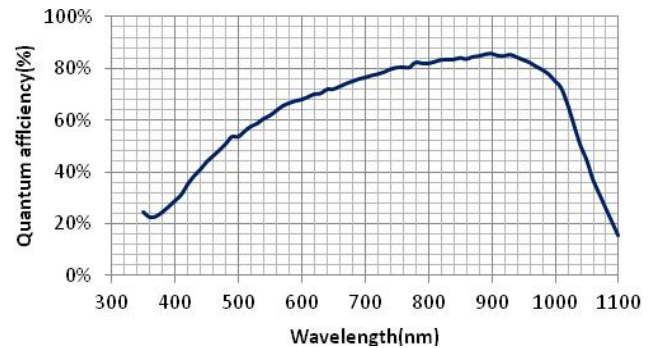
## ■ Relative Short Circuit Current vs. Illumination



## ■ Relative Junction Capacitance VS. Voltage



## ■ Quantum efficiency



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