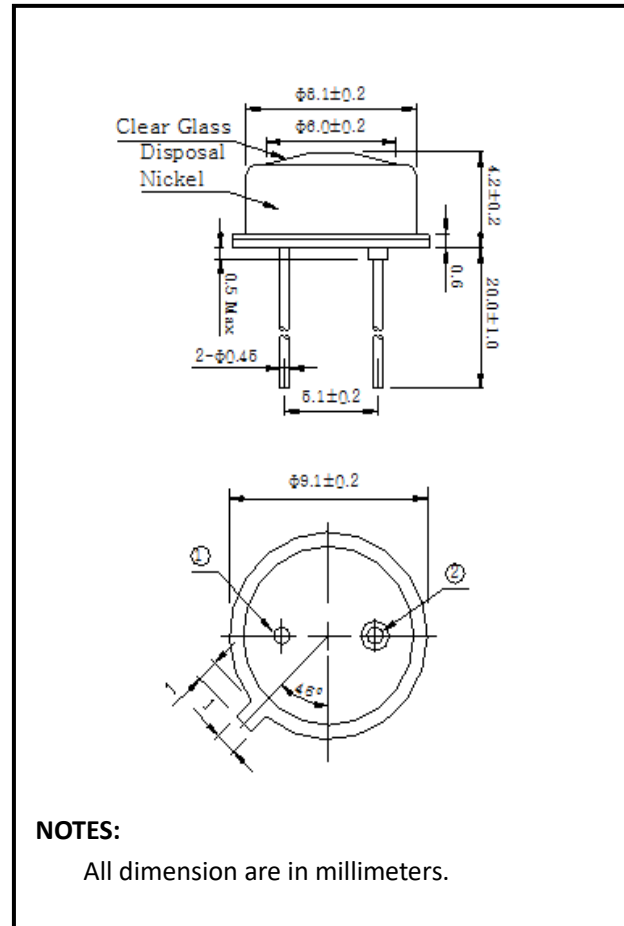


Silicon PIN Photodiode

OSD9-IT



Description

The OSD2.9-IT is high-output, high sensitivity silicon Photodiode mounted in TO-5 metal can package, permits wide response.

Features

- * High speed response
- * Wide angular response
- * High reliability in demanding environments
- * Operating temperature is from -40 to $+80^{\circ}\text{C}$
- * Storage temperature is from -40 to $+100^{\circ}\text{C}$
- * soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

General Ratings

- * Type Silicon Photodiode
- * High linearity
- * Low cost
- * Low dark current

Applications

- * Analytical instruments
- * Precision photometry
- * IR/ Laser light Monitoring
- * Optical measurement equipment
- * Medical equipment
- * Optical switch

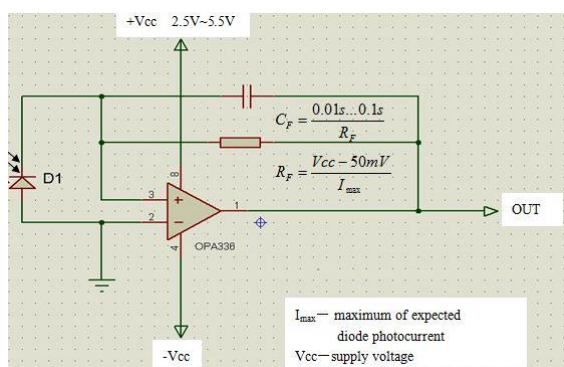
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Absolute Maximum Ratings (Ta=25°C)

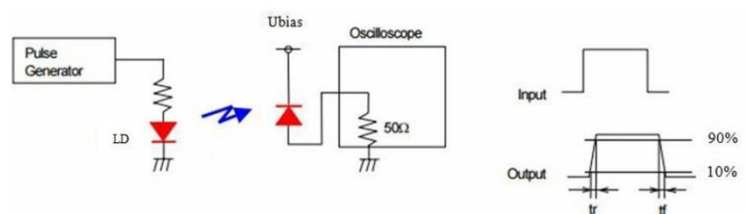
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Chip size	Size		3.6*3.6			mm ²
Active area	A		Φ 2.90			mm ²
Short circuit Current	I _{sc}	V _r =5V, E _v =5mw/cm ² f _c =2856k*		85		μA
Isc Temperature Coefficient	TC I _{sc}	2856k		1.1		%/°C
Open Circuit Voltage	V _{oc}	V _r =5V, E _v =5mw/cm ² f _c =2856k*		350		mV
Voc Temperature Coefficient	TC Voc	2856k		-2.2		mV/°C
Dark current	I _d	V _R =100mV		15		pA
		V _R =10V		25		
Rise time	t _{R**}	V _R =0V; λ=635nm; R _L =50Ω, f=1KHz		100		ns
		V _R =10V; λ=635nm; R _L =50Ω, f=1KHz		80		ns
Temp coefficient of I _d	T _{CI_D}			0.18		times/°C
Reverse breakdown voltage	V _{(BR)R}	I _R =100μA E _v =0lx	35			V
Junction Capacitance	C _J	V _R =0V f=1MHz		70		pF
		V _R =10V f=1MHz		25		
Photo sensitivity	S _R	650nm		0.38		A/W
		940nm		0.64		
Spectral Application Range	λ _{range}		400		1100	nm
Spectral Response-Peak	λ _p			940		nm
Shunt resistance	R _{sh}	V _R =10mV		0.5		GΩ
Rsh Temperature Coefficient	TC R _{sh}	E _v =100lx, V _R =10mV		0.18		%/°C
Angular Resp 50% Resp Pt	θ _{1/2}			±55		Degrees
Noise Equivalent Power	NEP	V _R =10V λ=940nm		2.58×10 ⁻¹⁴		W/Hz ^{1/2}
Specific Detectivity	D*	V _R =10V λ=940nm		1.67×10 ¹³		cm(Hz/W) ^{1/2}

* E_v: Illuminance by CIE standard light source A (tungsten lamp)

■ Typical application circuit

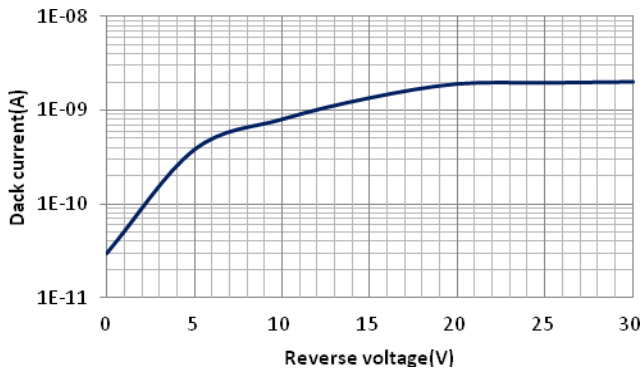


** Response time measurement Circuit:

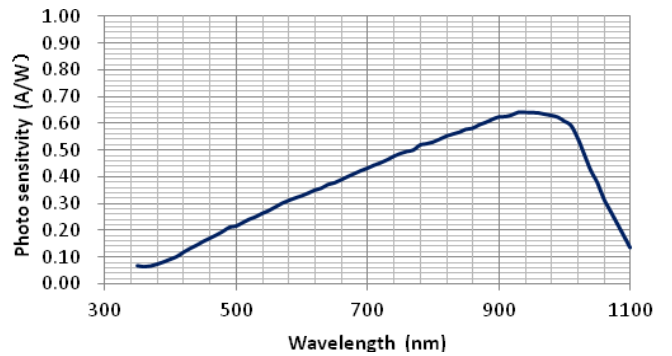


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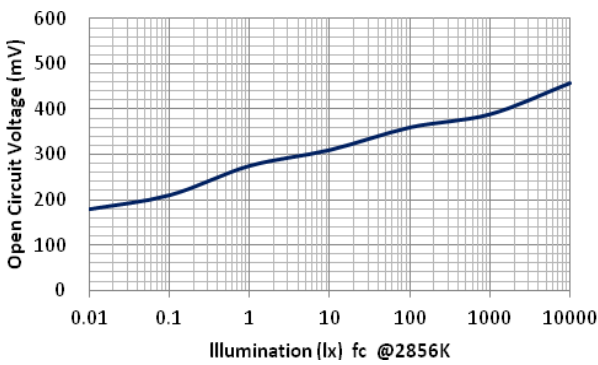
■ Dark current vs. reverse voltage



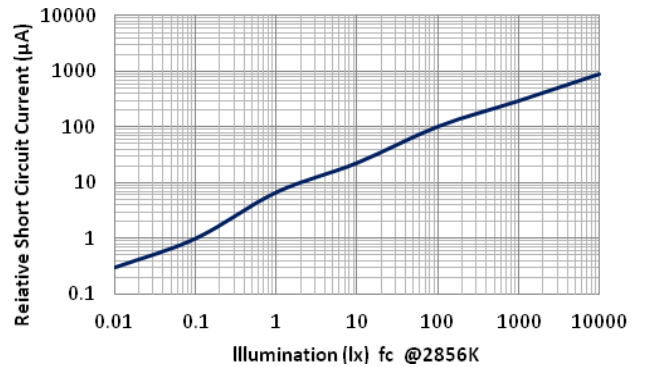
■ Spectral response



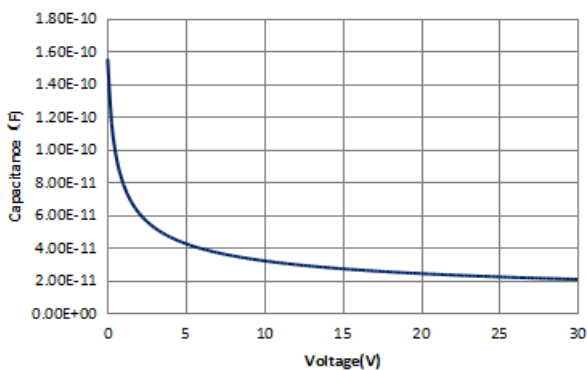
■ Open circuit Voltage vs Illumination



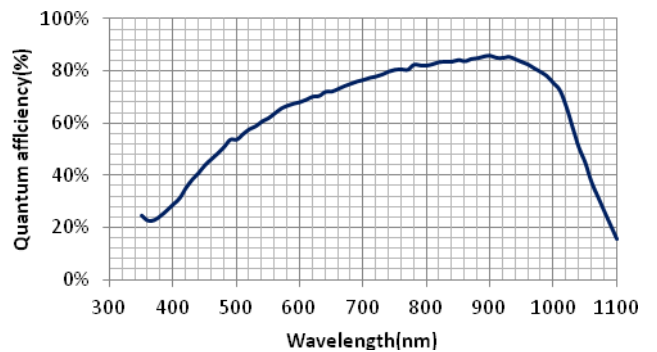
■ Relative Short Circuit Current vs. Illumination



■ Relative Junction Capacitance VS. Voltage



■ Quantum efficiency



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