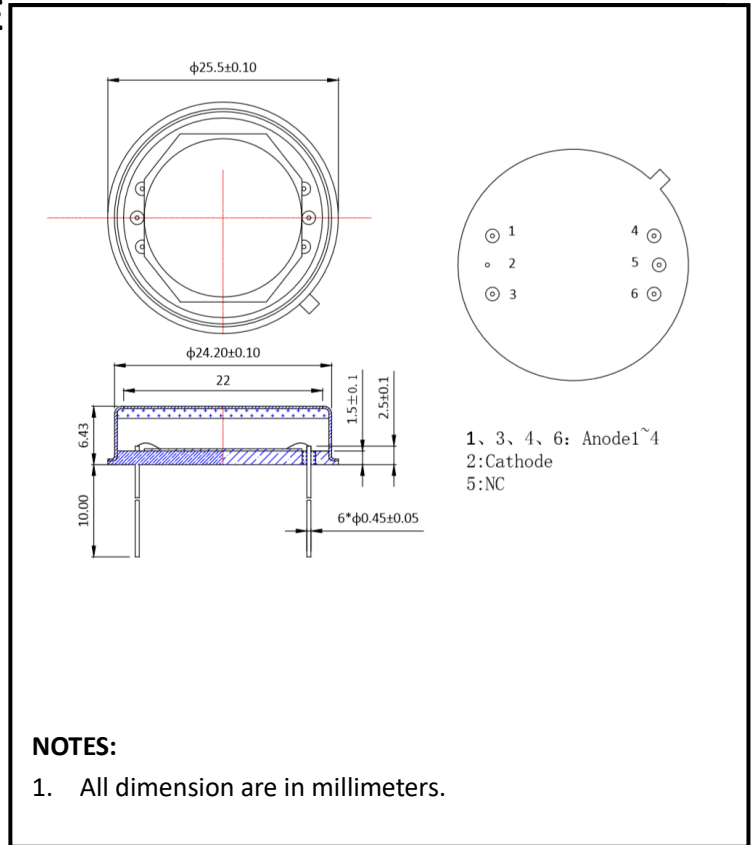
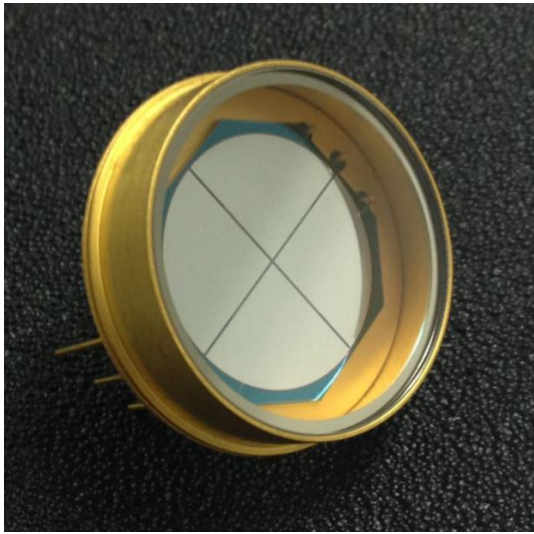


## SILICON QUADRANT PHOTODIODE



### Description

Φ16 mm active area , low Dark Current Quadrant Photodiode with P on N construction and 200um gaps. This detector is optimized for high response at 1060nm, And low capacitance, high speed and low noise.

### Features

- \* Φ16 mm active area
- \* Small gap (200um)
- \* Low dark curren, high speed.
- \* Operating temperature is from -40 to +80℃
- \* Storage temperature is from -40 to +100℃
- \* soldering temperature is 260℃ @Max.5 seconds at the position of 2mm from the PIN legs.

### General Ratings

- \* Type Silicon quadrant photodiode

### Applications

- \* Laser beam position sensor
- \* Optical tweezers
- \* Solar tracking system
- \* Autocollimators
- \* Ellipsometers
- \* Laser beam axis alignment

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# OSQ16-IT



## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Dark current	I <sub>D</sub>	V <sub>R</sub> =10mV		36		nA
		V <sub>R</sub> =50V		10	30	
Rise time	t <sub>R</sub>	V <sub>R</sub> =50V; λ =1064nm; R <sub>L</sub> =50Ω		10		ns
Tempcoeffi-cient 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> =2μA Ev=0lx	240			V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V f=1MHz		90		pF
		V <sub>R</sub> =50V f=1MHz			40	
Cut-off frequency	f <sub>-3dB</sub>	V <sub>R</sub> =0V, R <sub>L</sub> =50Ω		10		MHz
		V <sub>R</sub> =10V, R <sub>L</sub> =50Ω		4		
CrossTalk Channel-to-Channel		400-850nm, Adjacent Channel		0.1	0.5	%
		850-1100nm, Adjacent Channels		1	5	
Uniformity of each Element	%		0.8		2	%
Photo sensitivity	S <sub>R</sub>	840nm		0.57		A/W
		1060nm	0.40			
Spectral Application Range	λ <sub>range</sub>		400		1100	nm
Spectral Response-Peak	λ <sub>p</sub>			1060		nm
Shunt resistance	R <sub>sh</sub>	V <sub>R</sub> =10mV		0.5		GΩ
Rsh Temperature Coefficient	TC Rsh			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		1.75×10 <sup>-14</sup>		W/Hz <sup>1/2</sup>
Specific Detectivity	D*	V <sub>R</sub> =10V λ =940nm		3.43×10 <sup>13</sup>		cm(Hz/W) <sup>1/2</sup>

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

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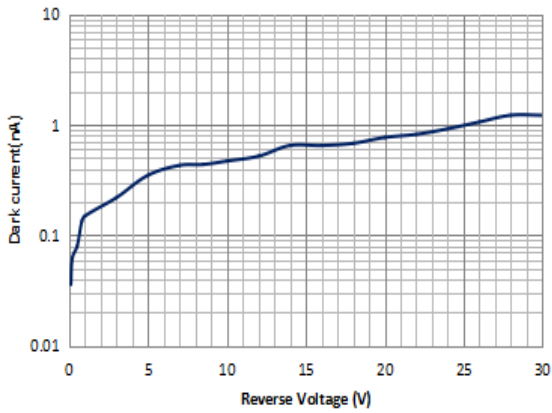
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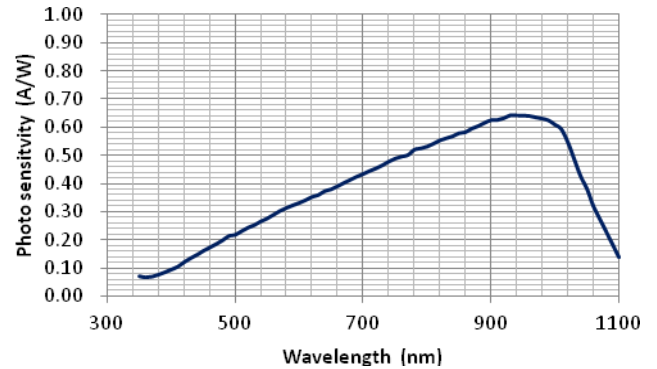
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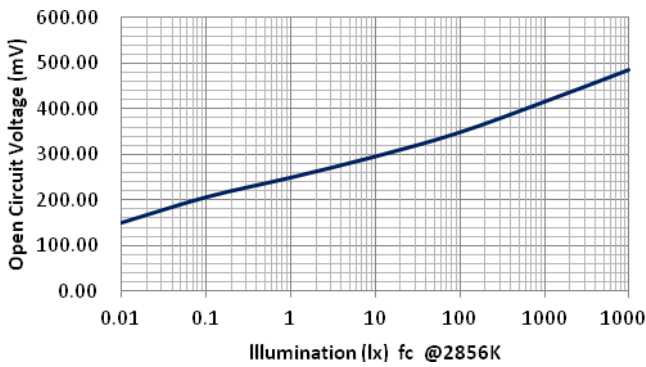
## ■ Dark current vs. reverse voltage



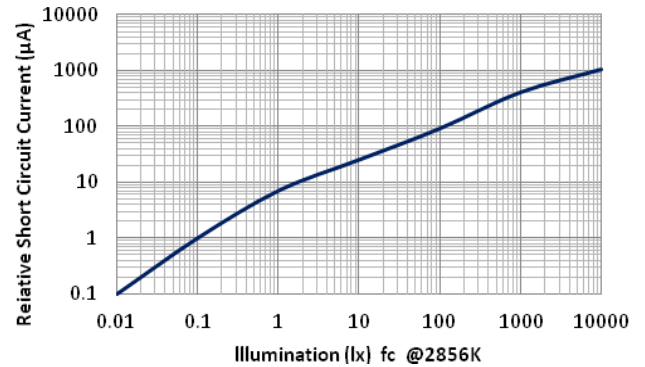
## ■ Spectral response



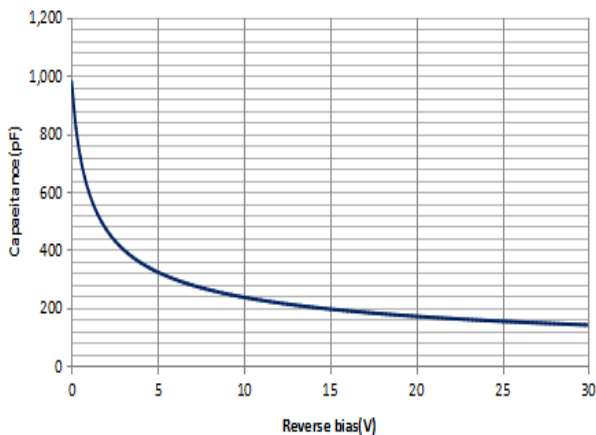
## ■ Open circuit voltage vs Illumination



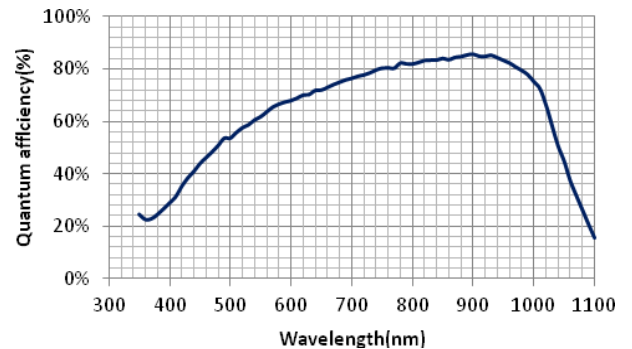
## ■ Relative Short Circuit Current vs. Illumination



## ■ Relative Junction Capacitance vs Voltage



## ■ Quantum efficiency



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