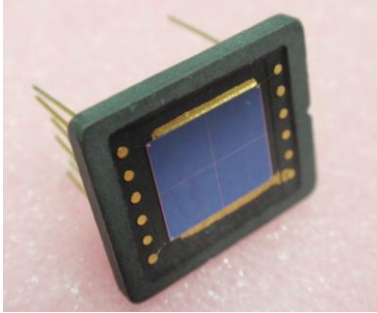


## SILICON QUADRANT PHOTODIODE



### Description

100 mm<sup>2</sup> active area , low Dark Current Quadrant Photodiode with P on N construction and 40um gaps. Packaged in a ceramic stem package with resin coating or K9 glass.

### Features

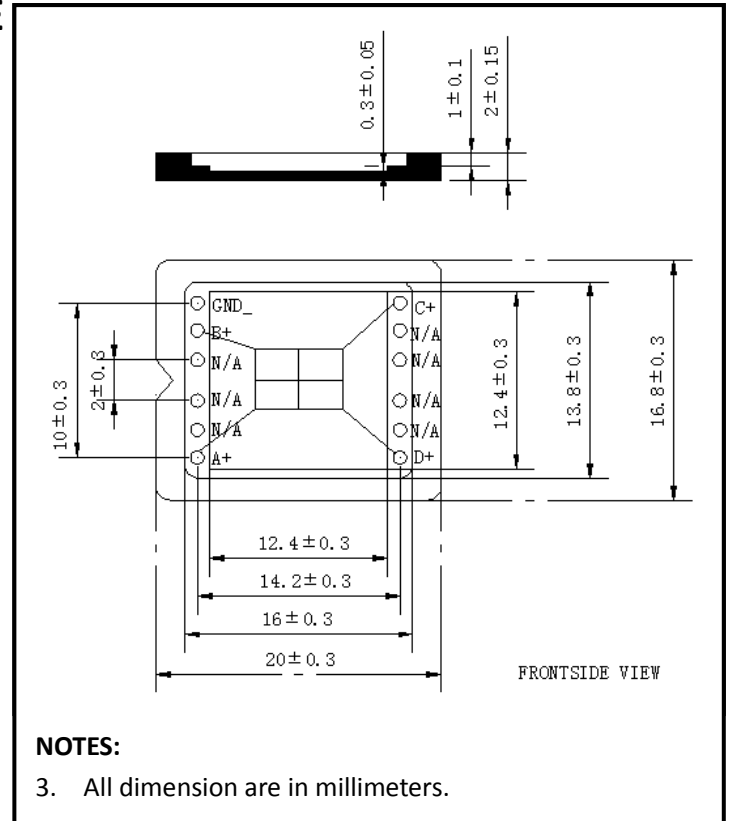
- \* 100 mm<sup>2</sup> active area
- \* Small gap
- \* Low dark current
- \* Operating temperature is from -40 to +100°C
- \* Storage temperature is from -40 to +100°C
- \* soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

### General Ratings

- \* Type Silicon quadrant photodiode
- \* Chip active area: 10.0\*10.0mm

### Applications

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



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# OSQ100-IC



## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Recommended Spot Size	Dia		Φ0.1		Φ4	mm
Damage Threshold cw				300		mw/cm <sup>2</sup>
Damage 10ns Pulse				1500		mj/cm <sup>2</sup>
Short circuit Current	I <sub>sc</sub>	Ev=100lx fc=2856k*		90		μA
Isc Temperature Coefficient	TC Isc	2856k		1.1		%/°C
Open Circuit Voitage	Voc	Ev=100lx fc=2856k*		349		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		390		
Rise time	t <sub>r</sub>	V <sub>R</sub> =5V;λ=850nm;R <sub>L</sub> =50Ω		1000		μs
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	30			V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V f=1MHz		110		pF
		V <sub>R</sub> =10V f=1MHz		30		
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
		940nm		0.64		
Spectral Application Range	λ <sub>range</sub>		400		1100	nm
Spectral Response-Peak	λ <sub>p</sub>			940		nm
Shunt resistance	Rsh	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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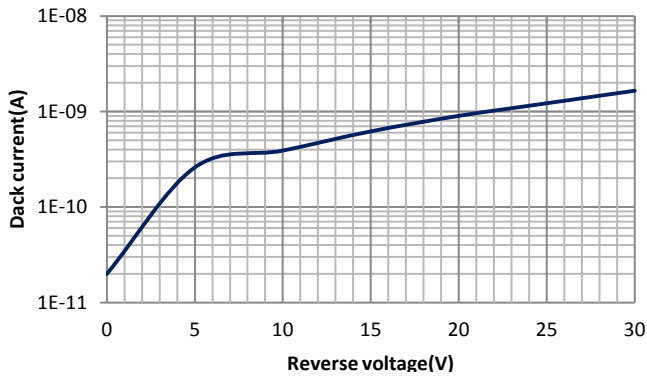
EMAIL:sales@otron-sensor.com

[Http://www.otron-sensor.com](http://www.otron-sensor.com)

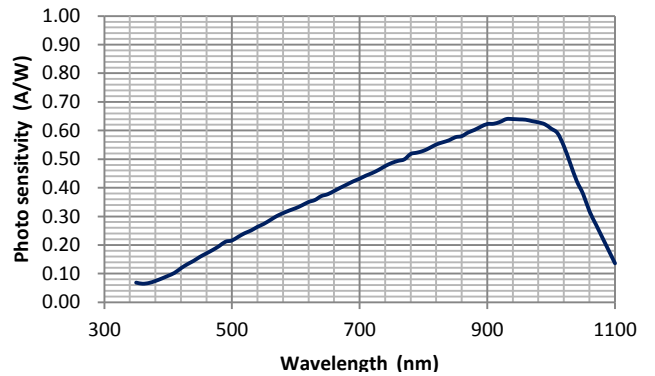


# OSQ100-IC

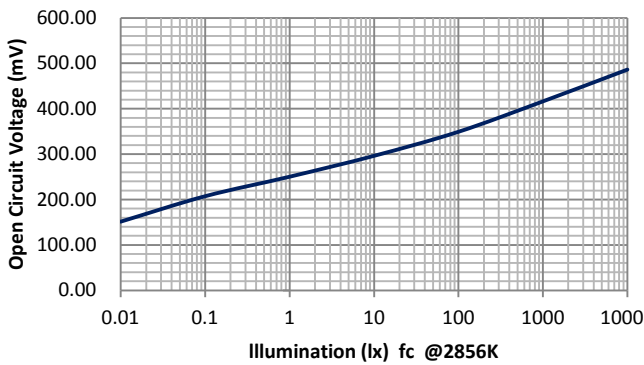
## ■ Dark current vs. reverse voltage



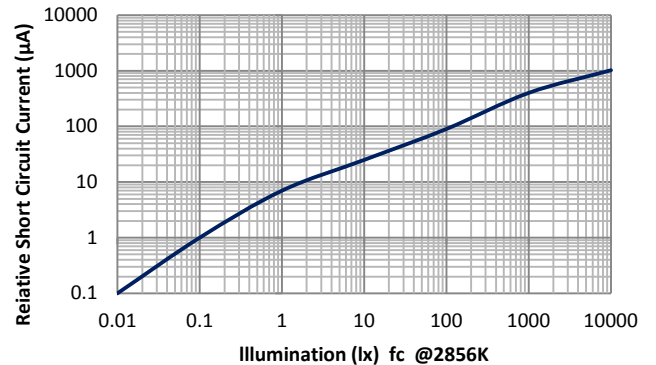
## ■ Spectral response



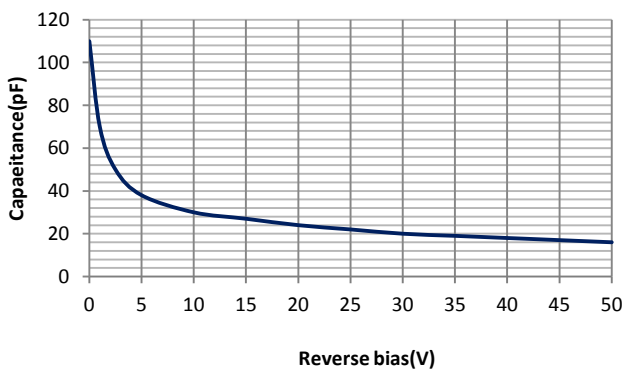
## ■ Open circuit Voltage vs Illumination



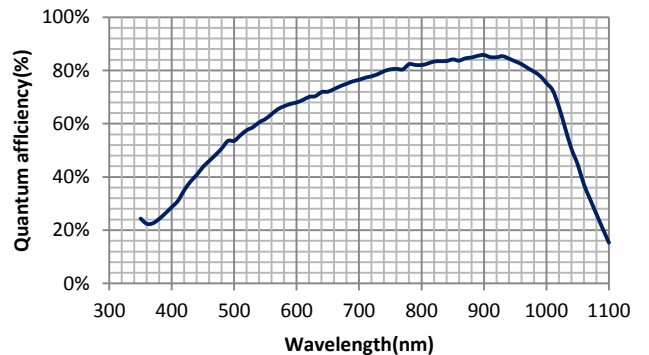
## ■ Relative Short Circuit Current vs. Illumination



## ■ Relative Junction Capacitance VS. Voltage



## ■ Quantum efficiency



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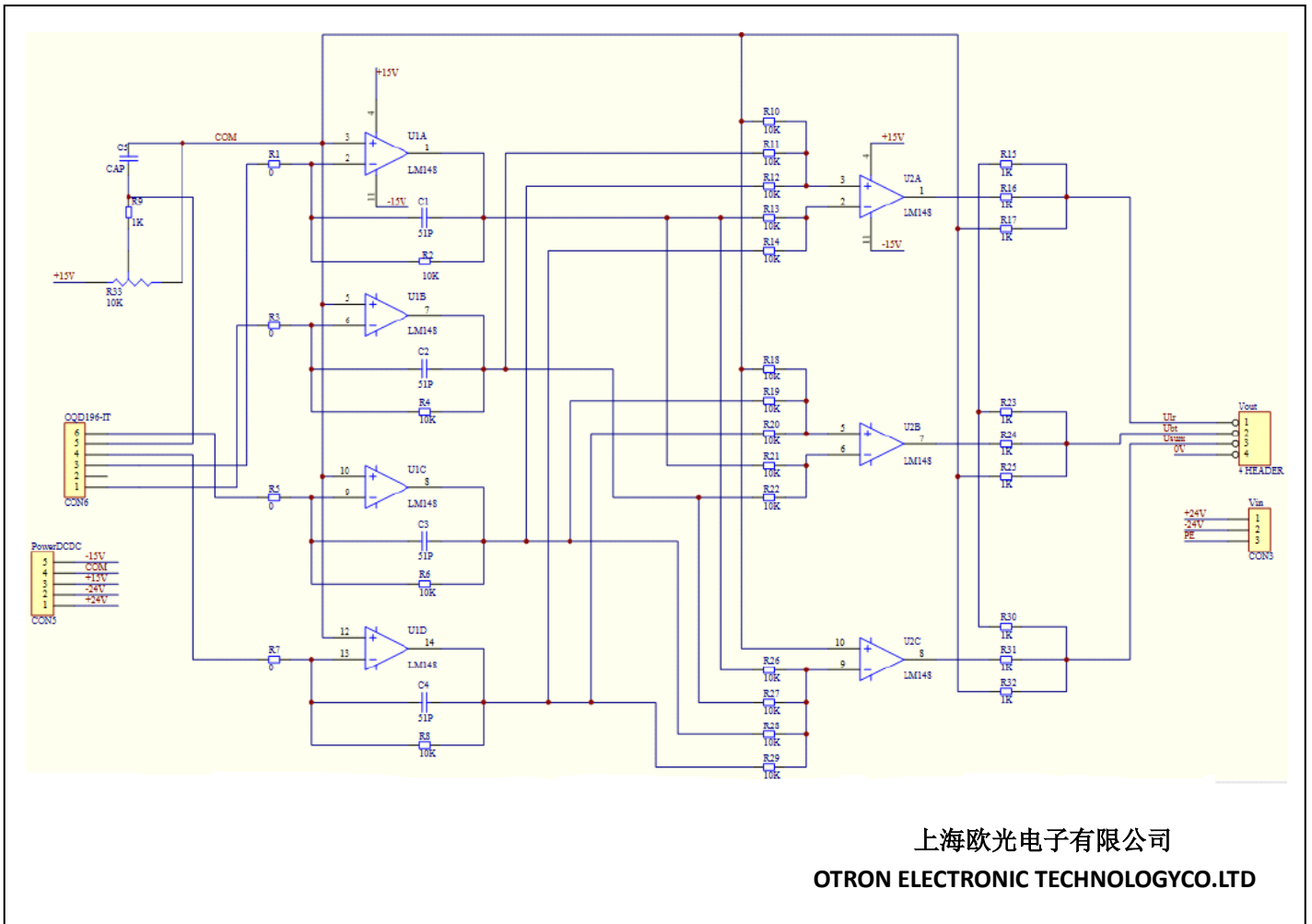
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# OSQ100-IC

## APPLICATION CIRCUIT



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