AD2500-9 TO5i

Avalanche Photodiode, NIR enhanced

Special characteristics:

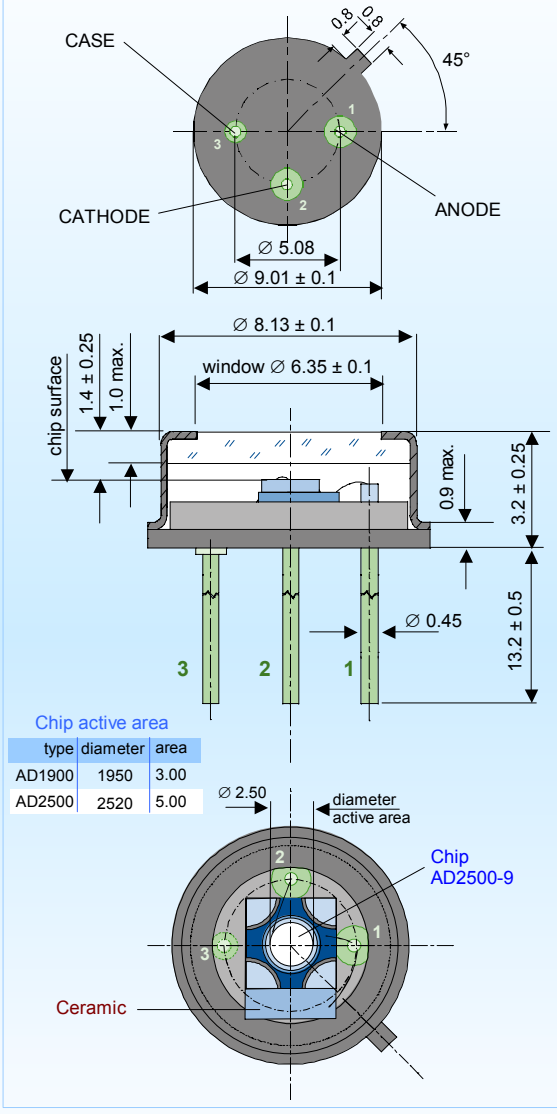
high gain at low bias voltage
fast rise time
2500 µm diameter active area
low capacitance

Parameters:	**AD2500-9 TO5i**
Active Area	5.0 mm^2 Ø 2520 µm
Dark Current [1)] (M = 100)	max. 30 nA typ. 20.0 nA
Total Capacitance [1)] (M = 100)	typ. 12 pF
Breakdown Voltage U_{BR} (at I_D = 2 µA)	120 … 300 V typ. > 200 V
Temperature Coefficient of U_{BR}	typ. 1.55 V/K
Spectral Responsivity [1)] (at 905 nm, M = 100)	min. 55 A/W typ. 60 A/W
Cut-off Frequency (-3dB)	typ. 0.2 GHz
Rise Time at 905 nm, 50 Ω	typ. 1.6 ns
Max. Gain	> 200
"Excess Noise" factor (M = 100)	typ. 2.5
"Excess Noise" index (M = 100)	typ. 0.2
N.E.P. (M = 100, 905 nm)	typ. 3* 10^{-13} $W/Hz^{1/2}$
Operating Temperature Storage Temperature	-20 … +70 °C -60 … +100 °C

***1) measurement conditions**:*
Setup of photo current 10 nA at M = 1 and irradiation by a IRED (880 nm, 80 nm bandwith).

Increase the photo current up to 1 µA, (M = 100) by internal multiplication due to an increasing bias voltage

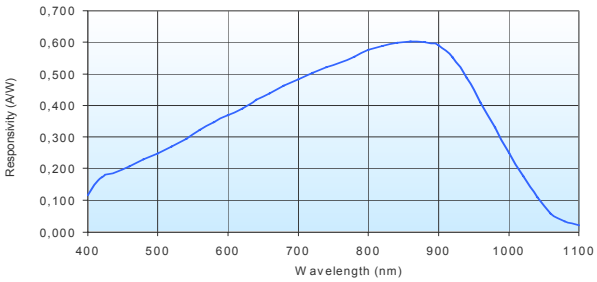
Package 3a (TO5i):



Version: 02-11-08
Specification before: SSO-AD-2500-9-TO5i

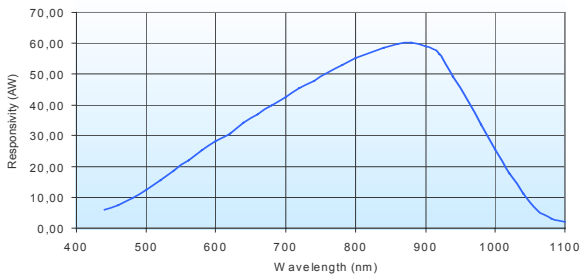
Spectral Responsivity at M=1

series - 9



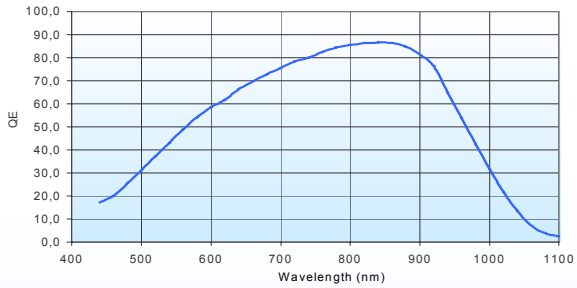
Spectral Responsivity at M=100

series - 9



Quantum Efficiency for M = 100

series - 9



$I_D = f(U_R/U_{BR})$

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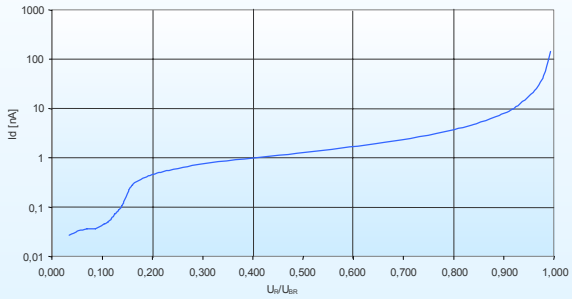

$M = (U_R/U_{BR})$

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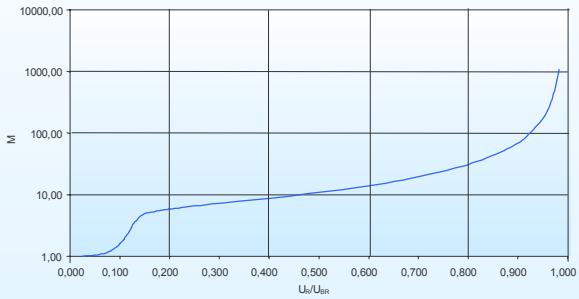
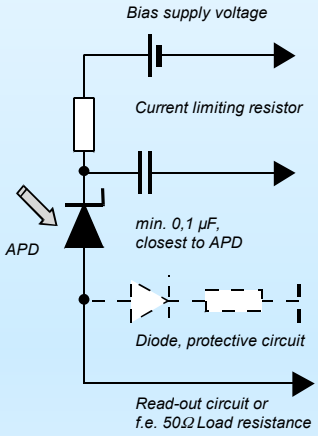


Maximum Ratings:

- max. electrical power dissipation — 100 mW at 22°C
- max. optical peak value, once — 200 mW for 1 s
- max. continous optical operation — I_{Ph} (DC) ≤ 250 µA
  ≤ 1 mA for signal 50 µs "on" / 1 ms "off"
- ($P_{electr.} = P_{opt.} * S_{abs} * M * U_R$)

Application Hints:

- Current should be limited by a protecting resistor or current limiting - IC inside the power supply.
- Use of low noise read-out - IC.
- For high gain applications bias voltage should be temperature compensated.
- For low light level applications, blocking of ambient light should be used.



Handling Precautions:

- Soldering temperature — 260 °C for max. 10 s. The device must be protected against solder flux vapour!
- min. Pin - length — 2 mm
- ESD - protection — Standard precautionary measures are sufficient.
- Storage — Store devices in conductive foam.
- Avoid skin contact with window!
- Clean window with Ethyl alcohol if necessary.
- Do not scratch or abrade window.

Germany :

Silicon Sensor GmbH

Ostendstr. 1
12459 Berlin
Germany
Phone: +49 (0)30-63 99 23 10
Fax: +49 (0)30-63 99 23 33
E-Mail: sales@silicon-sensor.de

International Sales:

Silicon Sensor GmbH
U.K. Office
35 Orchard Close
Stanstead Abbotts, Ware
Hertfordshire SG 12 8 AH
Phone/Fax: +44 (0)1920/87 20 90
E-Mail: pnsilsensuk@btconnect.com
p.nash@silicon-sensor.com

U.S.A. :

Pacific Silicon Sensor, Inc.

5700 Corsa Avenue #105
Westlake Village
CA 91362 USA
Phone: +1-818-706-3400
Fax: +1-818-889-7053
E-Mail: sales@pacific-sensor.com