

General Features



Properties of the SG01S UV photodiode

- Broad Band UVA+UVB+UVC photodiode
- Active Area A = 0,054 mm²
- TO18 hermetically sealed metal housing
- 10mW/cm² peak radiation results a current of approx. 700nA

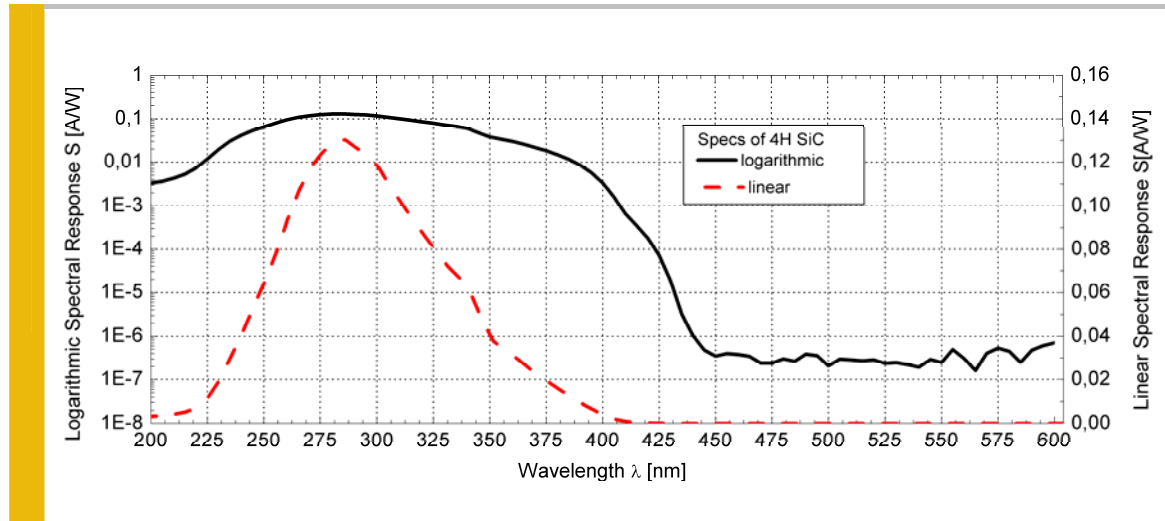
About the material Silicon Carbide (SiC)

The material SiC provides unique properties looking at visible blindness, speed and noise. A high long term radiation hardness for radiation intensities up to 1000 W/m² is given. These features make SiC the best currently available material for visible blind semiconductor UV detectors. Some SiC detectors (our HT-series) can be permanently operated at T=170°C where the temperature coefficient is only <0,1%/K. Because of the low dark current in the fA range also very low radiation intensities can be reliably measured. Please note that this needs suited amplifier circuit (please refer to page 2 and 3 of this datasheet). SiC photodiodes are available as non-filtered broad band devices or with filters e.g. providing an UVA-, UVB-, or UVC-only sensitivity or an erythema-curve compliance.

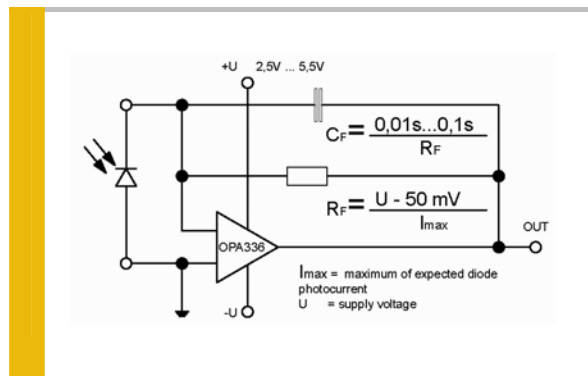
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T _{opt}	-25 ... +70	°C
Storage Temperature Range	T _{stor}	0 ... +100	°C
Soldering Temperature (3s)	T _{sold}	260	°C
Reverse voltage	V _{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,054	mm ²
Dark current (1V reverse bias)	I _d	1	fA
Capacitance	C	21	pF
Short circuit (10mW/cm ² at peak)	I _o	700	nA
Temperature coefficient	Tc	<-0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral sensitivity	S _{max}	0,130	AW ⁻¹
Wavelength of max. spectral sens.	λ _{max}	285	nm
Sensitivity range (S=0,1*S _{max})	-	210 ... 380	nm
Visible blindness (S _{max} / S _{>400nm})	VB	10 ⁵	-

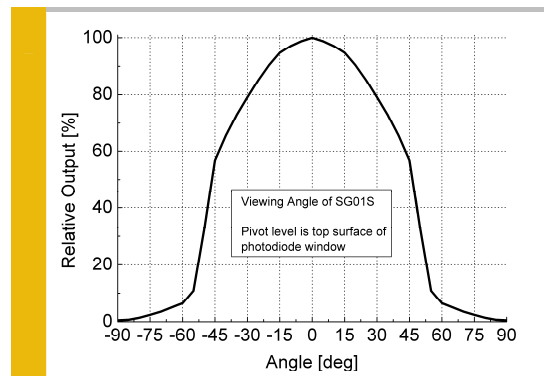
Spectral Response



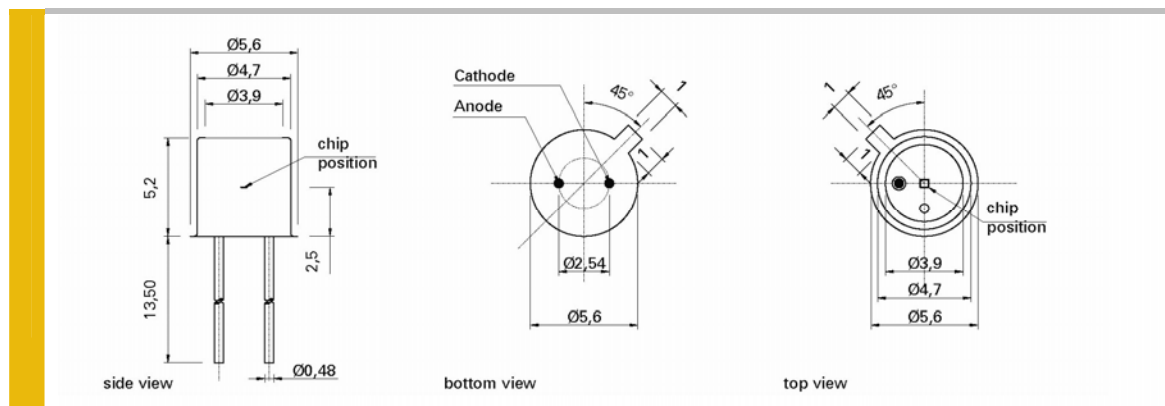
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01S-S UV photodiode

- Broad Band UVA+UVB+UVC photodiode
- Active Area A = 0,054 mm²
- TO18 hermetically sealed metal housing, **short cap**
- 10mW/cm² peak radiation results a current of approx. 700nA

About the material Silicon Carbide (SiC)

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Specifications

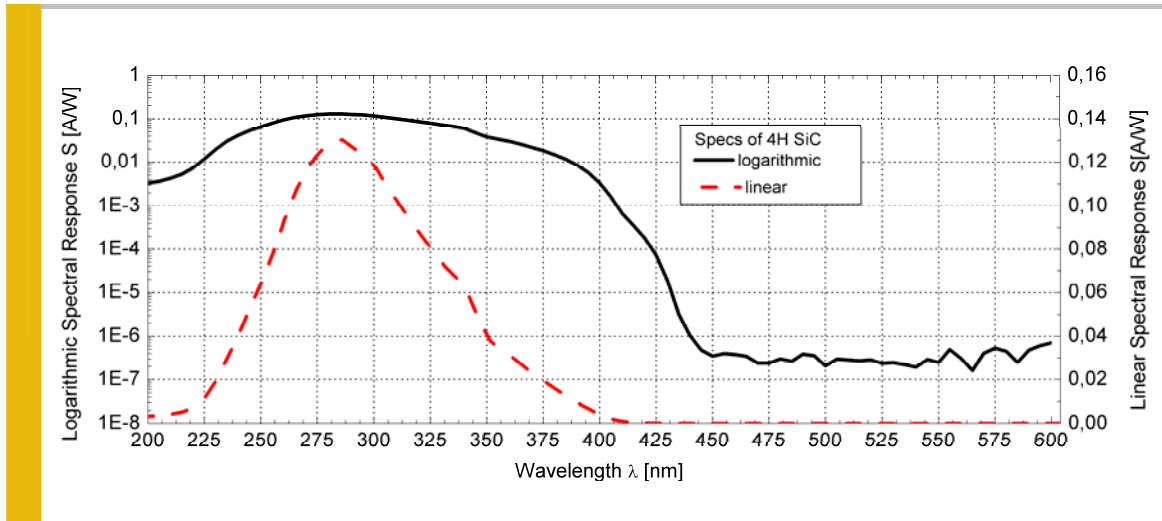
Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T _{opt}	-25 ... +70	°C
Storage Temperature Range	T _{stor}	0 ... +100	°C
Soldering Temperature (3s)	T _{sold}	260	°C
Reverse voltage	V _{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,054	mm ²
Dark current (1V reverse bias)	I _d	1	fA
Capacitance	C	21	pF
Short circuit (10mW/cm ² at peak)	I ₀	700	nA
Temperature coefficient	Tc	<-0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral sensitivity	S _{max}	0,130	AW ⁻¹
Wavelength of max. spectral sens.	λ _{max}	285	nm
Sensitivity range (S=0,1*S _{max})	-	210 ... 380	nm
Visible blindness (S _{max} / S _{>400nm})	VB	10 ⁵	-

SG01S-S

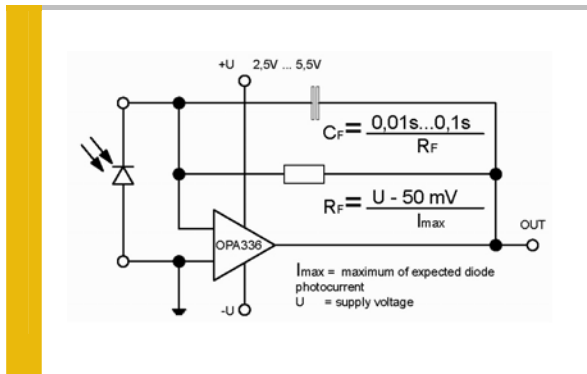
Broad Band SiC based UV photodiode $A = 0,054\text{mm}^2$



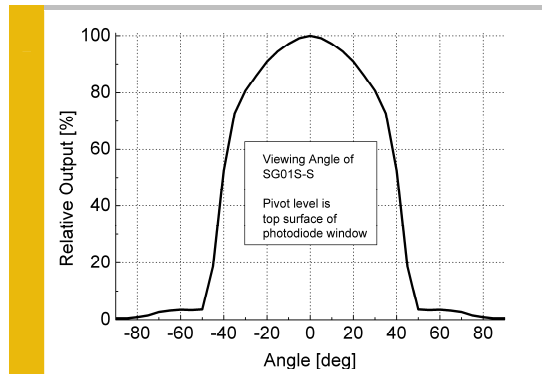
Spectral Response



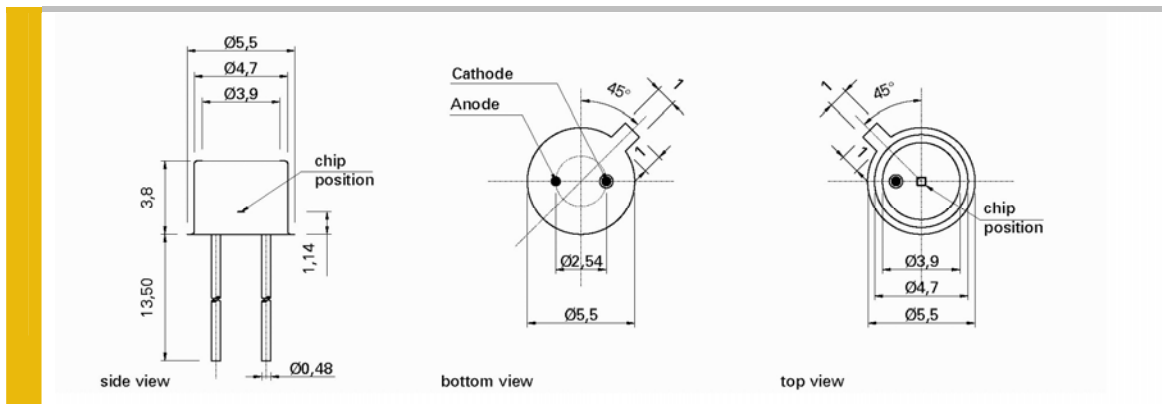
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01S-C18 UV photodiode

- UVC-only sensitivity according to DVGW W294
- Active Area $A = 0,054\text{ mm}^2$
- TO18 hermetically sealed housing
- 10mW/cm^2 radiation at 254nm results a current of approx. 350nA

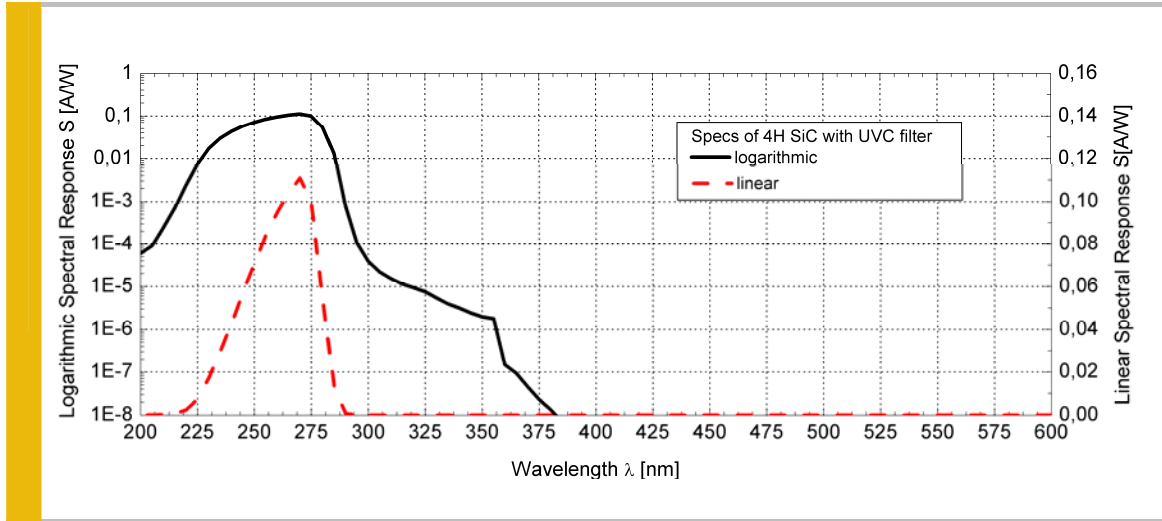
About the material Silicon Carbide (SiC)

The material SiC provides unique properties looking at visible blindness, speed and noise. A high long term radiation hardness for radiation intensities up to 1000 W/m^2 is given. These features make SiC the best currently available material for visible blind semiconductor UV detectors. Some SiC detectors (our HT-series) can be permanently operated at $T=170^\circ\text{C}$ where the temperature coefficient is only $<0,1\%/K$. Because of the low dark current in the fA range also very low radiation intensities can be reliably measured. Please note that this needs suited amplifier circuit (please refer to page 2 and 3 of this datasheet). SiC photodiodes are available as non-filtered broad band devices or with filters e.g. providing an UVA-, UVB-, or UVC-only sensitivity or an erythema-curve compliance.

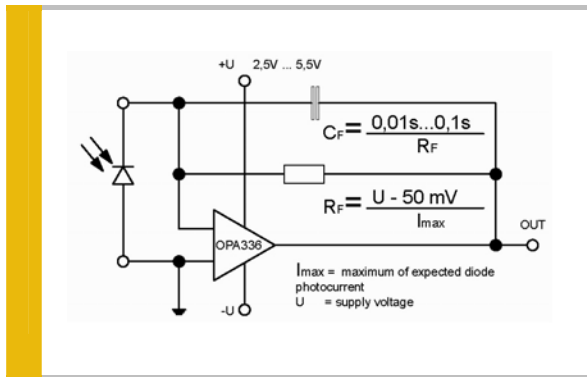
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T_{opt}	-25 ... +70	$^\circ\text{C}$
Storage Temperature Range	T_{stor}	0 ... +100	$^\circ\text{C}$
Soldering Temperature (3s)	T_{sold}	260	$^\circ\text{C}$
Reverse voltage	V_{Rmax}	20	V
General Characteristics ($T=25^\circ\text{C}$)			
Active Area	A	0,054	mm^2
Dark current (1V reverse bias)	I_{d}	1	fA
Capacitance	C	21	pF
Short circuit (10mW/cm^2 at 254nm)	I_0	350	nA
Temperature coefficient	Tc	$<-0,1$	$\%/K$
Spectral Characteristics ($T=25^\circ\text{C}$)			
Max. spectral sensitivity	S_{max}	0,110	AW^{-1}
Wavelength of max. spectral sens.	λ_{max}	270	nm
Sensitivity range ($S=0,1 \cdot S_{\text{max}}$)	-	230 ... 285	nm
Visible blindness ($S_{\text{max}} / S_{>400\text{nm}}$)	VB	10^5	-

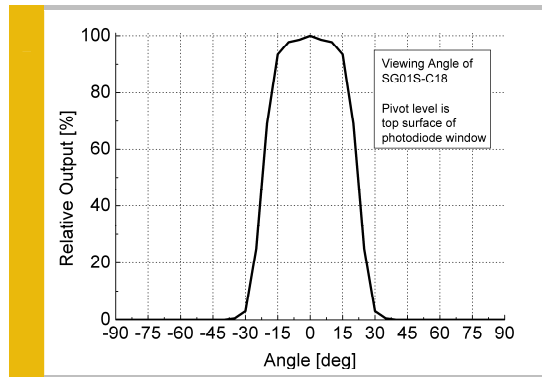
Spectral Response



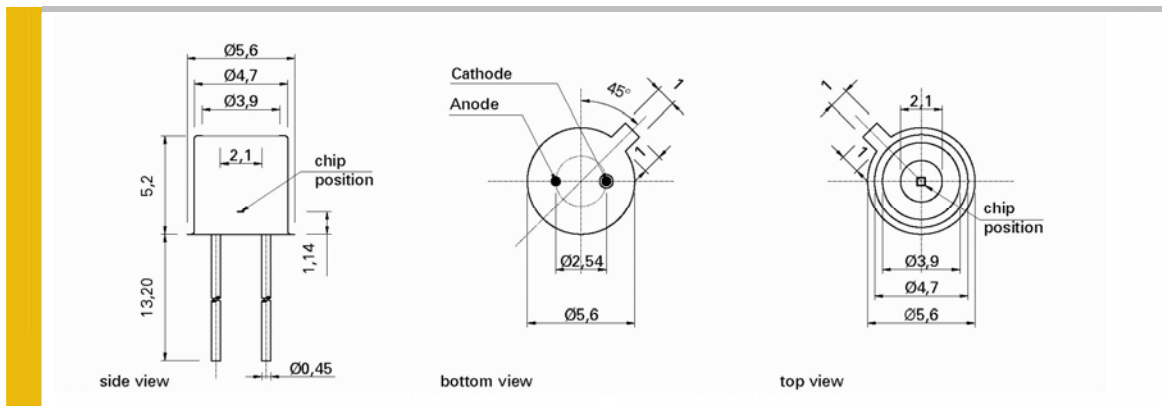
Circuit



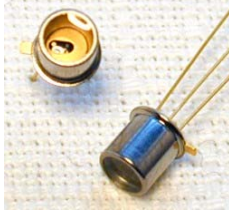
Viewing Angle



Drawing



General Features



Properties of the SG01S-ISO UV photodiode

- Broad Band UVA+UVB+UVC photodiode
- Active Area A = 0,054 mm²
- TO18 hermetically sealed housing, both pins isolated & in a row
- 10mW/cm² peak radiation results a current of approx. 700nA

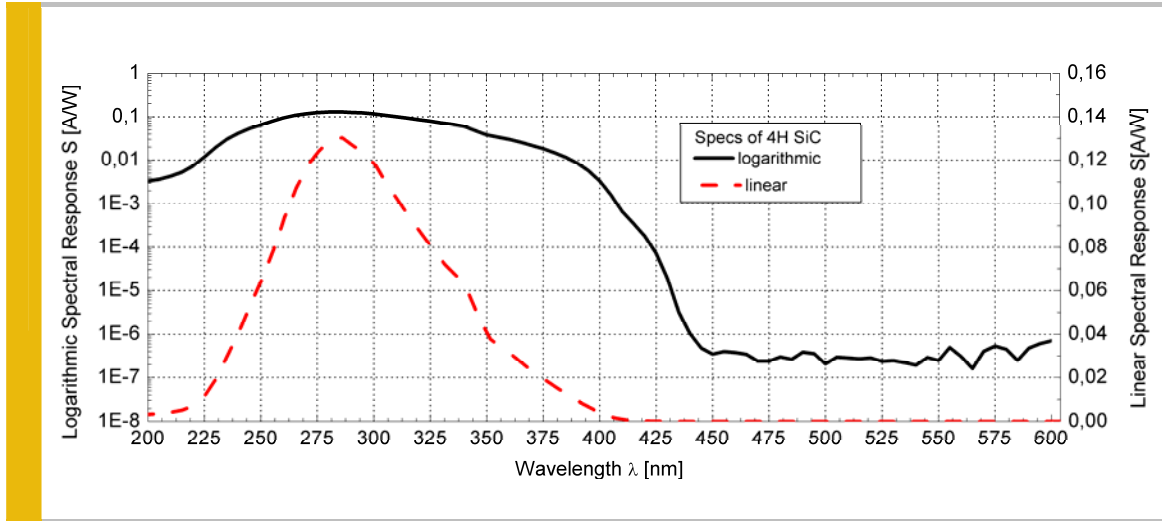
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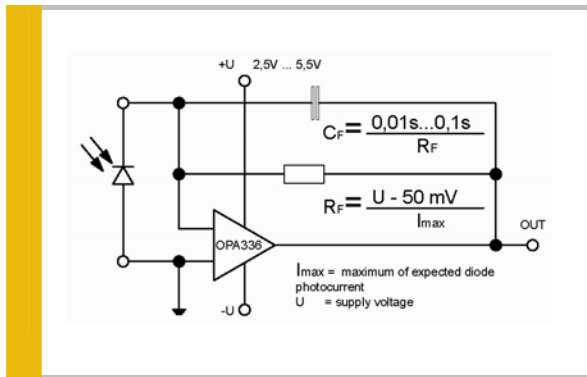
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T _{opt}	-25 ... +70	°C
Storage Temperature Range	T _{stor}	0 ... +100	°C
Soldering Temperature (3s)	T _{sold}	260	°C
Reverse voltage	V _{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,054	mm ²
Dark current (1V reverse bias)	I _d	1	fA
Capacitance	C	21	pF
Short circuit (10mW/cm ² at peak)	I ₀	700	nA
Temperature coefficient	Tc	<-0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral sensitivity	S _{max}	0,130	AW ⁻¹
Wavelength of max. spectral sens.	λ _{max}	285	nm
Sensitivity range (S=0,1*S _{max})	-	210 ... 380	nm
Visible blindness (S _{max} / S _{>400nm})	VB	10 ⁵	-

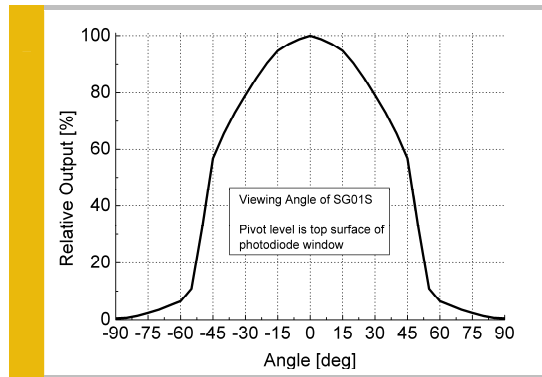
Spectral Response



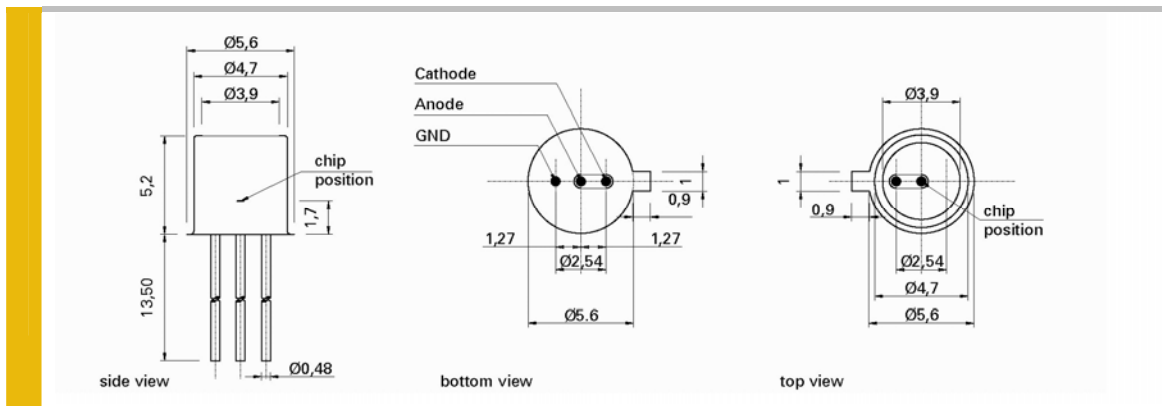
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01S-ISO90 UV photodiode

- Broad Band UVA+UVB+UVC photodiode
- Active Area A = 0,054 mm²
- TO18 herm. sealed housing, both pins isolated & in a circle
- 10mW/cm² peak radiation results a current of approx. 700nA

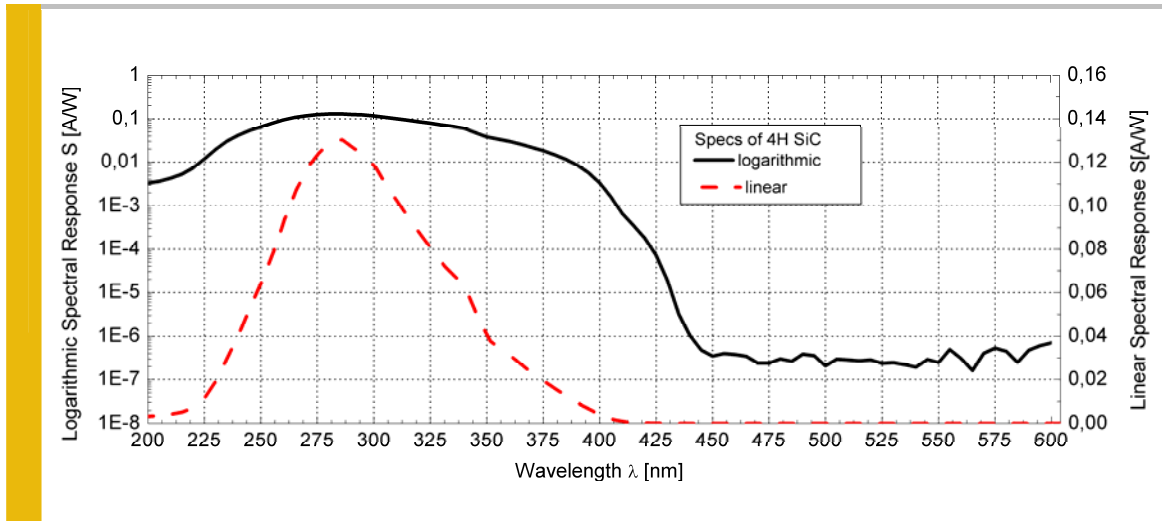
About the material Silicon Carbide (SiC)

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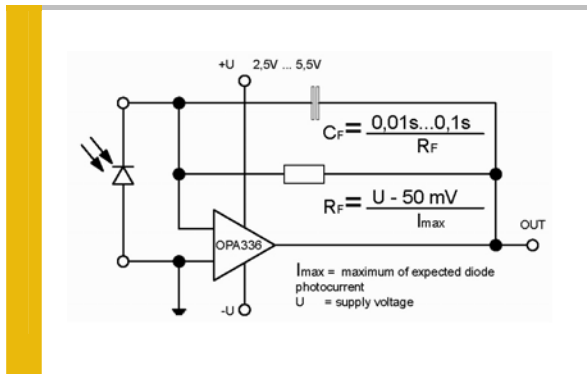
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T _{opt}	-25 ... +70	°C
Storage Temperature Range	T _{stor}	0 ... +100	°C
Soldering Temperature (3s)	T _{sold}	260	°C
Reverse voltage	V _{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,054	mm ²
Dark current (1V reverse bias)	I _d	1	fA
Capacitance	C	21	pF
Short circuit (10mW/cm ² at peak)	I ₀	700	nA
Temperature coefficient	Tc	<-0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral sensitivity	S _{max}	0,130	AW ⁻¹
Wavelength of max. spectral sens.	λ _{max}	285	nm
Sensitivity range (S=0,1*S _{max})	-	210 ... 380	nm
Visible blindness (S _{max} / S _{>400nm})	VB	10 ⁵	-

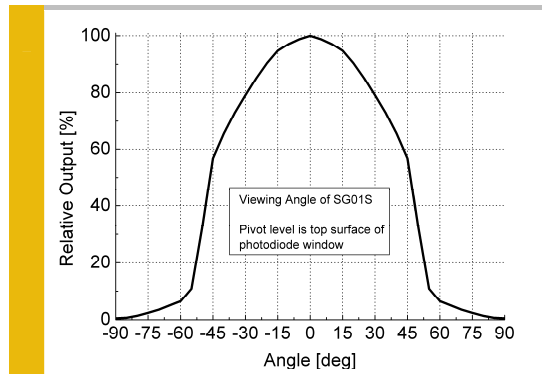
Spectral Response



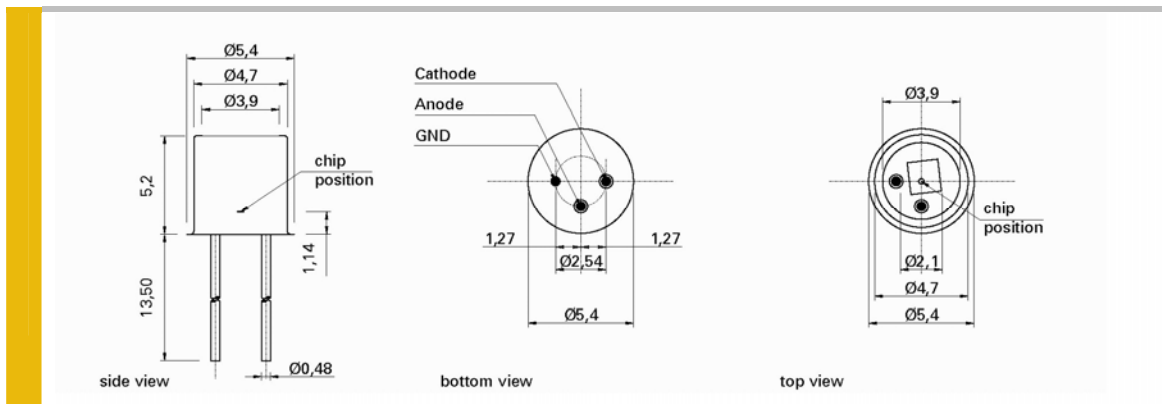
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01S-HT UV photodiode

- Operating temperatures up to 170°C
- Active Area A = 0,054 mm²
- TO18 hermetically sealed metal housing
- 10mW/cm² peak radiation results a current of approx. 700nA

About the material Silicon Carbide (SiC)

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Specifications

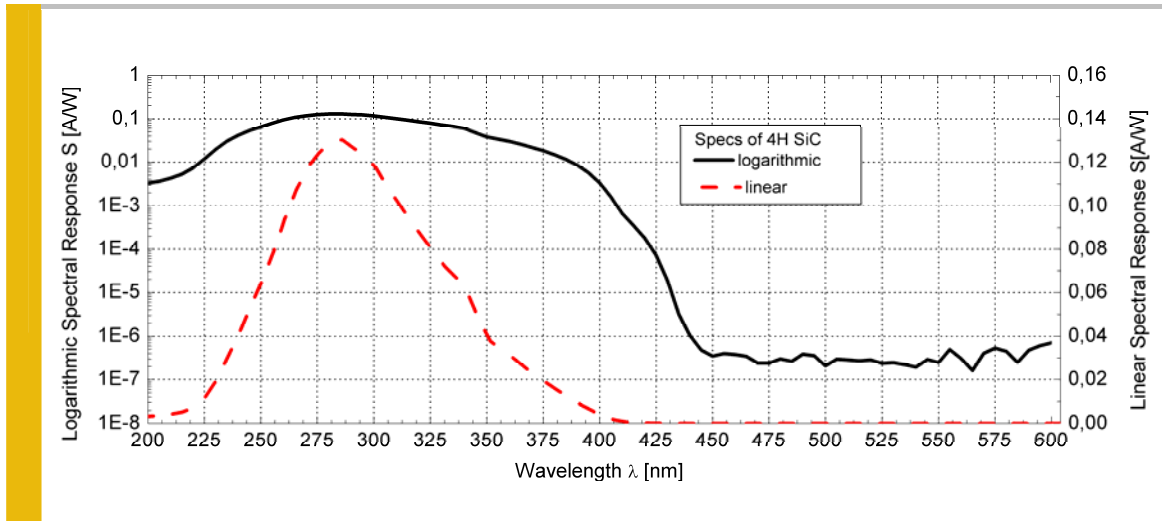
Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T_{opt}	-25 ... +170	°C
Storage Temperature Range	T_{stor}	0 ... +170	°C
Soldering Temperature (3s)	T_{sold}	260	°C
Reverse voltage	V_{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,054	mm ²
Dark current (1V reverse bias)	I_d	1	fA
Capacitance	C	21	pF
Short circuit (10mW/cm ² at peak)	I_0	700	nA
Temperature coefficient	Tc	<-0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral sensitivity	S_{max}	0,130	AW ⁻¹
Wavelength of max. spectral sens.	λ_{max}	285	nm
Sensitivity range (S=0,1*S _{max})	-	210 ... 380	nm
Visible blindness (S _{max} / S _{>400nm})	VB	10 ⁵	-

SG01S-HT

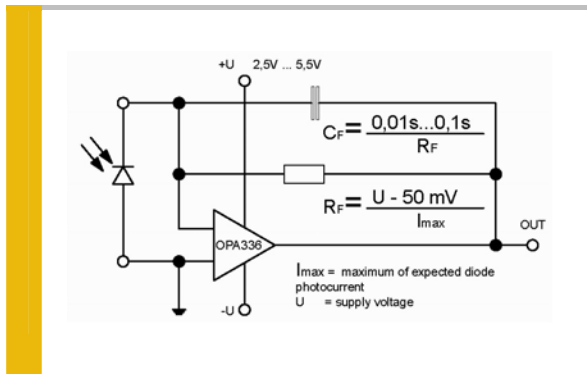
High Temperature SiC based UV photodiode A = 0,054mm²



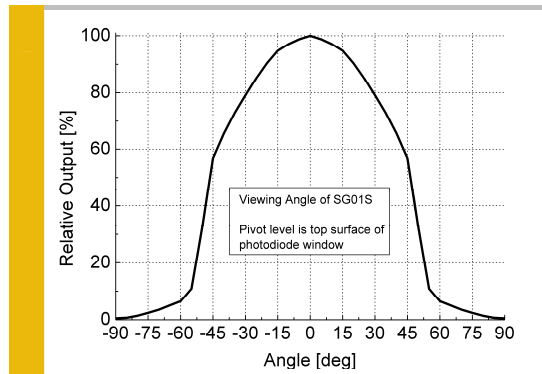
Spectral Response



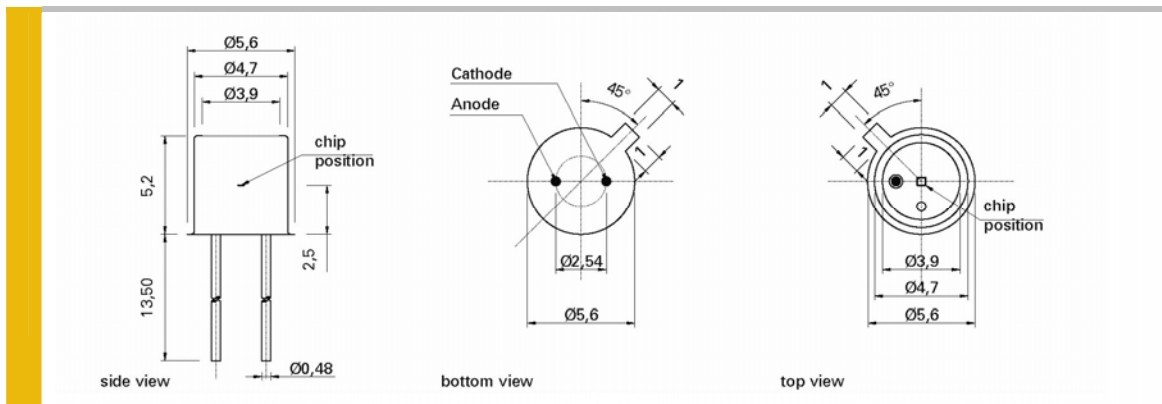
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01S-5 UV photodiode

- Broad Band UVA+UVB+UVC photodiode
- Active Area A = 0,054 mm²
- large TO39 herm, sealed metal housing, broad viewing angle
- 10mW/cm² peak radiation results a current of approx. 700nA

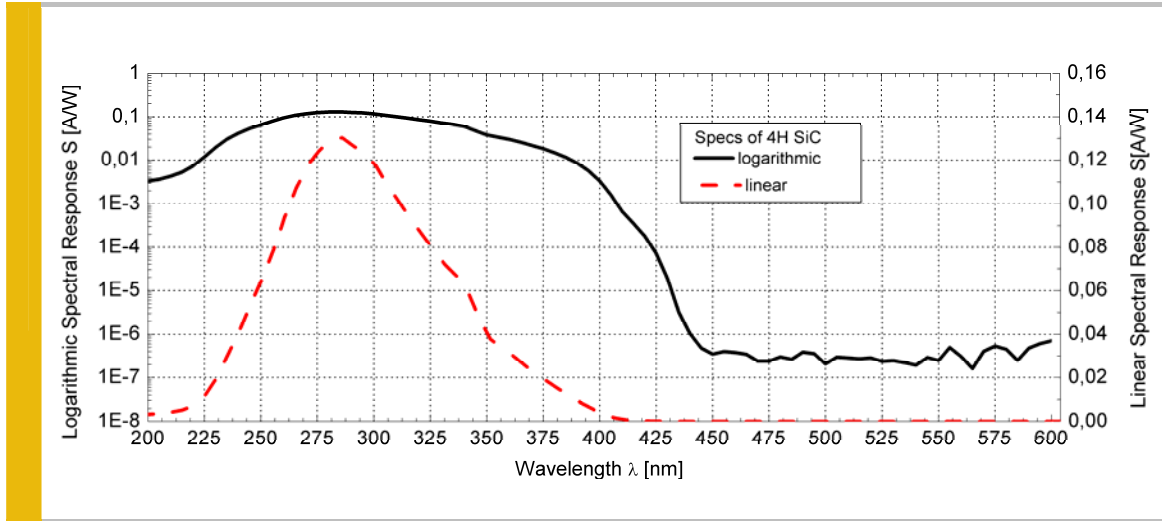
About the material Silicon Carbide (SiC)

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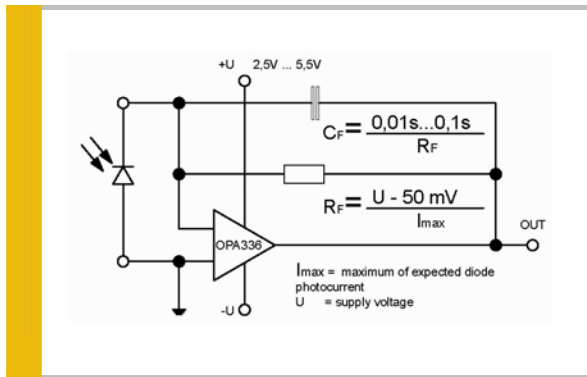
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T_{opt}	-25 ... +70	°C
Storage Temperature Range	T_{stor}	0 ... +100	°C
Soldering Temperature (3s)	T_{sold}	260	°C
Reverse voltage	V_{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,054	mm ²
Dark current (1V reverse bias)	I_d	1	fA
Capacitance	C	21	pF
Short circuit (10mW/cm ² at peak)	I_0	700	nA
Temperature coefficient	Tc	<-0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral sensitivity	S_{max}	0,130	AW ⁻¹
Wavelength of max. spectral sens.	λ_{max}	285	nm
Sensitivity range (S=0,1*S _{max})	-	210 ... 380	nm
Visible blindness (S _{max} / S _{>400nm})	VB	10 ⁵	-

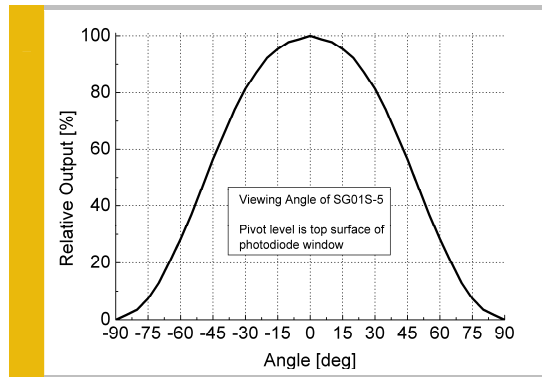
Spectral Response



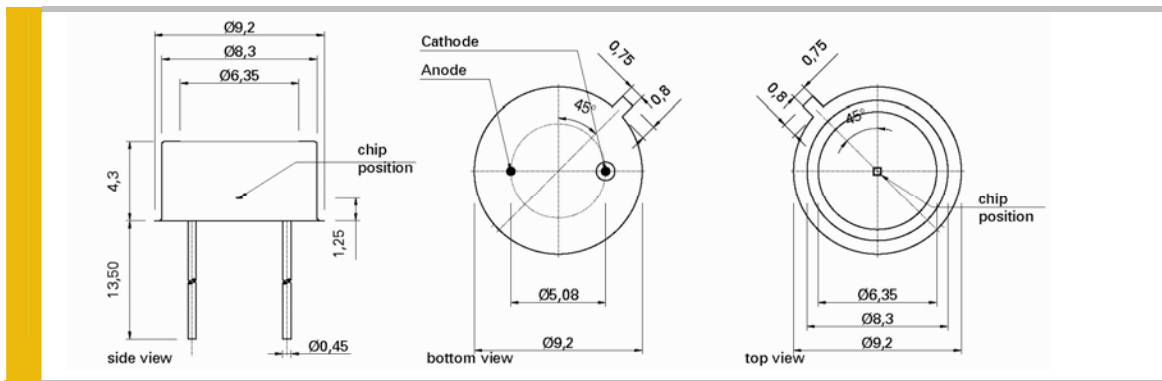
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01M UV photodiode

- Broad Band UVA+UVB+UVC photodiode
- Active Area A = 0,22 mm²
- TO18 hermetically sealed metal housing
- 10mW/cm² peak radiation results a current of approx. 2,8 µA

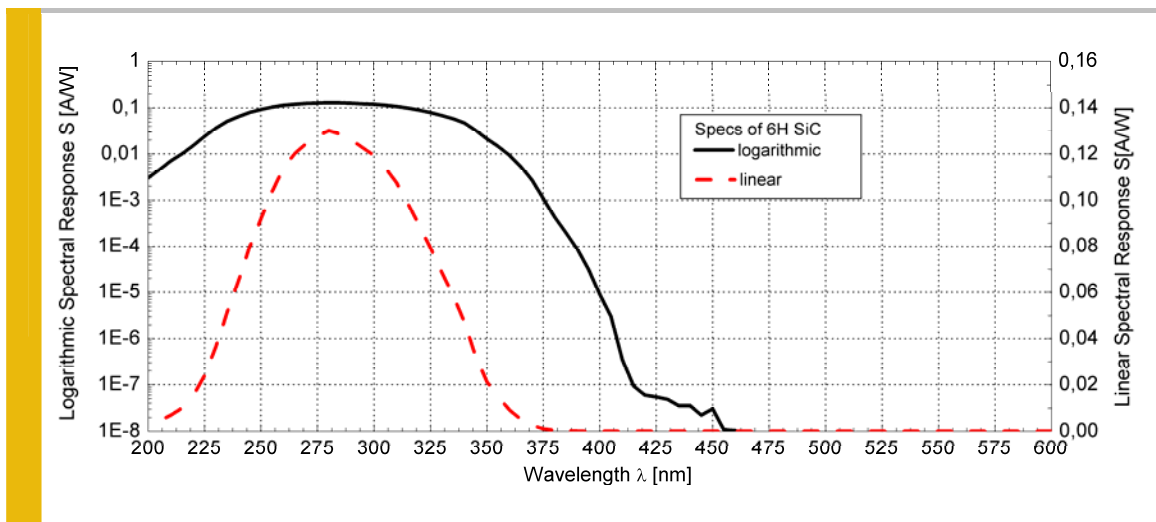
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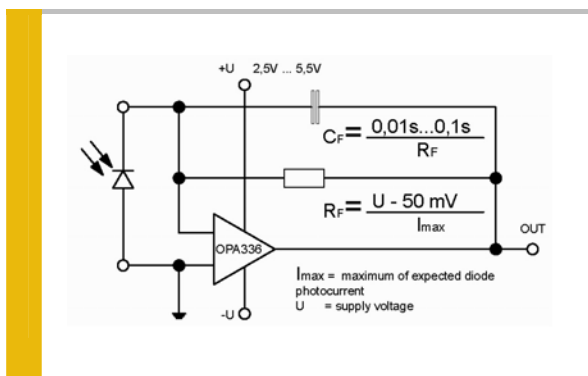
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T_{opt}	-25 ... +70	°C
Storage Temperature Range	T_{stor}	0 ... +100	°C
Soldering Temperature (3s)	T_{sold}	260	°C
Reverse voltage	V_{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,22	mm ²
Dark current (1V reverse bias)	I_d	2	fA
Capacitance	C	80	pF
Short circuit (10mW/cm ² at peak)	I_0	2800	nA
Temperature coefficient	Tc	<-0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral sensitivity	S_{max}	0,130	AW ⁻¹
Wavelength of max. spectral sens.	λ_{max}	288	nm
Sensitivity range (S=0,1*S _{max})	-	220 ... 360	nm
Visible blindness (S _{max} / S _{>400nm})	VB	10 ⁵	-

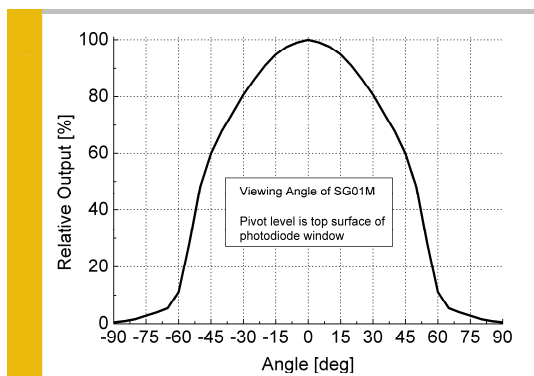
Spectral Response



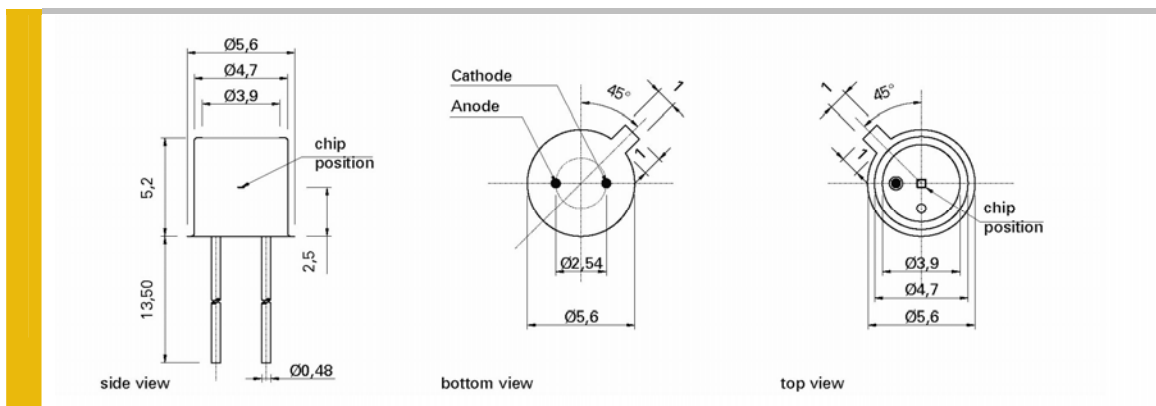
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01M-LENS UV photodiode

- Broad Band UVA+UVB+UVC diode **for very weak radiation**
- Radiation sensitive area $A = 11,00 \text{ mm}^2$
- TO5 hermetically sealed housing
- $10\mu\text{W}/\text{cm}^2$ radiation at 254nm results a current of approx. 70 nA

About the material Silicon Carbide (SiC)

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Specifications

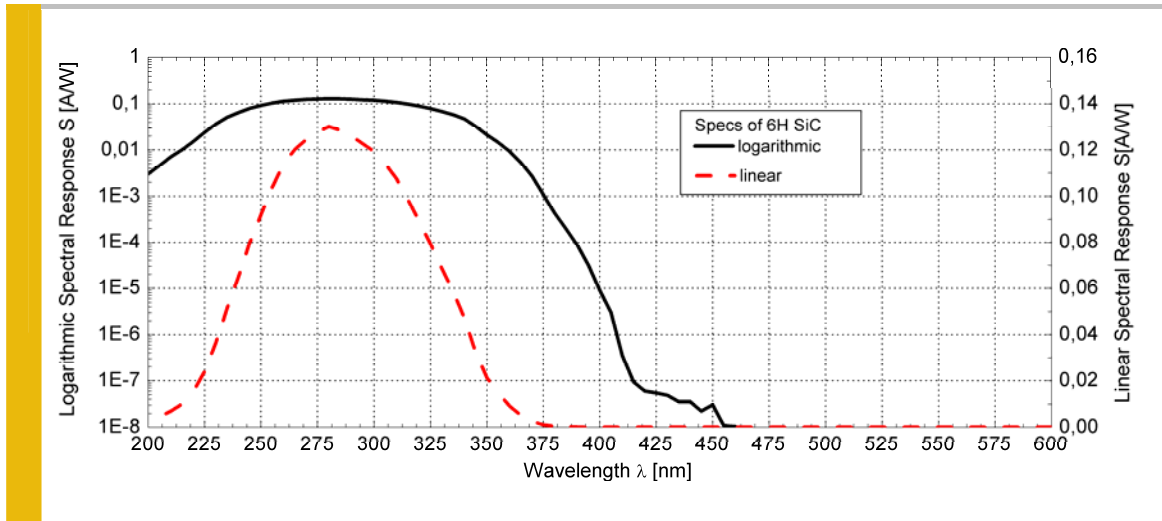
Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T_{opt}	-25 ... +70	$^\circ\text{C}$
Storage Temperature Range	T_{stor}	0 ... +100	$^\circ\text{C}$
Soldering Temperature (3s)	T_{sold}	260	$^\circ\text{C}$
Reverse voltage	V_{Rmax}	20	V
General Characteristics ($T=25^\circ\text{C}$)			
Sensitive area (chip size = $0,22 \text{ mm}^2$)	A	11,0	mm^2
Dark current (1V reverse bias)	I_{d}	2	fA
Capacitance	C	80	pF
Short circuit ($10\mu\text{W}/\text{cm}^2$ at peak)	I_{o}	70	nA
Temperature coefficient	Tc	$<-0,1$	%/K
Spectral Characteristics ($T=25^\circ\text{C}$)			
Max. spectral sensitivity	S_{max}	0,110	AW^{-1}
Wavelength of max. spectral sens.	λ_{max}	288	nm
Sensitivity range ($S=0,1*S_{\text{max}}$)	-	220 ... 360	nm
Visible blindness ($S_{\text{max}} / S_{>400\text{nm}}$)	VB	10^5	-

SG01M-LENS

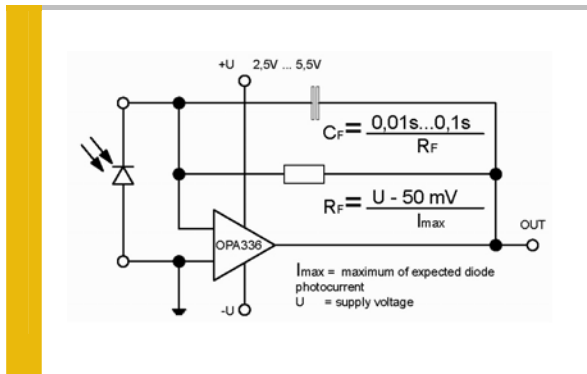
Concentrator lens SiC UV photodiode $A_{\text{virtual}} = 11,0\text{mm}^2$



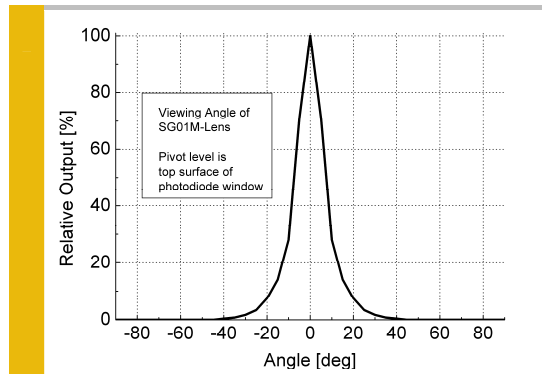
Spectral Response



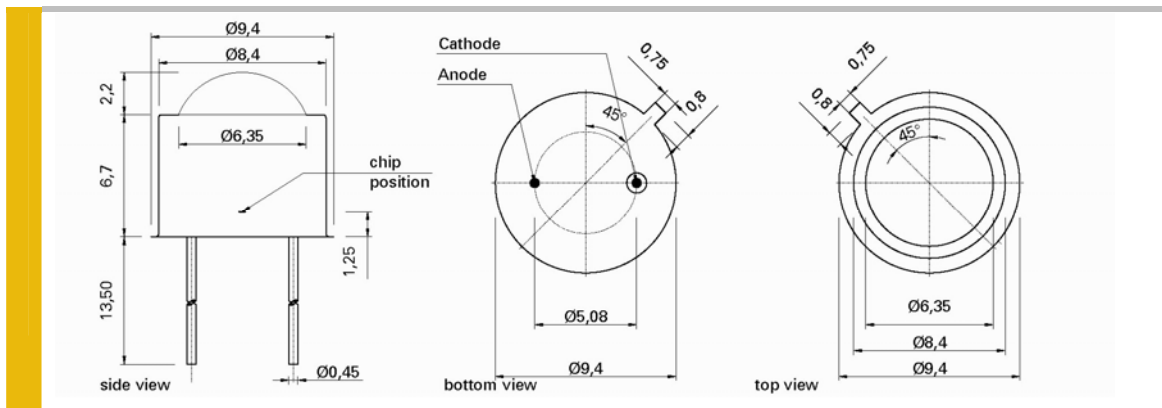
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01M-C5 UV photodiode

- UVC sensitivity according to DVGW W294
- Active Area $A = 0,22 \text{ mm}^2$
- TO5 hermetically sealed housing
- 10mW/cm^2 radiation at 254nm results a current of approx. $1,4 \mu\text{A}$

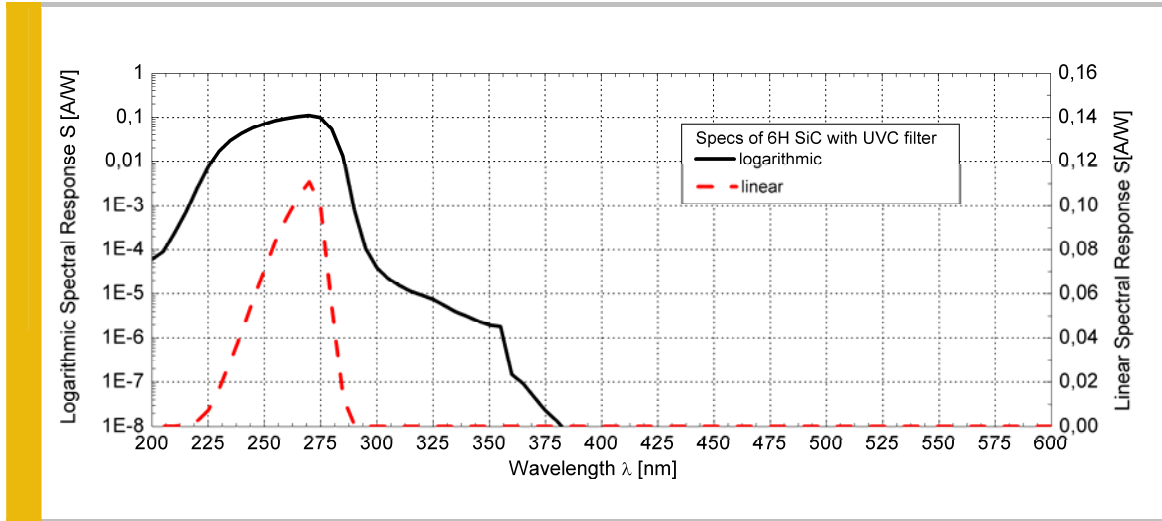
About the material Silicon Carbide (SiC)

The material SiC provides unique properties looking at visible blindness, speed and noise. A high long term radiation hardness for radiation intensities up to 1000 W/m^2 is given. These features make SiC the best currently available material for visible blind semiconductor UV detectors. Some SiC detectors (our HT-series) can be permanently operated at $T=170^\circ\text{C}$ where the temperature coefficient is only $<0,1\%/K$. Because of the low dark current in the fA range also very low radiation intensities can be reliably measured. Please note that this needs suited amplifier circuit (please refer to page 2 and 3 of this datasheet). SiC photodiodes are available as non-filtered broad band devices or with filters e.g. providing an UVA-, UVB-, or UVC-only sensitivity or an erythema-curve compliance.

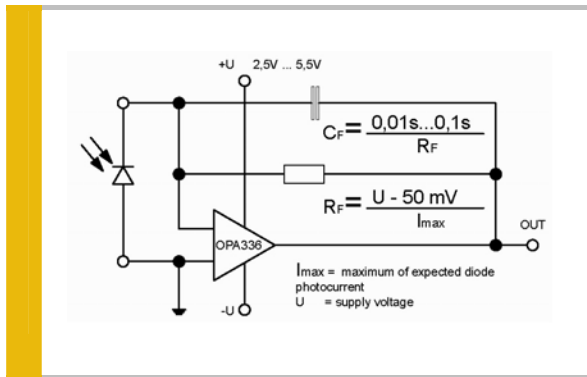
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T_{opt}	-25 ... +70	$^\circ\text{C}$
Storage Temperature Range	T_{stor}	0 ... +100	$^\circ\text{C}$
Soldering Temperature (3s)	T_{sold}	260	$^\circ\text{C}$
Reverse voltage	V_{Rmax}	20	V
General Characteristics ($T=25^\circ\text{C}$)			
Active Area	A	0,22	mm^2
Dark current (1V reverse bias)	I_{d}	2	fA
Capacitance	C	80	pF
Short circuit (10mW/cm^2 at 254nm)	I_{o}	1400	nA
Temperature coefficient	Tc	$<-0,1$	%/K
Spectral Characteristics ($T=25^\circ\text{C}$)			
Max. spectral sensitivity	S_{max}	0,110	AW^{-1}
Wavelength of max. spectral sens.	λ_{max}	270	nm
Sensitivity range ($S=0,1 * S_{\text{max}}$)	-	230 ... 285	nm
Visible blindness ($S_{\text{max}} / S_{>400\text{nm}}$)	VB	10^5	-

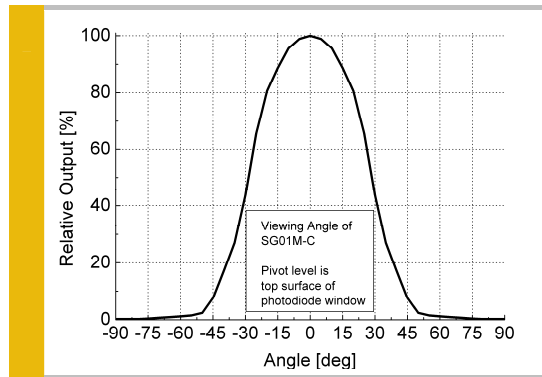
Spectral Response



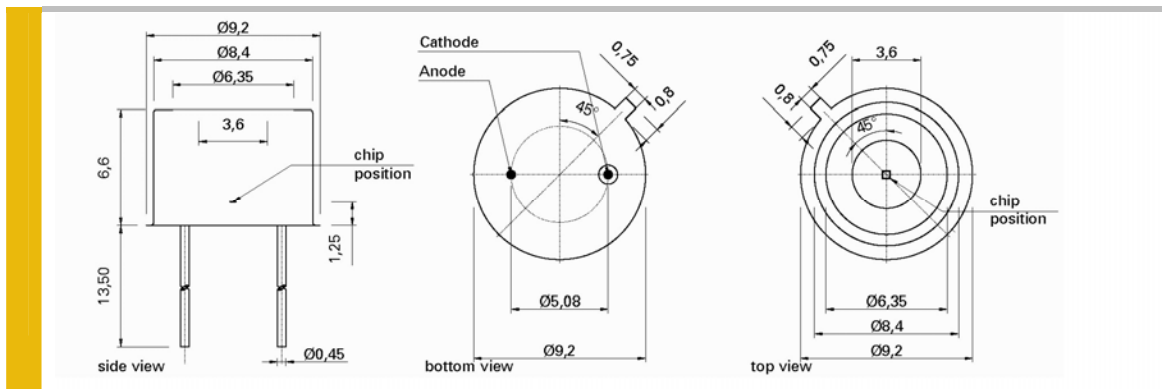
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01L-18 UV photodiode

- Broad Band UVA+UVB+UVC photodiode
- Active Area A = 0,96 mm²
- TO18 hermetically sealed metal housing
- 10μW/cm² peak radiation results a current of approx. 12nA

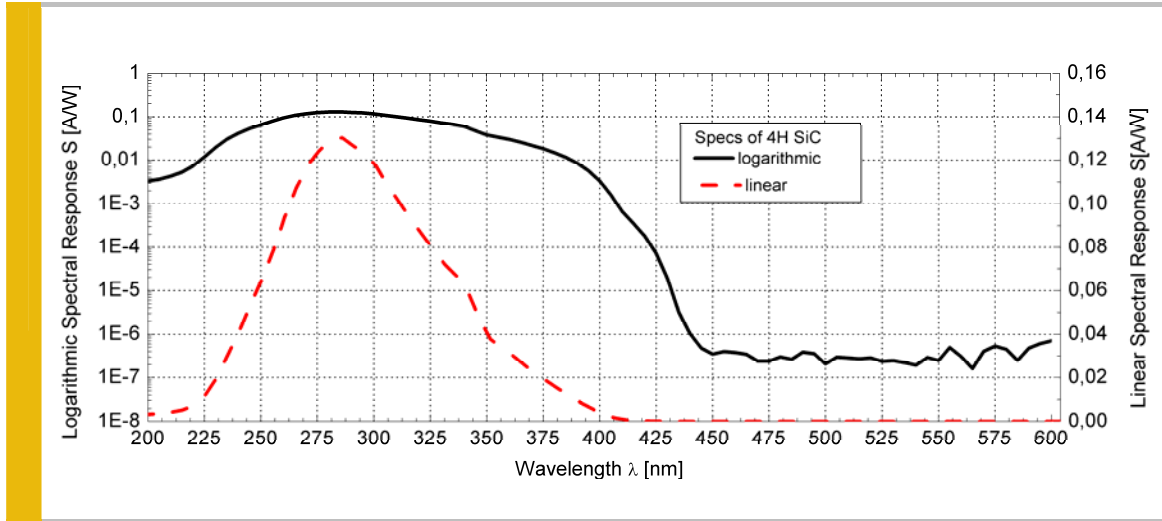
About the material Silicon Carbide (SiC)

The material SiC provides unique properties looking at visible blindness, speed and noise. A high long term radiation hardness for radiation intensities up to 1000 W/m² is given. These features make SiC the best currently available material for visible blind semiconductor UV detectors. Some SiC detectors (our HT-series) can be permanently operated at T=170°C where the temperature coefficient is only <0,1%/K. Because of the low dark current in the fA range also very low radiation intensities can be reliably measured. Please note that this needs suited amplifier circuit (please refer to page 2 and 3 of this datasheet). SiC photodiodes are available as non-filtered broad band devices or with filters e.g. providing an UVA-, UVB-, or UVC-only sensitivity or an erythema-curve compliance.

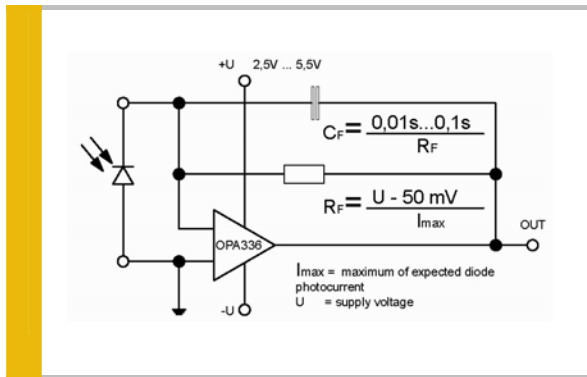
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T _{opt}	-25 ... +70	°C
Storage Temperature Range	T _{stor}	0 ... +100	°C
Soldering Temperature (3s)	T _{sold}	260	°C
Reverse voltage	V _{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,96	mm ²
Dark current (1V reverse bias)	I _d	5	fA
Capacitance	C	200	pF
Short circuit (10μW/cm ² at peak)	I ₀	12	nA
Temperature coefficient	Tc	<-0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral sensitivity	S _{max}	0,130	AW ⁻¹
Wavelength of max. spectral sens.	λ _{max}	285	nm
Sensitivity range (S=0,1*S _{max})	-	210 ... 380	nm
Visible blindness (S _{max} / S _{>400nm})	VB	10 ⁵	-

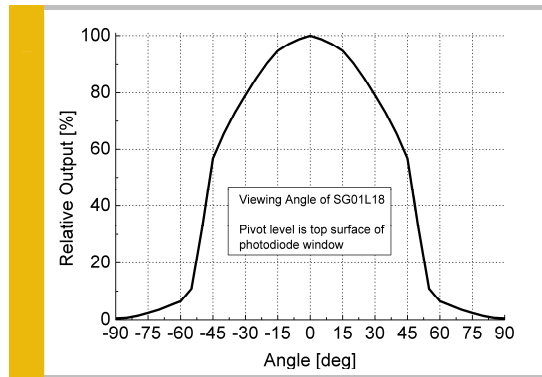
Spectral Response



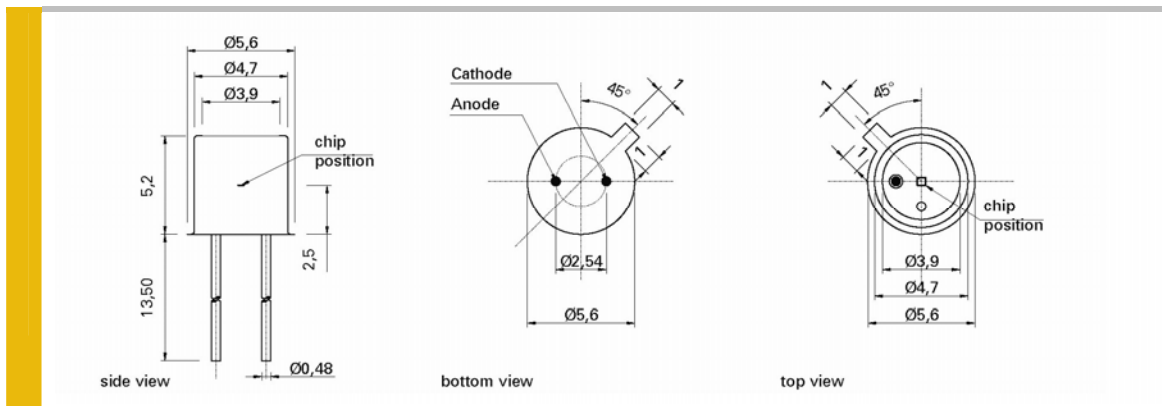
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01L-5 UV photodiode

- Broad Band UVA+UVB+UVC photodiode
- Active Area A = 0,96 mm²
- TO5 hermetically sealed metal housing
- 10μW/cm² peak radiation results a current of approx. 12nA

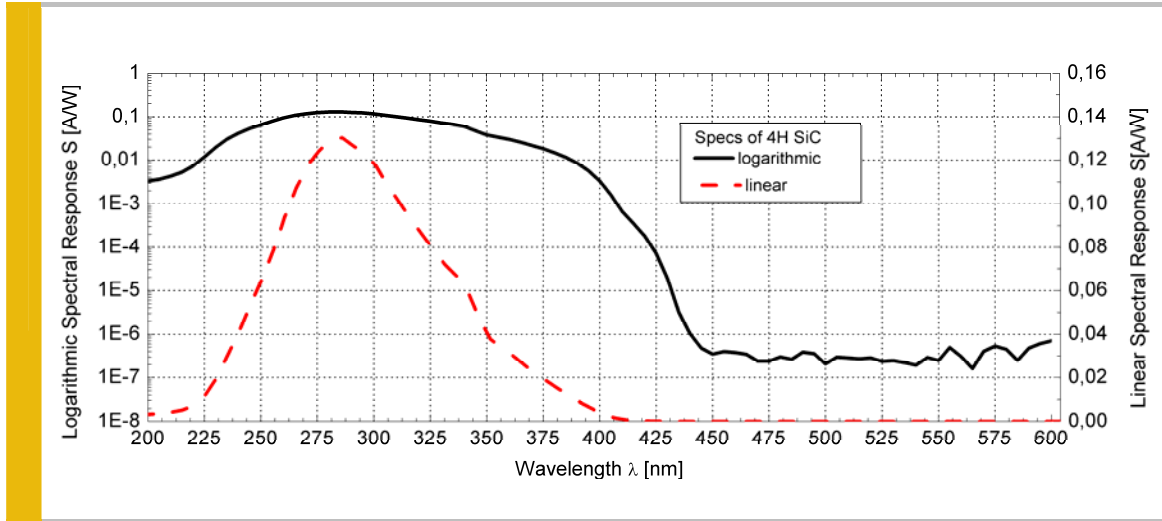
About the material Silicon Carbide (SiC)

The material SiC provides unique properties looking at visible blindness, speed and noise. A high long term radiation hardness for radiation intensities up to 1000 W/m² is given. These features make SiC the best currently available material for visible blind semiconductor UV detectors. Some SiC detectors (our HT-series) can be permanently operated at T=170°C where the temperature coefficient is only <0,1%/K. Because of the low dark current in the fA range also very low radiation intensities can be reliably measured. Please note that this needs suited amplifier circuit (please refer to page 2 and 3 of this datasheet). SiC photodiodes are available as non-filtered broad band devices or with filters e.g. providing an UVA-, UVB-, or UVC-only sensitivity or an erythema-curve compliance.

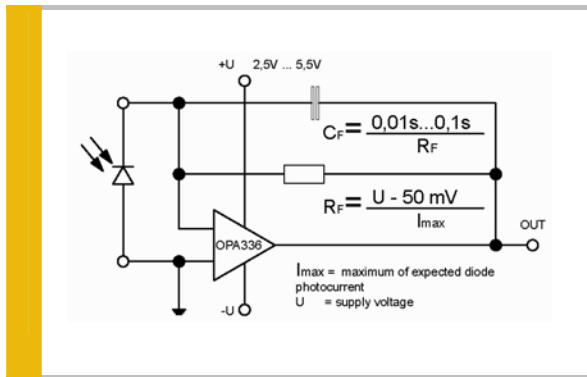
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T _{opt}	-25 ... +70	°C
Storage Temperature Range	T _{stor}	0 ... +100	°C
Soldering Temperature (3s)	T _{sold}	260	°C
Reverse voltage	V _{Rmax}	20	V
General Characteristics (T=25°C)			
Active Area	A	0,96	mm ²
Dark current (1V reverse bias)	I _d	5	fA
Capacitance	C	200	pF
Short circuit (10μW/cm ² at peak)	I ₀	12	nA
Temperature coefficient	Tc	<-0,1	%/K
Spectral Characteristics (T=25°C)			
Max. spectral sensitivity	S _{max}	0,130	AW ⁻¹
Wavelength of max. spectral sens.	λ _{max}	285	nm
Sensitivity range (S=0,1*S _{max})	-	210 ... 380	nm
Visible blindness (S _{max} / S _{>400nm})	VB	10 ⁵	-

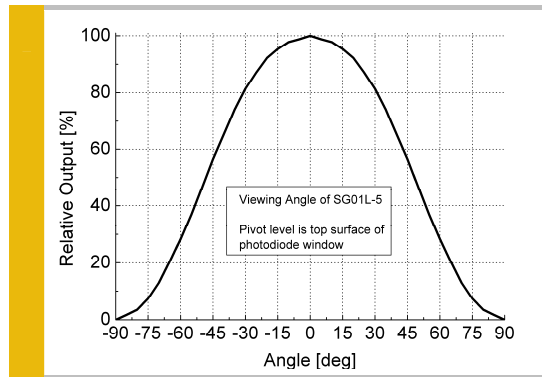
Spectral Response



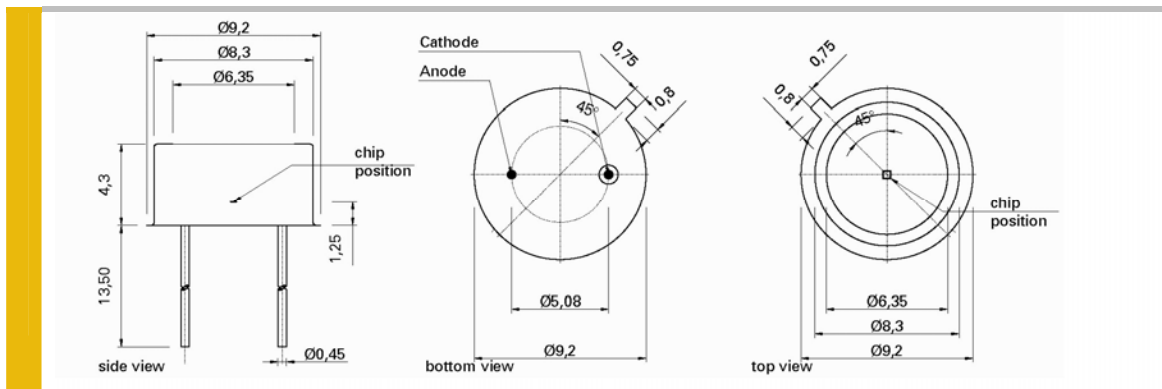
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01L-C5 UV photodiode

- UVC sensitivity according to DVGW W294
- Active Area $A = 0,96 \text{ mm}^2$
- TO5 hermetically sealed housing
- $10\mu\text{W}/\text{cm}^2$ radiation at 254nm results a current of approx. 6,2 nA

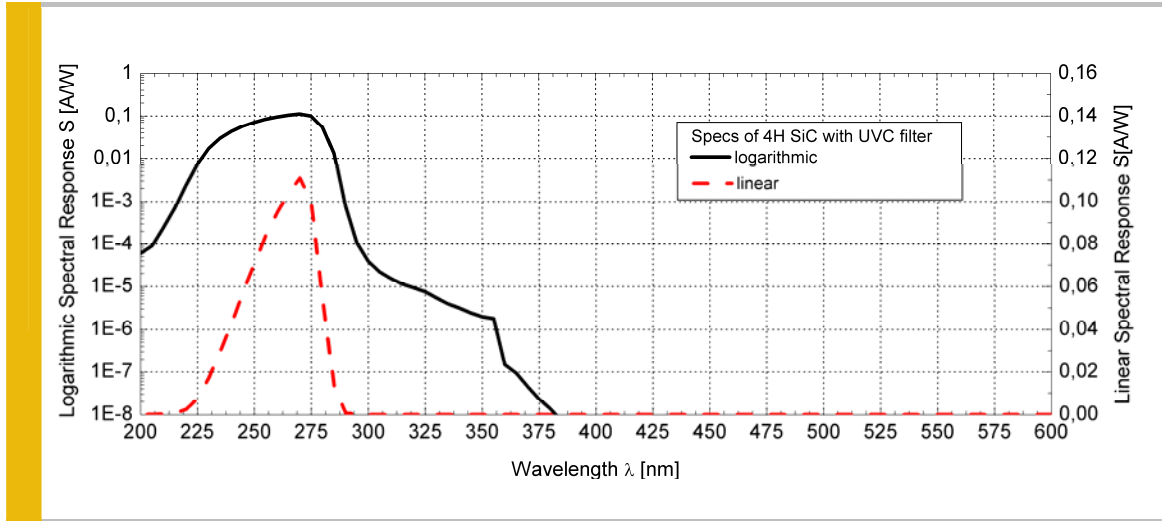
About the material Silicon Carbide (SiC)

The material SiC provides unique properties looking at visible blindness, speed and noise. A high long term radiation hardness for radiation intensities up to $1000 \text{ W}/\text{m}^2$ is given. These features make SiC the best currently available material for visible blind semiconductor UV detectors. Some SiC detectors (our HT-series) can be permanently operated at $T=170^\circ\text{C}$ where the temperature coefficient is only $<0,1\%/K$. Because of the low dark current in the fA range also very low radiation intensities can be reliably measured. Please note that this needs suited amplifier circuit (please refer to page 2 and 3 of this datasheet). SiC photodiodes are available as non-filtered broad band devices or with filters e.g. providing an UVA-, UVB-, or UVC-only sensitivity or an erythema-curve compliance.

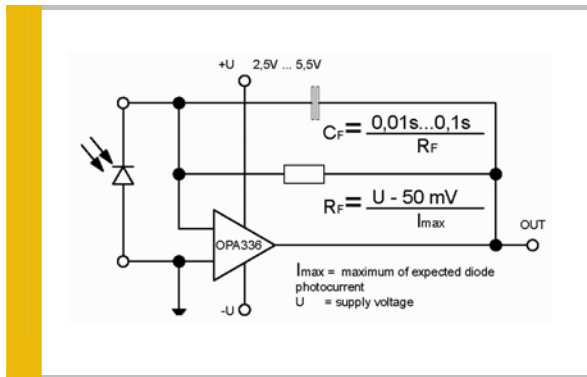
Specifications

Parameter	Symbol	Value	Unit
Maximum Ratings			
Operating Temperature Range	T_{opt}	-25 ... +70	$^\circ\text{C}$
Storage Temperature Range	T_{stor}	0 ... +100	$^\circ\text{C}$
Soldering Temperature (3s)	T_{sold}	260	$^\circ\text{C}$
Reverse voltage	V_{Rmax}	20	V
General Characteristics ($T=25^\circ\text{C}$)			
Active Area	A	0,96	mm^2
Dark current (1V reverse bias)	I_{d}	5	fA
Capacitance	C	200	pF
Short circuit ($10\mu\text{W}/\text{cm}^2$ at 254nm)	I_0	6,2	nA
Temperature coefficient	Tc	$<-0,1$	%/K
Spectral Characteristics ($T=25^\circ\text{C}$)			
Max. spectral sensitivity	S_{max}	0,110	AW^{-1}
Wavelength of max. spectral sens.	λ_{max}	270	nm
Sensitivity range ($S=0,1*S_{\text{max}}$)	-	230 ... 285	nm
Visible blindness ($S_{\text{max}} / S_{>400\text{nm}}$)	VB	10^5	-

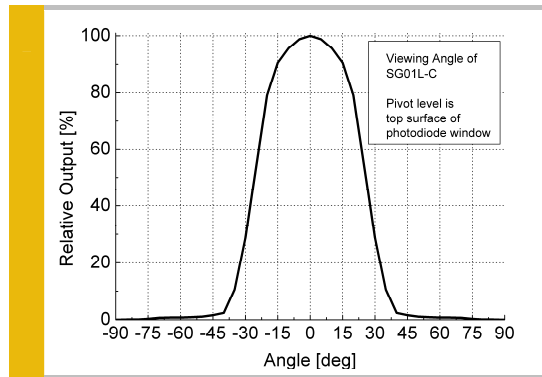
Spectral Response



Circuit



Viewing Angle



Drawing

