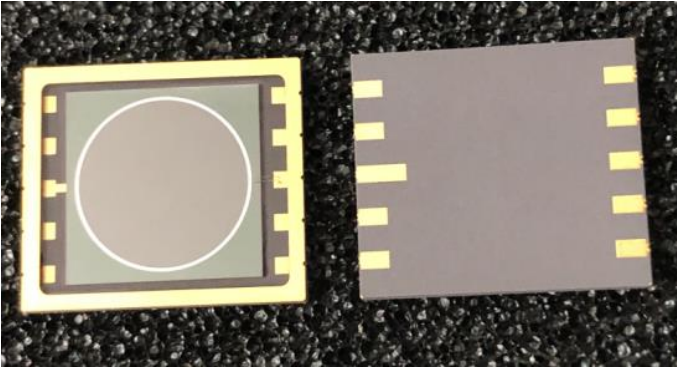


## SILICON QUADRANT PHOTODIODE



### Description

Φ10 mm active area , low Dark Current photodiode with P On N construction .

Surface mount packaged with clear epoxy encapsulant.

### Features

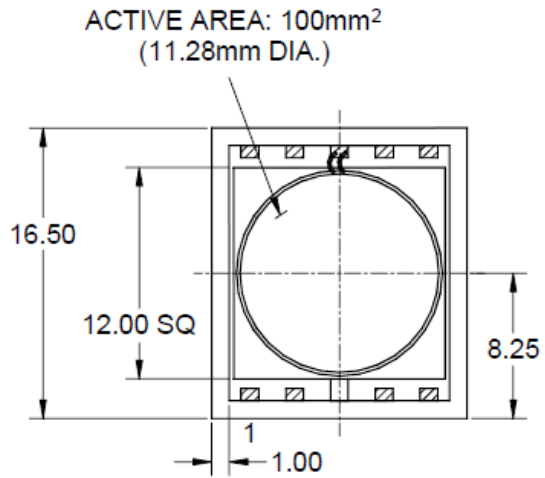
- \* Φ10 mm active area
- \* Operating temperature is from -40 to +80°C
- \* Storage temperature is from -40 to +100°C

### General Ratings

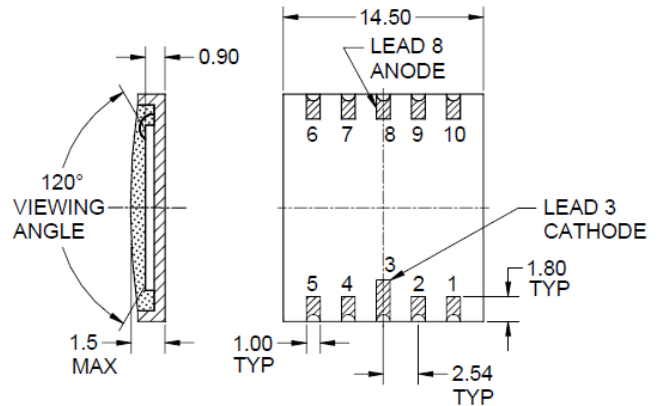
- \* Type Silicon quadrant photodiode

### Applications

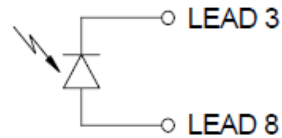
- \* Laser beam position sensor
- \* Optical tweezers
- \* Solar tracking system
- \* Autocollimators
- \* Ellipsometers
- \* Laser beam axis alignment



FRONTSIDE VIEW



BACKSIDE VIEW



LEADS 1, 2, 4, 5, 6, 7, 9, 10  
NOT CONNECTED

**NOTES:**

1. All dimension are in millimeters.

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



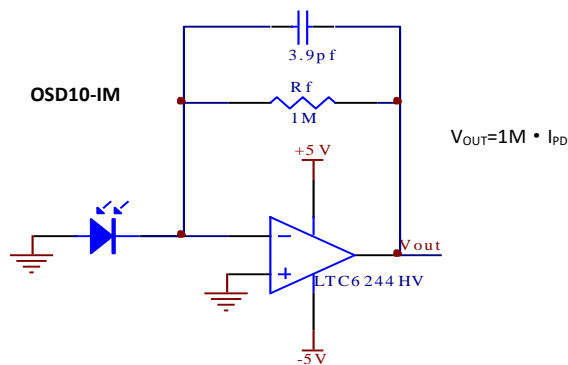
# OSD10-IM



## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Active area	A			Φ10		mm
Dark current	I <sub>D</sub>	V <sub>R</sub> =10mV		0.25		nA
		V <sub>R</sub> =10V		2.15		
Rise time	t <sub>R</sub>	V <sub>R</sub> =10V; λ=850nm; R <sub>L</sub> =50Ω		50		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	50			V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V f=1MHz		1000		pF
		V <sub>R</sub> =10V f=1MHz		126		
Photo sensitivity	S <sub>R</sub>	650nm		0.37		A/W
		940nm		0.66		
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		0.13		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		2.36×10 <sup>-14</sup>		W/Hz <sup>1/2</sup>
Specific Detectivity	D*	V <sub>R</sub> =10V λ=940nm		4.24×10 <sup>13</sup>		cm(Hz/W) <sup>1/2</sup>

## Typical application circuit



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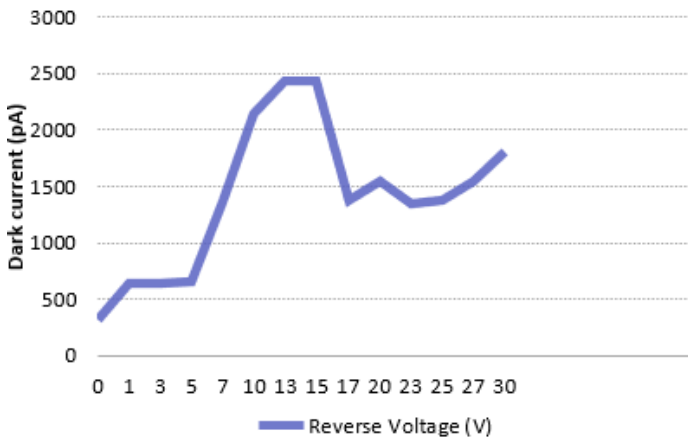
EMAIL: [otron.sensor@gmail.com](mailto:otron.sensor@gmail.com)

<http://www.e-otron.com>

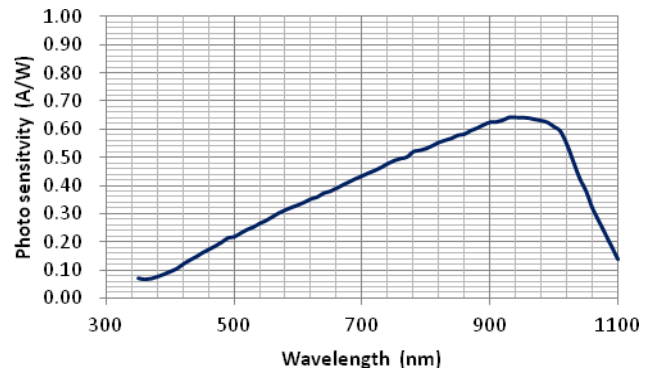


# OSD10-IM

## ■ Dark current vs. reverse voltage

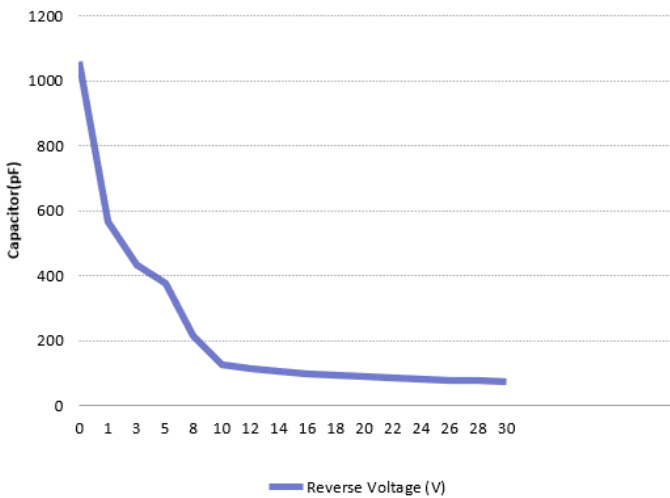


## ■ Spectral response

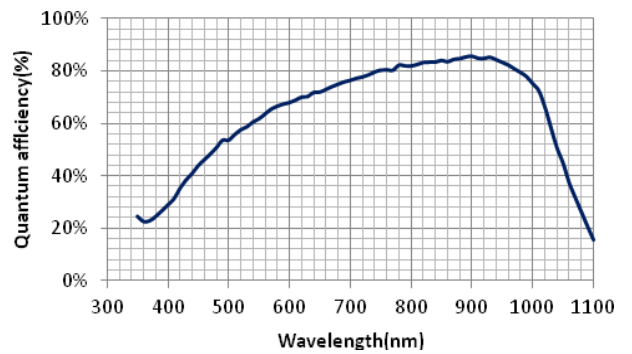


## ■ Relative Junction Capacitance

VS. Voltage



## ■ Quantum efficiency



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