

## SILICON QUADRANT PHOTODIODE



### Description

Φ11.5mm active area, low dark current quadrant photodiode  
With N on P construction and 130um gaps.

A guard ring collects current generated outside the active Area, ensuring the current will not contribute to noise.

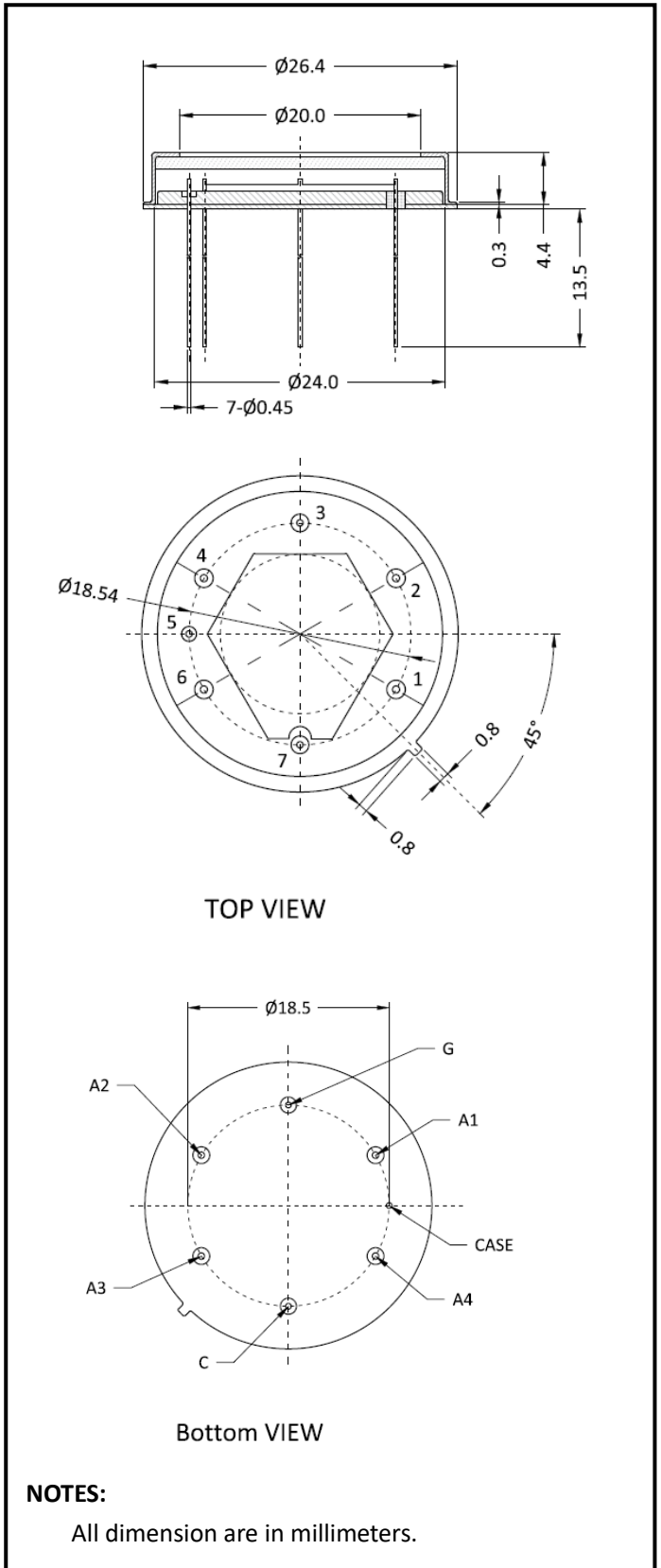
It's optimized for high response at 1064nm.

### Features

- \* Small gap (130um)
- \* Low dark current
- \* High QE at 1064nm
- \* Operating temperature is from -45 to +100°C
- \* Storage temperature is from -55 to +125°C
- \* soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

### Applications

- \* 1064nm Laser Detector
- \* Laser alignment
- \* Laser guidance
- \* Spot position detection





## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Number of elements			4			
Active area (diamater)			Φ11.5			mm
Gap		Between elements	130			um
Spectral range			400		1100	nm
Photo sensitivity	S <sub>R</sub>	1064nm, V=150V, Ta=+22°C		0.50	0.55	A/W
		1064nm, V=150V, Ta=+10°C		0.48		
		1064nm, V=150V, Ta=0°C		0.46		
		1064nm, V=150V, Ta=-10°C		0.42		
		1064nm, V=150V, Ta=-20°C		0.39		
		1064nm, V=150V, Ta=-30°C		0.36		
		1064nm, V=150V, Ta=-40°C		0.32		
		1064nm, V=150V, Ta=-45°C		0.30		
Saturation power					0.3	w/cm <sup>2</sup>
Dark current	I <sub>D</sub>	V <sub>R</sub> =160V		4.20		nA
		V <sub>R</sub> =180V		4.96		
Rise time	t <sub>R</sub>	V <sub>R</sub> =180V; λ =1064m;R <sub>L</sub> =50Ω	15	20	25	ns
Temp coefficient of Ubias	T <sub>CID</sub>			0.8		V/°C
Reverse breakdown voltage	V <sub>(BR)R</sub>	I <sub>R</sub> =10μA E <sub>v</sub> =0lx	200	260	400	V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V f=1MHz		168		pF
		V <sub>R</sub> =180V f=1MHz		10		
Uniformity of each Element	%		0.8		2	%
Crosstalk		V <sub>R</sub> =180V; λ =1064m;R <sub>L</sub> =50Ω		1		%

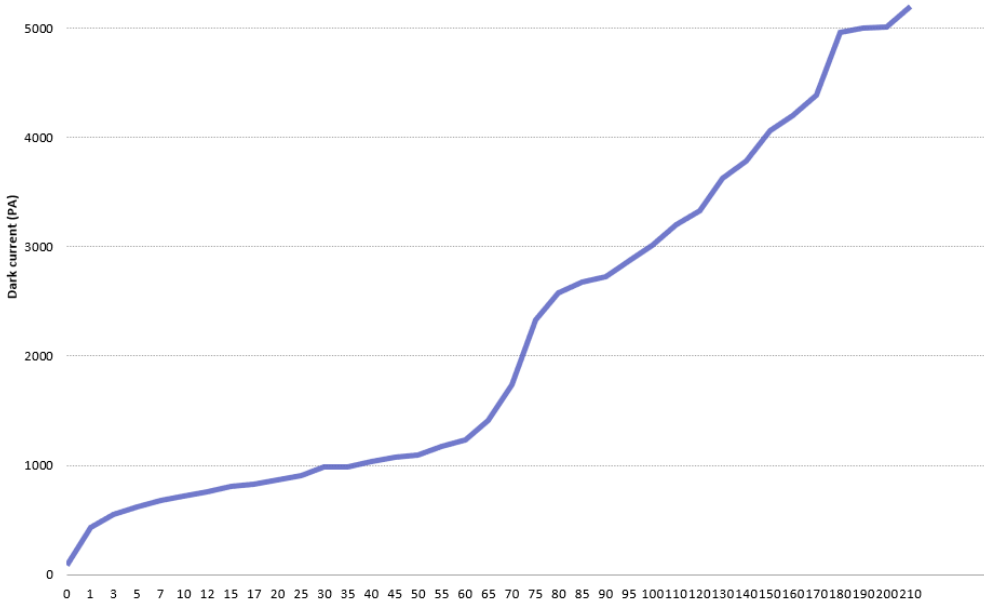
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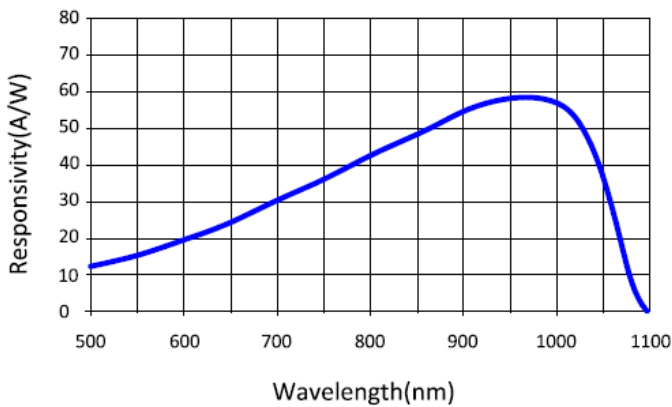
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## ■ Dark current vs. reverse voltage

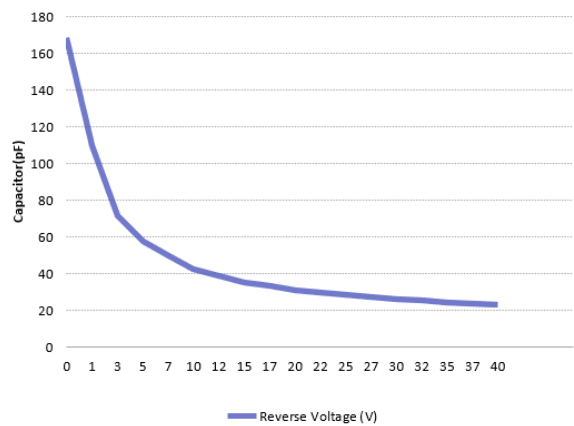


## ■ Spectral response



## ■ Relative Junction Capacitance

### VS. Voltage



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