

## Features

- $\varnothing$  4000  $\mu\text{m}$  active area
- High QE for  $\lambda = 850\text{-}1064$  nm
- Low noise
- Low slope multiplication curve

## Description

Circular active area APD chip with IR enhanced sensitivity. Low dark current due to guard ring diode. Metal can type hermetic TO8Si package with clear glass window.

## Application

- Pulsed 1064 nm laser detection
- Laser range finding
- Fluorescence detection

## RoHS

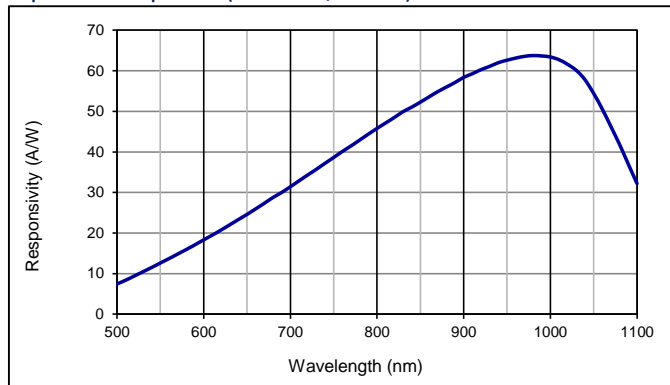
2011/65/EU



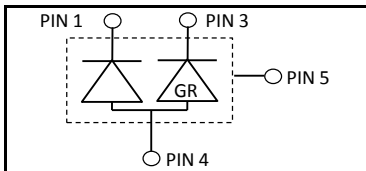
## Absolute maximum ratings

Symbol	Parameter	Min	Max	Unit
$T_{STG}$	Storage temp	-55	125	$^{\circ}\text{C}$
$T_{OP}$	Operating temp	-40*	100	$^{\circ}\text{C}$
$M_{max}$	Gain ( $I_{P0} = 1$ nA)	1000		
$I_{PEAK}$	Peak DC current		0.25	mA

## Spectral response ( $M = 100$ ; $23^{\circ}\text{C}$ )



## Schematic



## Electro-optical characteristics @ $23^{\circ}\text{C}$

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	Active area		$\varnothing$ 4000			$\mu\text{m}$
	Active area		12.56			$\text{mm}^2$
$I_D$	Dark current	$M = 100$		50	500	nA
C	Capacitance	$M = 100$		15		pF
	Responsivity	$M = 100$ ; $\lambda = 905$ nm		59		A/W
	Responsivity	$M = 100$ ; $\lambda = 1064$ nm		49		A/W
$t_R$	Rise time	$M = 100$ ; $\lambda = 1064$ nm; $R_L = 50 \Omega$		6		ns
$t_R$	Cut-off frequency	-3dB		70		MHz
$V_{BR}$	Breakdown voltage	$I_R = 2 \mu\text{A}$	220	300	600	V
	Temperature coefficient			3.3		V/K

\* please note that depending on operation voltage APD operation at temperatures below  $-15^{\circ}\text{C}$  may require sophisticated control circuit.

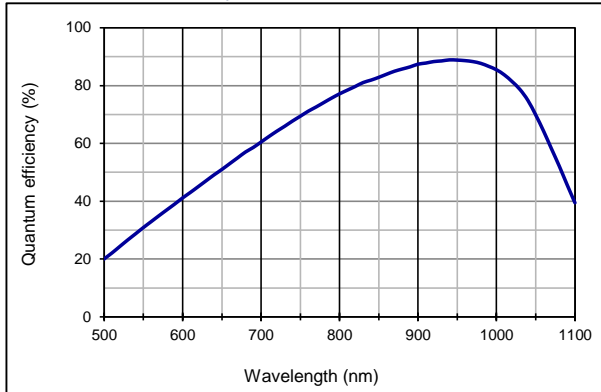
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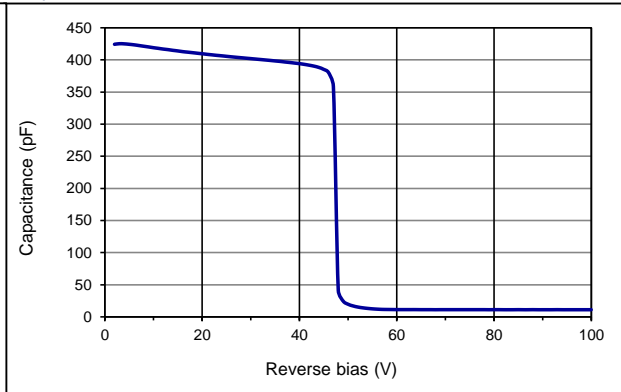
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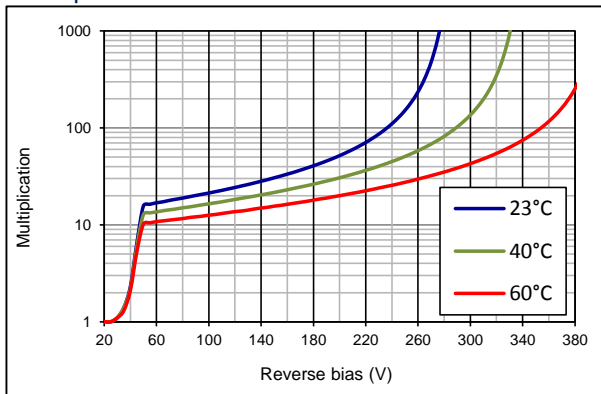
Quantum efficiency (23 °C)



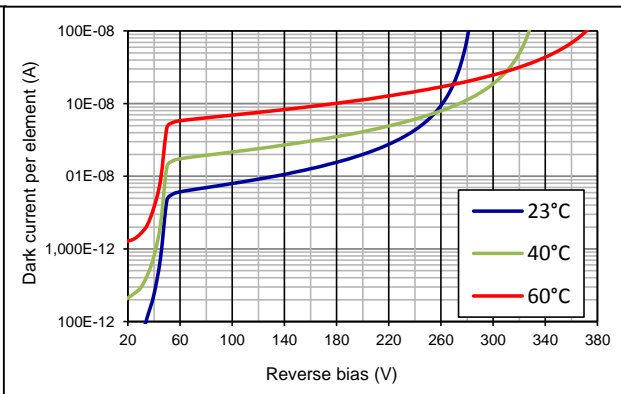
Capacitance as fct of reverse bias (23 °C)



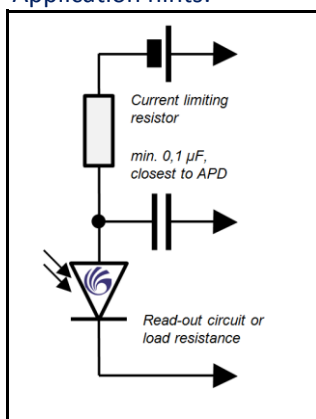
Multiplication as fct of reverse bias



Dark current as fct of reverse bias



Application hints:



- Current should be limited by a protecting resistor or current limiting - IC inside the power supply
- Guard ring should be connected to ground
- For low light level applications blocking of ambient light should be used
- For high gain applications bias voltage should be temperature compensated
- Please consider basic ESD protection while handling
- Use low noise read-out - IC
- For further questions please refer to document "Instructions for handling and processing" and application notes for APDs and APD-Arrays

Package dimension:

Small quantities: Foam pad, boxed (12 cm x 16.5 cm)

Disclaimer: Due to our strive for continuous improvement, specifications are subject to change within our PCN policy according to JESD46C.

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