

SSO-ADH-230-TO8P

APD with Peltier-cooler

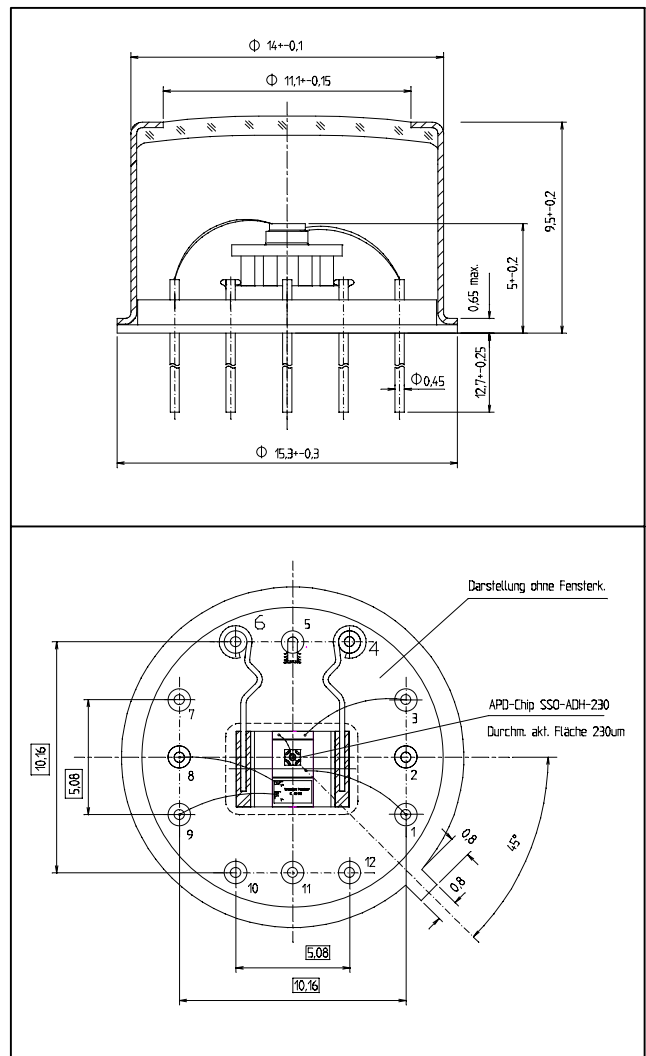
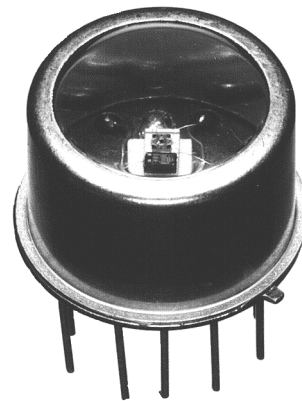
Specialities:

The SSO - AD - 230 - TO8P is a thermoelectrically cooled APD with chip specially selected for low dark current and low "dark count rate". Applications include photon counting and other low light level sensing.

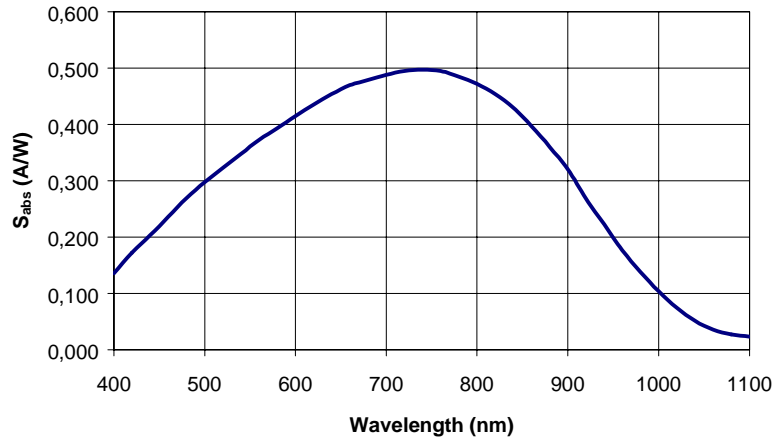
active area	0,042 mm ² Ø 230 µm ¹⁾
dark current selection (M=100)	typ. 200 pA max. 500 pA
Total capacitance (M=100)	typ. 2 pF
Break down voltage U _{BR}	typ. 160 V ²⁾
Temperature coefficient of U _{BR}	typ. 0,35 %/°C
Spectral responsivity at 780 nm	min. 0,40 A/W typ. 0,45 A/W
Cut-off frequency (-3dB)	typ. 1,4 GHz
Rise time	typ. 250 ps ³⁾
Optimum gain (conventional AC - mode)	40 ... 60
"Excess Noise" factor (M=40, no cooling)	typ. 2,2
N.E.P. (M=100, 880 nm, no cooling)	typ. 1 * 10 ⁻¹⁴ W/Hz ^{1/2}
Single stage Peltier-cooler ΔT (in ca. 20 sec)	typ. 50 K min. 45 K
Peltier parameters	I _{max} = 0,8 A V _{max} = 0,97 V
Temperature sensor AD - 590	1 mV / K ⁴⁾
Package standard TO8 with 12 pins	fully hermetic
pin 1	Anode APD
pin 3	Cathode APD
pin 4	Peltier-cooler -
pin 5	Package
pin 6	Peltier-cooler +
pin 8	V+ T-Sensor
pin 9	V- T-Sensor
pin 2, 7, 10, 11, 12	n.c.

Measuring conditions:

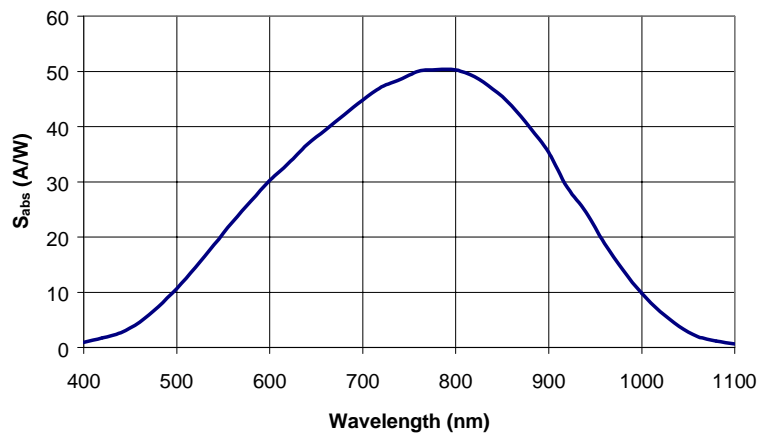
- also available with Chip SSO - AD - 500
- Gain = 100, photo current 100 nA (I_{p0} = 1 nA)
Setup of Break down voltage between
80 V and 350 V is possible during processing
- 10 - 90 %, Gain = 100, 50 Ω, λ = 810 nm
- at series resistance of 1 kΩ and bias voltage of 5 V



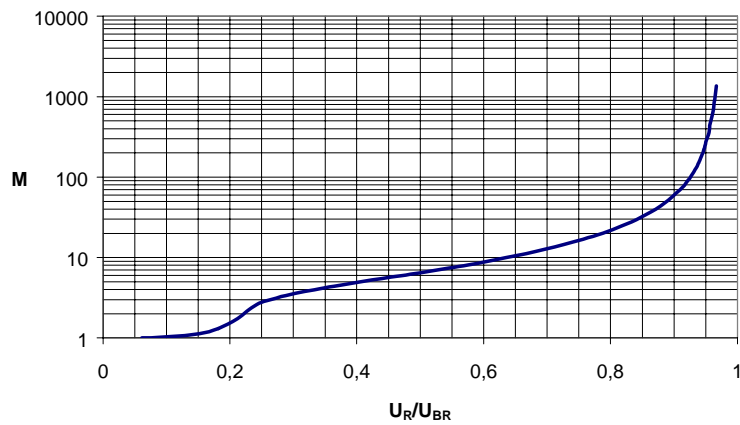
SSO - AD - serie
Spectral Responsivity at M=1



SSO - AD - serie
Spectral Responsivity at M=100



SSO - AD - serie (versions 500, 800, 1100, 2500)
gain = $f(U_R/U_{BR})$ at $\lambda=880$ nm



C_J (pF)= U_R (AD230)

