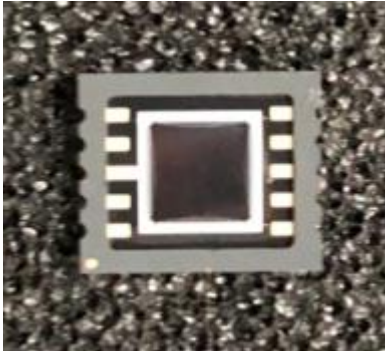


Two-dimensional PSD



Description

Tetra-lateral position sensing detector PSD016-IM is Manufactured with one single resistive layer for both one And two dimensional measurements. It feature a Common cathode and four anodes for this two dimensional Position sensing.

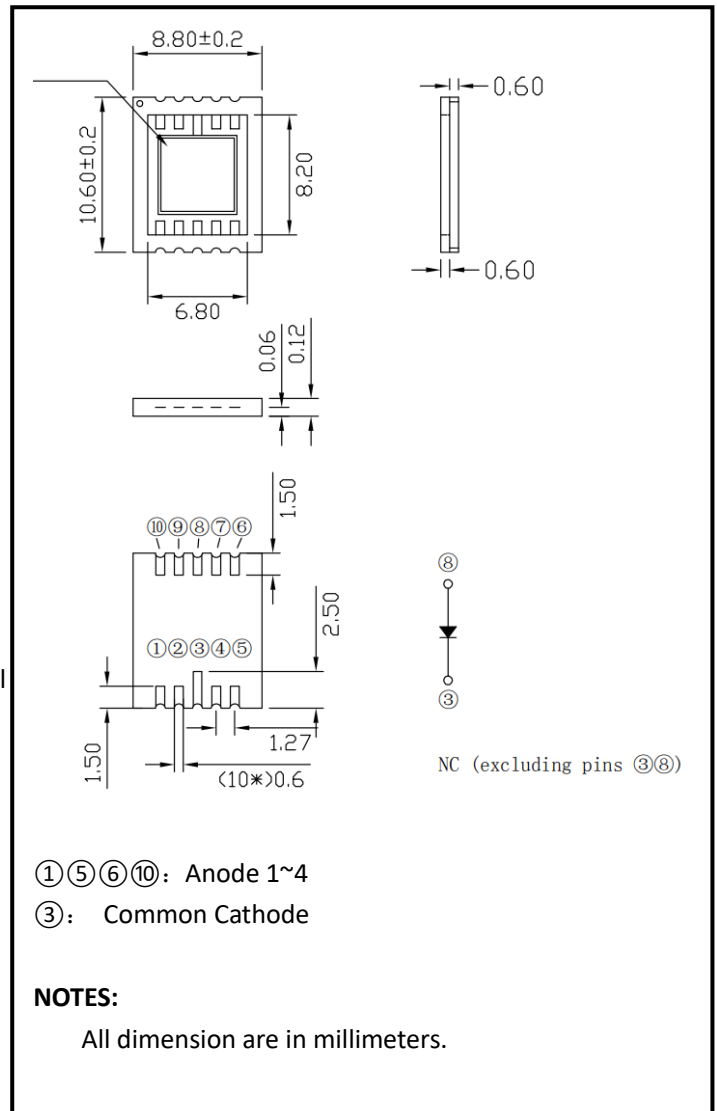
It offers high response uniformity, low dark current, and Good position linearity over 80% of the sensing area.

Features

- * High responsibility for IR laser.
- * High speed response
- * Low dark current
- * High dynamic range
- * Operating temperature is from -40 to +80°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.

Applications

- * Tool alignment and control
- * Leveling measurements
- * Angular measurements
- * Automatic range finder systems
- * 3 Dimensional vision



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Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Sensor Type			Pincushion Tetra Lateral Senaor			
Wavelength Range	λ		400-1100			nm
Sensor Size(active area)	A		4x4			mm ²
Recommended Spot Size			$\phi 0.2-\phi 3.2$			mm
Absolute Position Detection Error(mm)		$\lambda=900\text{nm}, V_R=5\text{V}$,	50			μm
Position resolution	ΔR	$I_o=1\mu\text{A}, B=1\text{KHz}$	0.7			μm
Incident power density	Ist	$V_R=5\text{V} R_L=1\text{K}\Omega$	10			mw/cm ²
Interelectrode Resistance	R		60			k Ω
Temp. Range	Te		-40~+80			°C
Dark current	I _d	$V_R=5\text{V}$		6		nA
		$V_R=15\text{V}$		12		
Breakdown voltege	U _{br}	$I_R=10\mu\text{A}$		30		V
Rise time	t _r	$V_R=15\text{V}, 650\text{nm}, 50\Omega$		0.60		μs
Junction Capacitance	C _J	$V_R=5\text{V}, f=1\text{MHz}$		49		pF
		$V_R=15\text{V}, f=1\text{MHz}$		33		
Photo sensitivity	S _R	$\lambda=650\text{nm}$		0.45		A/W
		$\lambda=900\text{nm}$		0.58		

Coverision Formula:

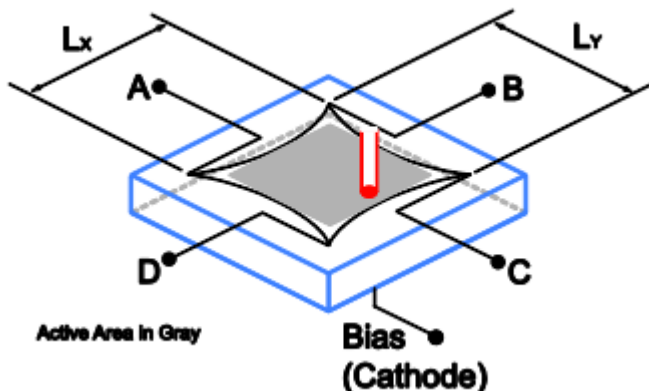
$$\Delta x = (A + D) - (B + C)$$

$$\Delta y = (A + B) - (C + D)$$

$$SUM = (A + B + C + D)$$

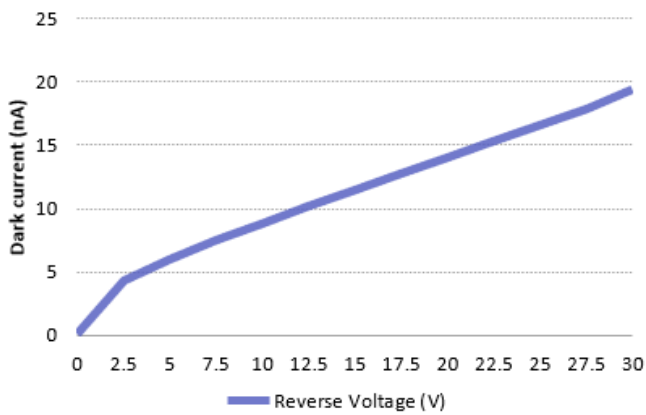
$$x = Lx(\Delta x) / 2 SUM ;$$

$$y = Ly (\Delta y) / 2 SUM$$

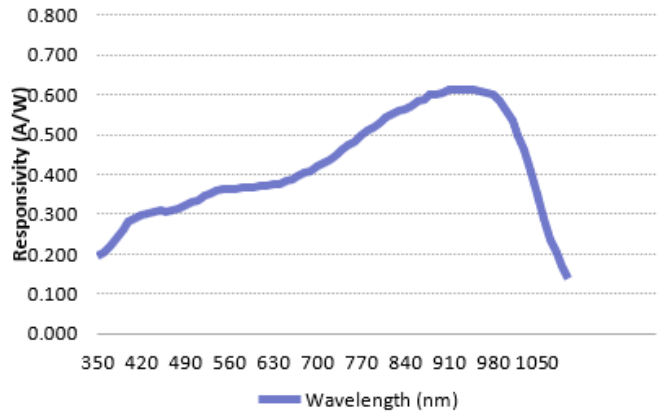


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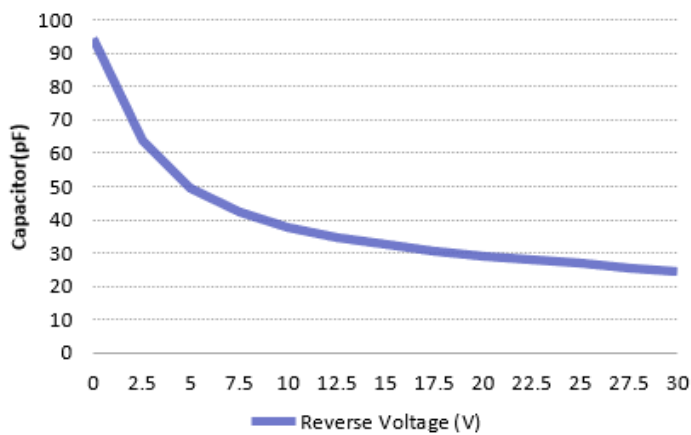
■ Dark current vs. reverse voltage



■ Spectral response



■ Relative Junction Capacitance VS. Voltage



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