

# AG32S

UVB sensitive AlGaN based UV photodiode  $A = 0.076 \text{ mm}^2$



## General Features



### Properties of the AG32S UV photodiode

- UVB sensitive photodiode
- Active Area  $A = 0.076 \text{ mm}^2$
- TO18 metal housing
- $10 \text{ mW/cm}^2$  peak radiation results in a current of approx. 700 nA

### About the material (Aluminium)Gallium Nitride (Al)GaN

(Al)GaN is a new semiconductor material for visible blind UV photodiodes. By modification of the Al – to - Ga stoichiometry it is possible to produce photodiodes with different spectral behaviour. This allows to offer Photodiodes sensible for broad band UV (UVA+UVB+UVC), for UVB-only and for UVC only without using a filter.

## Specifications

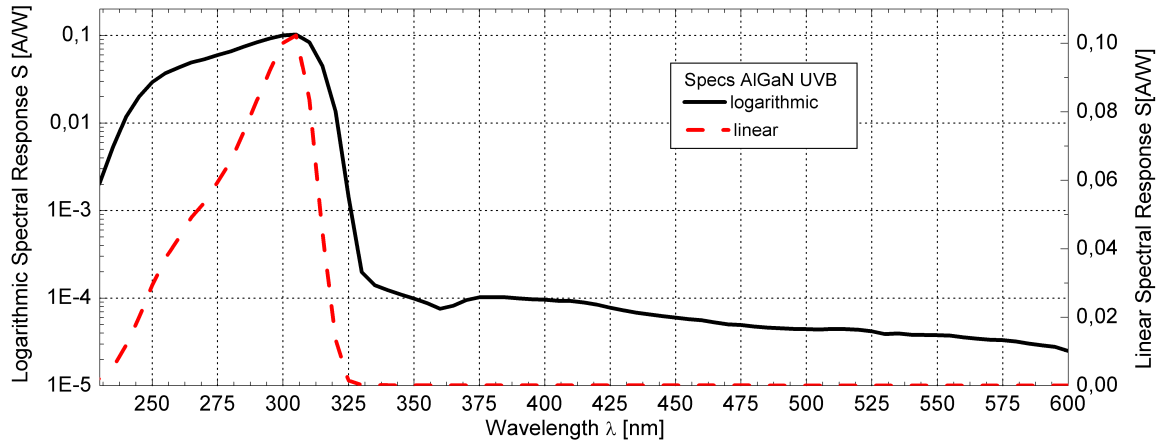
Parameter	Symbol	Value	Unit
<b>Maximum Ratings</b>			
Operating Temperature Range	$T_{\text{opt}}$	-25 ... +70	°C
Storage Temperature Range	$T_{\text{stor}}$	0 ... +100	°C
Soldering Temperature (3s)	$T_{\text{sold}}$	260	°C
Reverse voltage	$V_{\text{Rmax}}$	5	V
<b>General Characteristics (T=25°C)</b>			
Active Area	A	0.076	$\text{mm}^2$
Dark current (1V reverse bias)	$I_{\text{d}}$	100	fA
Capacitance	C	24	pF
Short circuit (10mW/cm <sup>2</sup> at peak)	$I_0$	700	nA
Temperature coefficient	Tc	<-0.3	%/K
<b>Spectral Characteristics (T=25°C)</b>			
Max. spectral sensitivity	$S_{\text{max}}$	0.130	$\text{AW}^{-1}$
Wavelength of max. spectral sens.	$\lambda_{\text{max}}$	310	nm
Sensitivity range ( $S=0,1 \cdot S_{\text{max}}$ )	-	240 ... 320	nm
Visible blindness ( $S_{\text{max}} / S_{>400\text{nm}}$ )	VB	$10^3$	-

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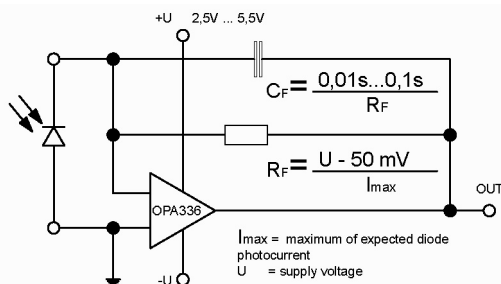
UVB sensitive AlGaN based UV photodiode  $A = 0.076 \text{ mm}^2$



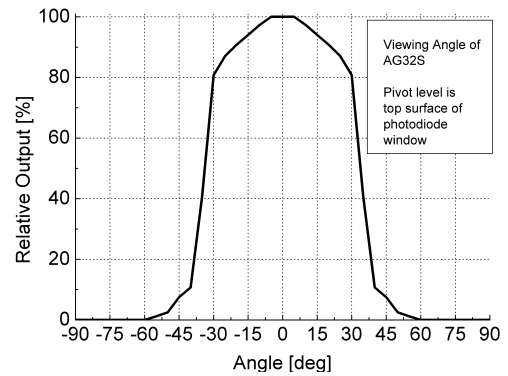
## Spectral Response



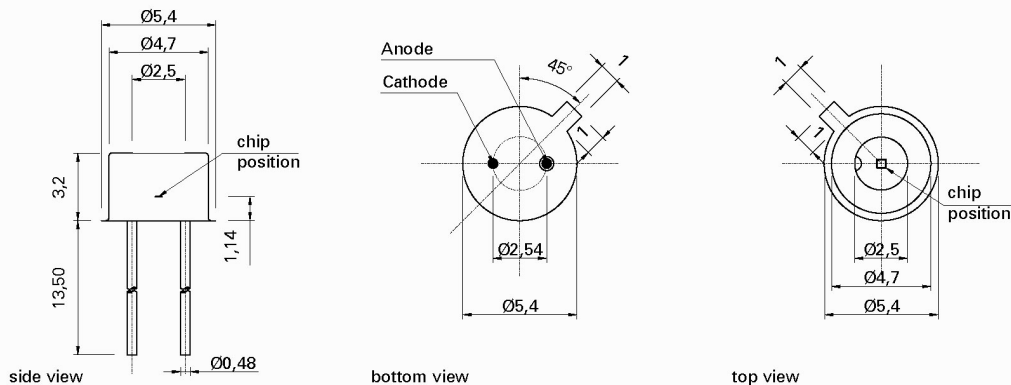
## Circuit



## Viewing Angle



## Drawing

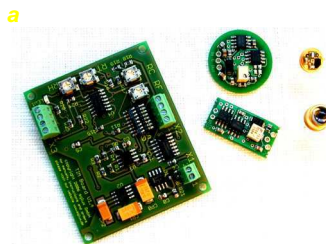


### Application Note

For correct reading of the photodiode, the current (and NOT the voltage) must be analysed. This requires a short circuiting of the photodiode. Usual approaches are using a **Picoamperemeter** such as Keithley 617 or a **transimpedance amplifier** circuit as shown on page 2 of this datasheet. Please contact us in case of questions.

The below listed modules help you to get the best measurement information from your photodiode.

### Internal & external Photodiode Amplifiers



- Stable and reliable photodiode amplification
- TOCON-Series = photodiodes with integrated amplifier
- BOARD-Series = external photodiode amplifiers
- further information:  
[www.scitec.uk.com/uvphotodiodes/tocon\\_nano](http://www.scitec.uk.com/uvphotodiodes/tocon_nano)  
or [www.scitec.uk.com/uvphotodiodes/amps](http://www.scitec.uk.com/uvphotodiodes/amps)

### UV probes with built in amplifier



- Different housings e.g. with cosine response, water pressure proof or Sapphire windows
- Different electronic outputs available (voltage, current, USB)
- Further information:  
[www.scitec.uk.com/uvphotodiodes/uv\\_probes](http://www.scitec.uk.com/uvphotodiodes/uv_probes)

### UV Intensity / Dose Monitor / Controller “SENSOR MONITOR”



- Two channel photodiode or sensor input
- Three user programmable relay outputs
- Programmable display, USB/TTY/RS232 data transmission
- Further information:  
[www.scitec.uk.com/uvphotodiodes/uv\\_controllers](http://www.scitec.uk.com/uvphotodiodes/uv_controllers)

### UV Radiation Controller “RADI KON”



- Industrial DIN rail radiation controller module
- Works with mV and nA....mA sensor output signals
- Further information: [www.scitec.uk.com/uvphotodiodes/radikon](http://www.scitec.uk.com/uvphotodiodes/radikon)