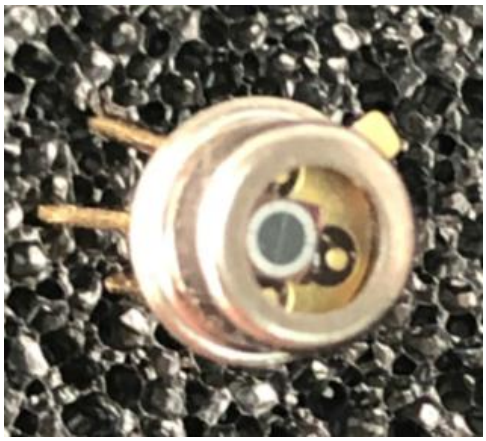
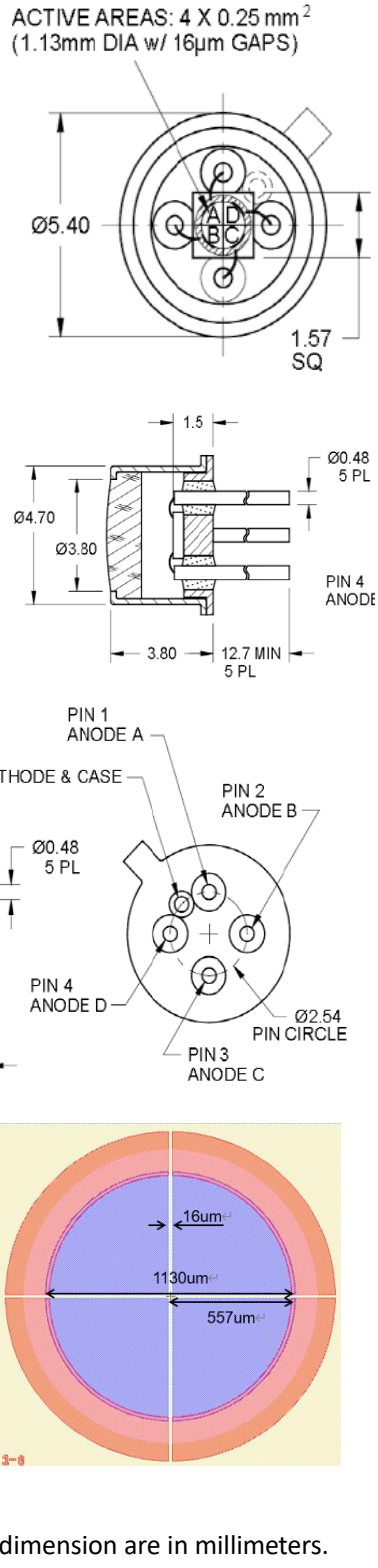
OSQ1-IT

SILCON QUADRANT PHOTODIODE





Description

Φ1.16mm active area, low dark current quadrant photodiode
With P on N construction and 16um gaps.

Features

* Small gap (16um)
* Low dark current
* High resolution
* 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 Photodiode
* High linearity * Low dark current

Applications

* Laser beam position sensor * Autocollimators
* Optical tweezers * Ellipsometers

NOTES:

All dimension are in millimeters.

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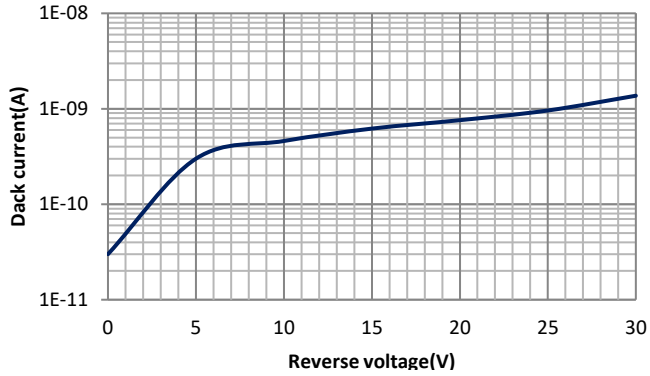
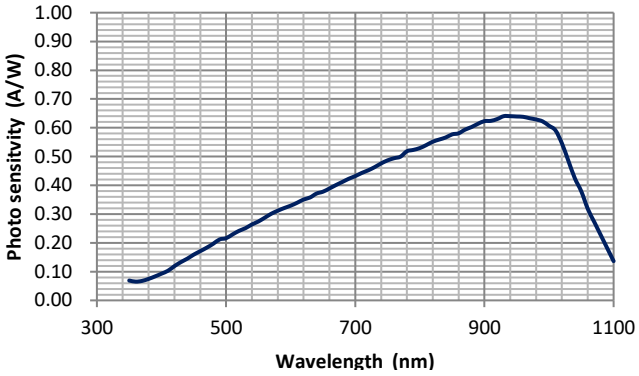
Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Number of elements				4		
Active area (diamater)				Φ1.13		mm
Gap		Between elements		16		um
Spectral range			400		1100	μA
Photo sensitivity	S_R	940nm		0.60		A/W
		635nm		0.40		
Dark current	I_D	V_R=10mV		0.01		nA
		V_R=10V		0.1	2	
Rise time	t_R	V_R=10V; λ=850m;R_L=50Ω		20		ns
Tempcoeffi-cient of I_D	T_{CID}			0.18		times/℃
Operating voltage	V_{op}		0		50	V
Reverse breakdown voltage	$V_{(BR)R}$	I_R=2μA Ev=0lx	20	50		V
Junction Capacitance	C_J	V_R=0V f=1MHz		5		pF
		V_R=10V f=1MHz		0.75	40	
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	%
Shunt resistance	Rsh	V_R=5mV		1		GΩ
Rsh Temperature Coefficient	TC Rsh			0.18		%/℃
Angular Resp 50% Resp Pt	$è_{1/2}$			±30		Degrees
Noise Equivalent Power	NEP	V_R =5V λ=940nm		9×10^{-14}		$W/Hz^{1/2}$
Specific Detectivity	D*	V_R =5 λ=940nm		$1.1 \cdot \times10^{13}$		$cm(Hz/W)^{1/2}$

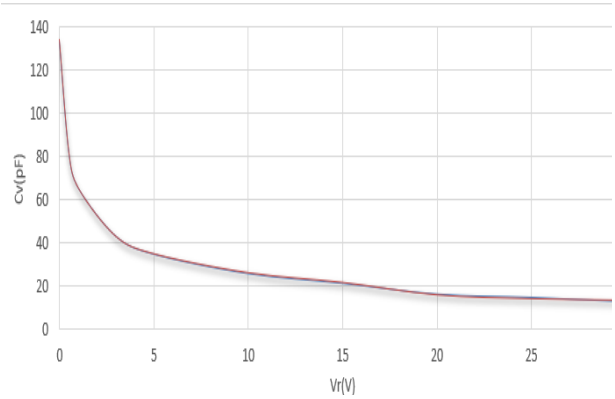
■Dark current vs. reverse voltage



■ Spectral response



■Relative Junction Capacitance VS. Voltage



■Quantum efficiency