

AD800-8 TO5i

High Speed/high Gain Avalanche Photodiode

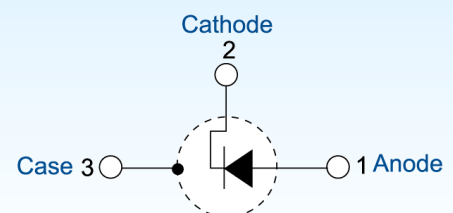
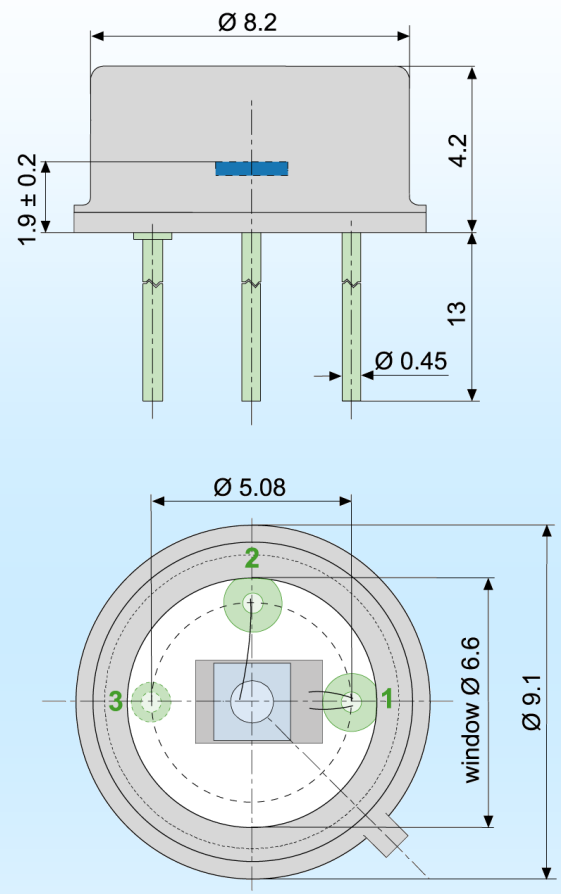
Special characteristics:

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

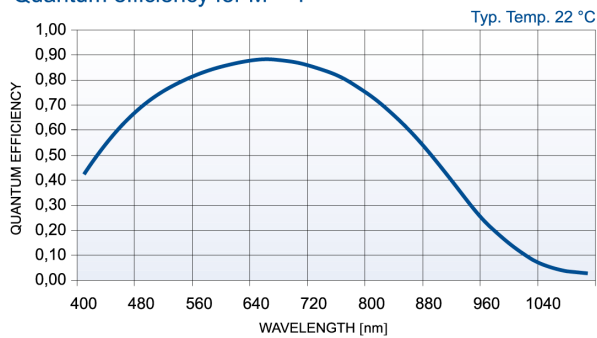


Parameters:	AD800-8 TO5i
Active Area	0,5mm ² Ø 0,8mm
Dimensional outline	
window material	clear glass
operating temperatur	-40 ..+100 °C
storage temperatur	-55 ..+125 °C
Spectral Responsivity (A/W) (800 nm, at M=100)	min. 45 typ. 50
Dark current (nA) (at M=100)	typ. 2 max. 6
Breakdown voltage (V) at I _D = 2 μA (V)	typ. 120 - 190 90 - 240
Capacitance (pF) at M=100	5
Rise time (ns) at M=100	0,7
Temp. coefficient U _{br} (V/K)	typ. 0,45 min. 0,35 max. 0,55
Cut-off frequency (GHz) (-3 dB)	0,5
N.E.P (w/Hz ^{1/2}) (at M=100, 800 nm)	4*10 ⁻¹⁴
Optimum Gain	50 - 60
Max. Gain	> 200
Excess Noise factor at M=100	2,2
Excess Noise index at M=100	0,2
Noise current at M=100 (pA/Hz ^{1/2})	typ. 3

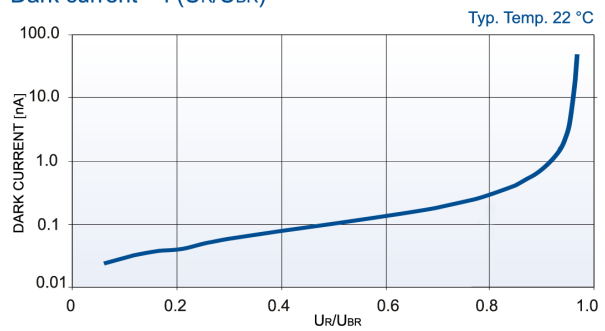
Package (TO5i):



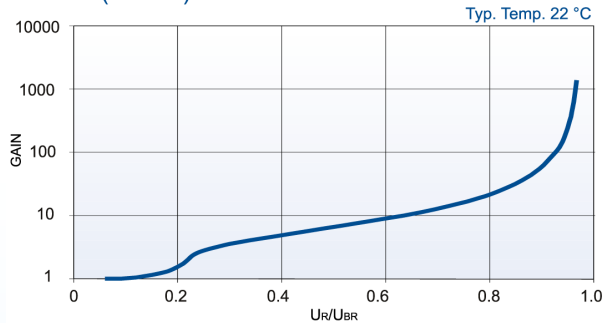
Quantum efficiency for M = 1



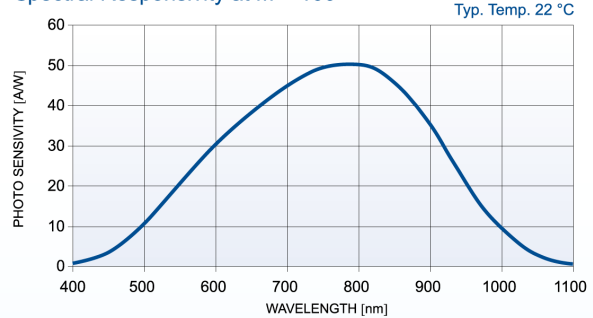
Dark current = f (U_R/U_{BR})



Gain = f (U_R/U_{BR})



Spectral Responsivity at M = 100



Disclaimer: Due to our policy of continued development, specifications are subject to change without notice.

measurement conditions:

Setup of photo current 10 nA at M = 1 and irradiation by a LED (680 nm, 60 nm bandwidth).
Increase the photo current up to 1 μA, (M = 100) by internal multiplication due to an increasing bias voltage.

Maximum Ratings:

max. electrical power dissipation: 100mW at 22 °C
max. optical peak value, once: 200mW for 1s
max. continuous optical operation: I_{ph} (DC) ≤ 250 μA
≤ 1 mA for signal 50μs 'on' / 1ms '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.

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