

## InGaAs QUADRANT PHOTODIODE



### Description

1.5mm diameter Low Dark Current InGaAs Quadrant Photodiode with P on N construction and 30um gaps. Packaged in a TO-5 with a hermetic ultra flat fused silicon glass window cap.

### Features

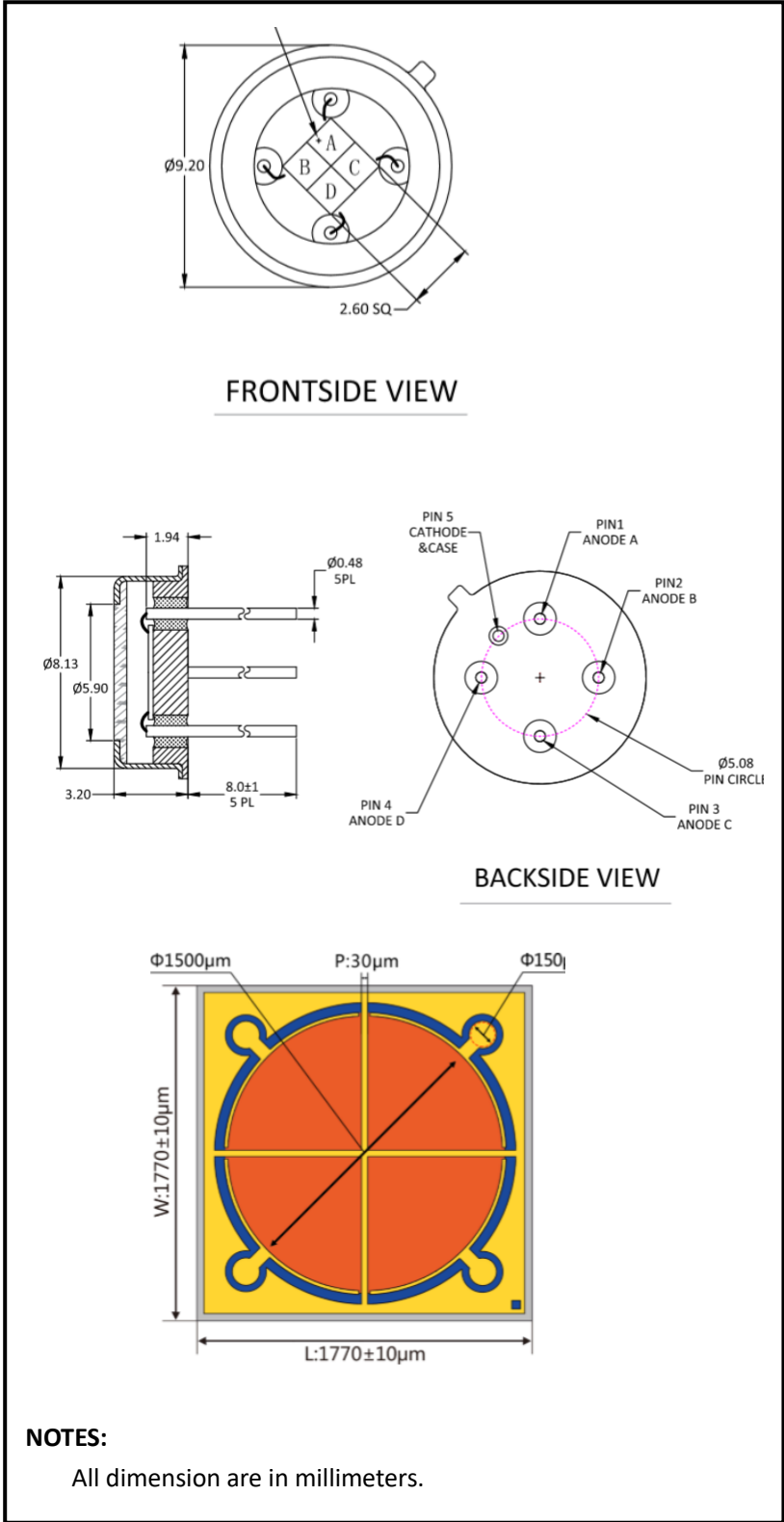
- \* Planar structure on N+ InP substrate with 4 top anode contacts
- \* High responsivity and uniformity
- \* Low noise and cross-talk between channels

### General Ratings

- \* High linearity
- \* High reliability

### Applications

- \* Laser beam position sensor
- \* Minuteness process controller
- \* Optical tweezers
- \* Laser guidance



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



# IGQ1500-IT



## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Chip size	Dia.			Φ1.5		mm
Gap	d	element to element		30		um
Dark current	I <sub>D</sub>	V <sub>R</sub> =0V, Per channel		0.017		nA
		V <sub>R</sub> =2.5V, Per channel		0.028		nA
Rise time	t <sub>r</sub>	f=1MHz; λ=1550nm; V <sub>R</sub> =5V, R <sub>L</sub> =50Ω		2	3	ns
Bandwidth	BW	f=1MHz; λ=1550nm; V <sub>R</sub> =5V, R <sub>L</sub> =50Ω, P <sub>in</sub> =0.5mW	30			MHz
Linearly	ΔS <sub>R</sub>	λ=1550nm; V <sub>R</sub> =5V, P <sub>in</sub> =0.01~10mW	-5		+5	%
Temp coefficient of I <sub>D</sub>	T <sub>CID</sub>			1.2		times/°C
Reverse breakdown voltage	V <sub>(BR)R</sub>	I <sub>R</sub> =10μA Ev=0lx		10		V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V f=1MHz		770		pF
		V <sub>R</sub> =5V f=1MHz		25		pF
Crosstalk Channel- to -Channel		850-1700nm, Adjacent Channels, V <sub>R</sub> =5V			3	%
Uniformity of each Element	δ <sub>Re</sub>	V <sub>R</sub> =5V, λ =1500nm, φ e=10μW			2	%
Photo sensitivity	S <sub>R</sub>	1310nm		1.01		A/W
		1550nm		1.04		
Spectral Application Range	λ <sub>range</sub>		800		1700	nm
Spectral Response-Peak	λ <sub>p</sub>			1550		nm
Shunt resistance	R <sub>sh</sub>	V <sub>R</sub> =10mV		35		MΩ
Rsh Temperature Coefficient	TC R <sub>sh</sub>	V <sub>R</sub> =10mV		0.18		%/°C
Detectivity	D*	@λ <sub>p</sub>		3.17*10 <sup>12</sup>		cm*Hz <sup>1/2</sup> /W
Noise equivalent power	NEP	@λ <sub>p</sub>		3.15*10 <sup>-14</sup>		W/Hz <sup>1/2</sup>
Angular Resp 50% Resp Pt	θ <sub>1/2</sub>			±45		Degrees

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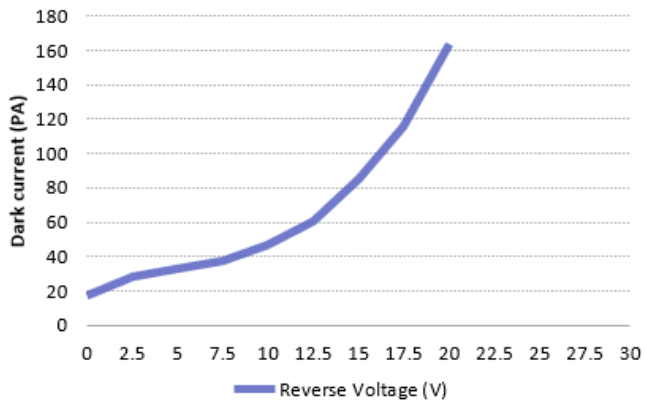
FAX:+86-21-54971823

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

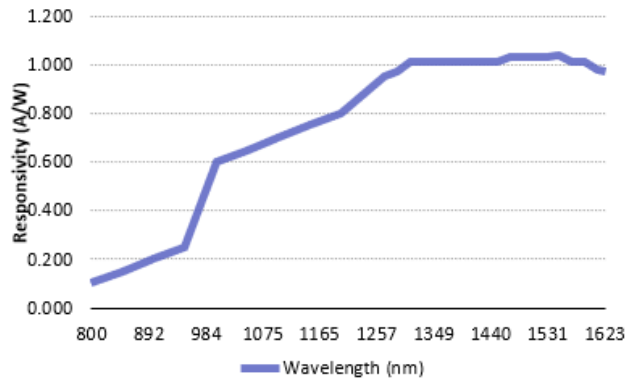
<http://www.e-otron.com>



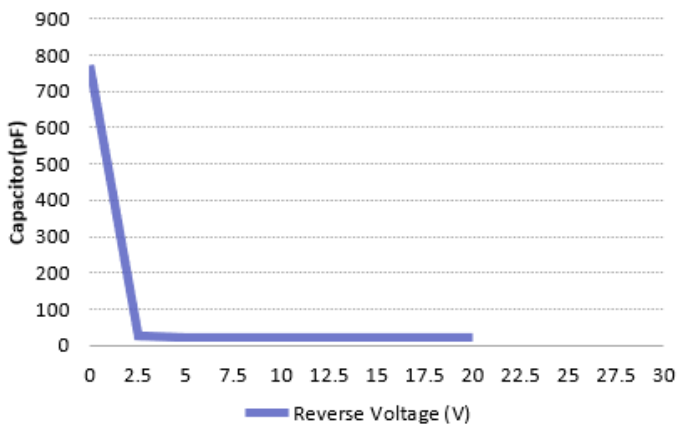
## ■ Dark current vs. reverse voltage



## ■ Spectral response



## ■ Relative Junction Capacitance VS. Voltage



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