

Features

- ϕ 4 mm total active area
- Segmented in 4 quadrants
- High QE for $\lambda = 850$ -1064 nm
- Low slope multiplication curve

Description

Segmented quadrant avalanche photodiode with enhanced IR responsivity in hermetic TO type metal can.

Application

- Pulsed 1064 nm laser detection
- Light source positioning
- Laser alignment

RoHS

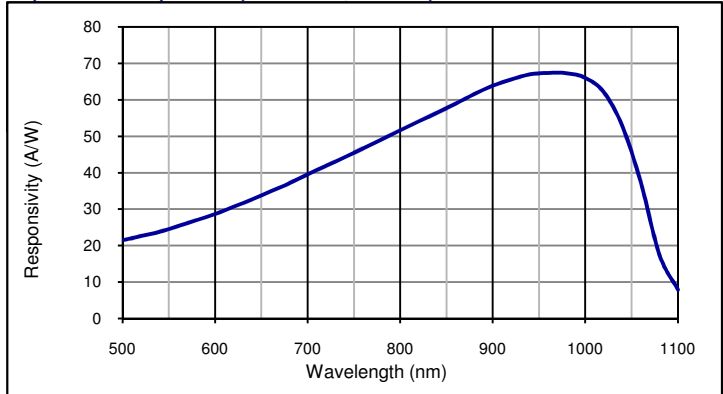
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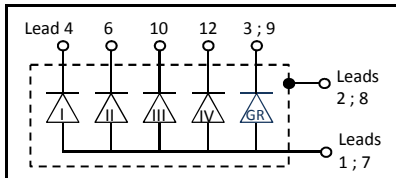
Absolute maximum ratings

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

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



Schematic



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

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	No of elements			4		
	Active area	segmented in 4 quadrants		ϕ 4000		μm
	Gap			110		μm
I_D	Dark current	M = 100; $\lambda = 905$ nm, per segment		7	75	nA
C	Capacitance	M = 100, per segment		4		pF
	Responsivity	M = 100; $\lambda = 1064$ nm		36		A/W
t_R	Rise time	M = 100; $\lambda = 905$ nm; $R_L = 50 \Omega$		5		ns
V_{BR}	Breakdown voltage	$I_R = 2 \mu A$	220	300	600	V
	Temperature coefficient			3.3		V/K
	Photo current uniformity	M = 50		± 5		%
	Dark current uniformity	M = 50		± 5		%

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

European, International Sales:

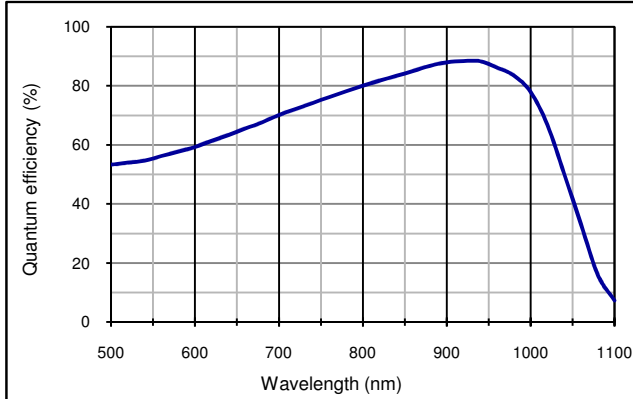
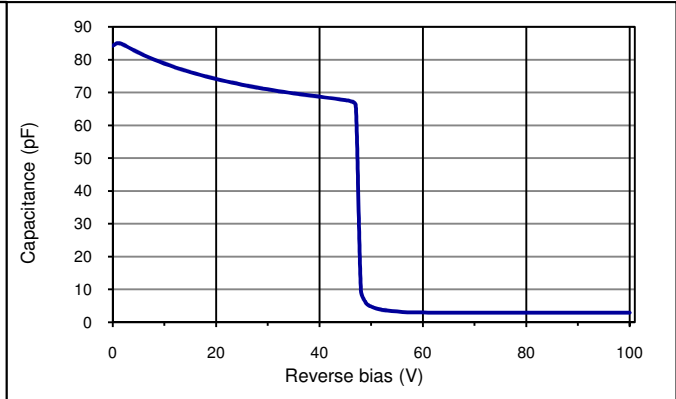
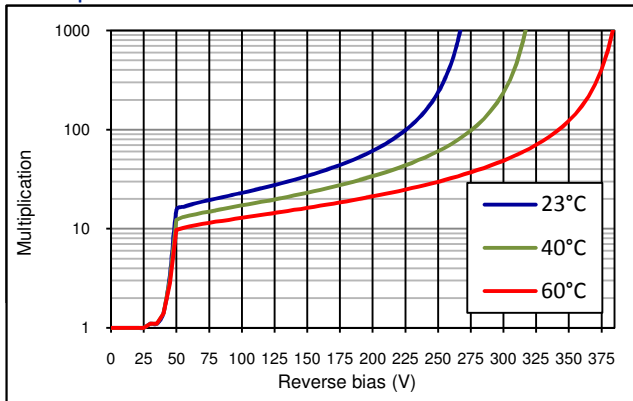
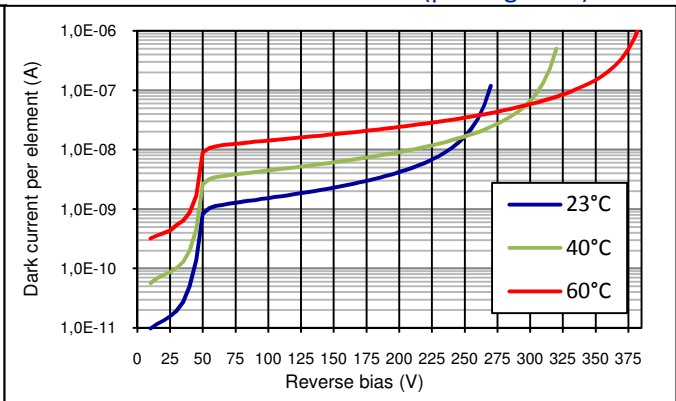
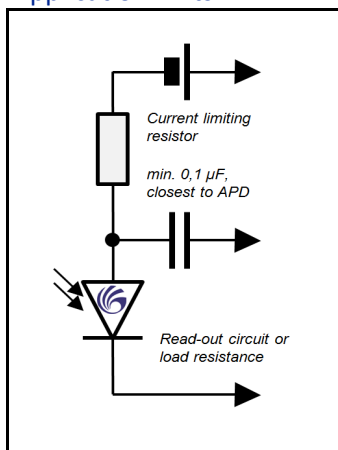


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Quantum efficiency (23 °C)

Capacitance as fct of reverse bias (23 °C, per segment)

Multiplication as fct of reverse bias

Dark current as fct of reverse bias (per segment)

Application hints:


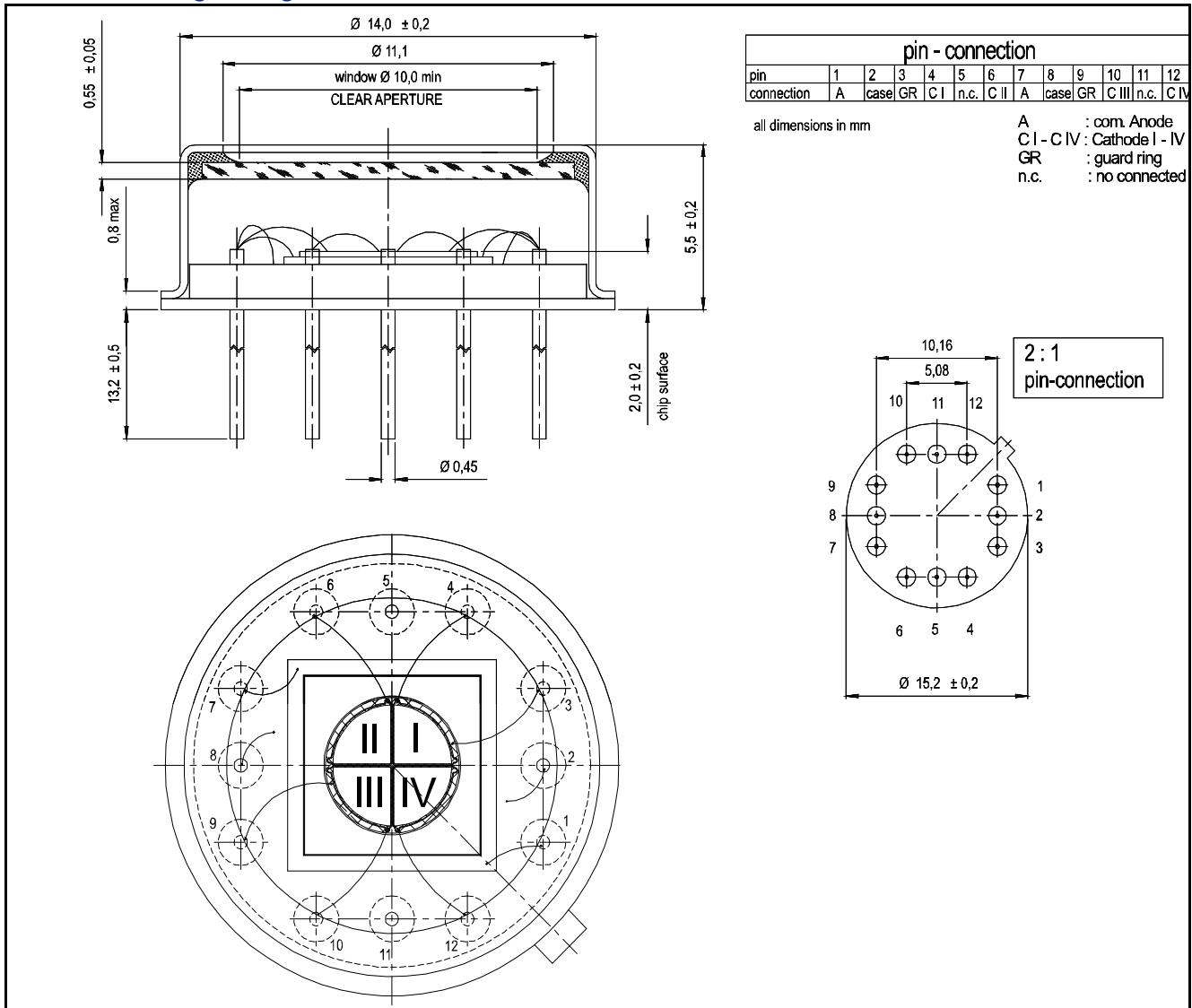
- Current should be limited by a protecting resistor or current limiting - IC inside the power supply
- Guard ring should be connected to ground
- For low light level applications blocking of ambient light should be used
- For high gain applications bias voltage should be temperature compensated
- Please 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

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Technical Drawing, Package: TO8Si

Package dimension

Small quantities: Chips on 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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