

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

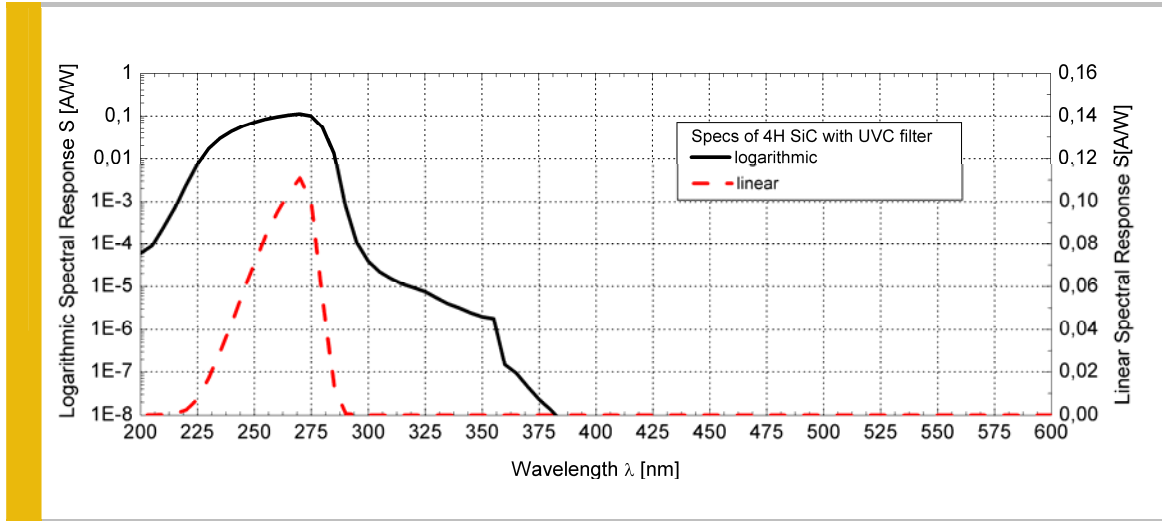
About the material Silicon Carbide (SiC)

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.

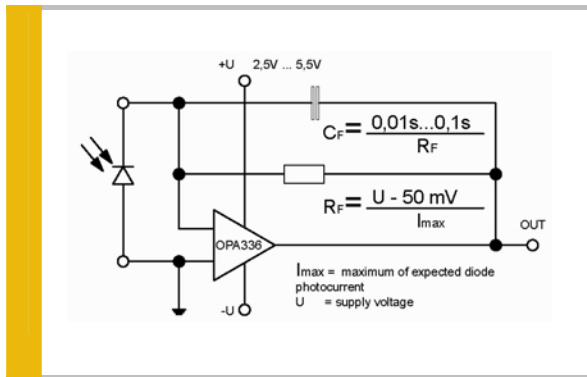
Specifications

| 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 ($S=0,1 * S_{\text{max}}$) | - | 230 ... 285 | nm |
| Visible blindness ($S_{\text{max}} / S_{>400\text{nm}}$) | VB | 10^5 | - |

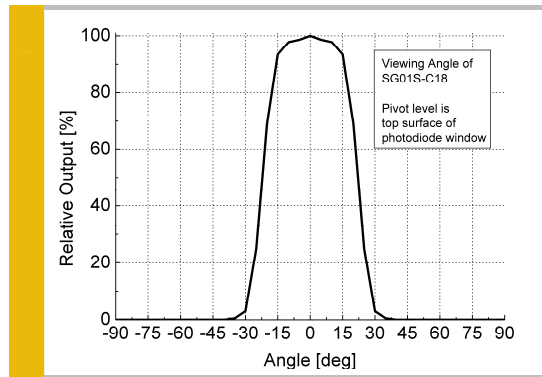
Spectral Response



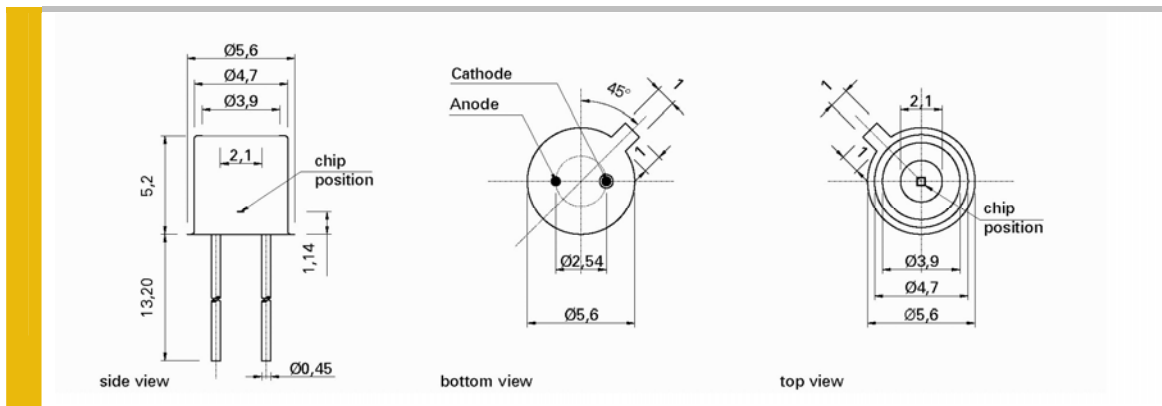
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01S-C5 UV photodiode

- UVC-only sensitivity according to DVGW W294
- Active Area A = 0,054 mm²
- TO5 hermetically sealed housing
- 10mW/cm² radiation at 254nm results a current of approx. 350nA

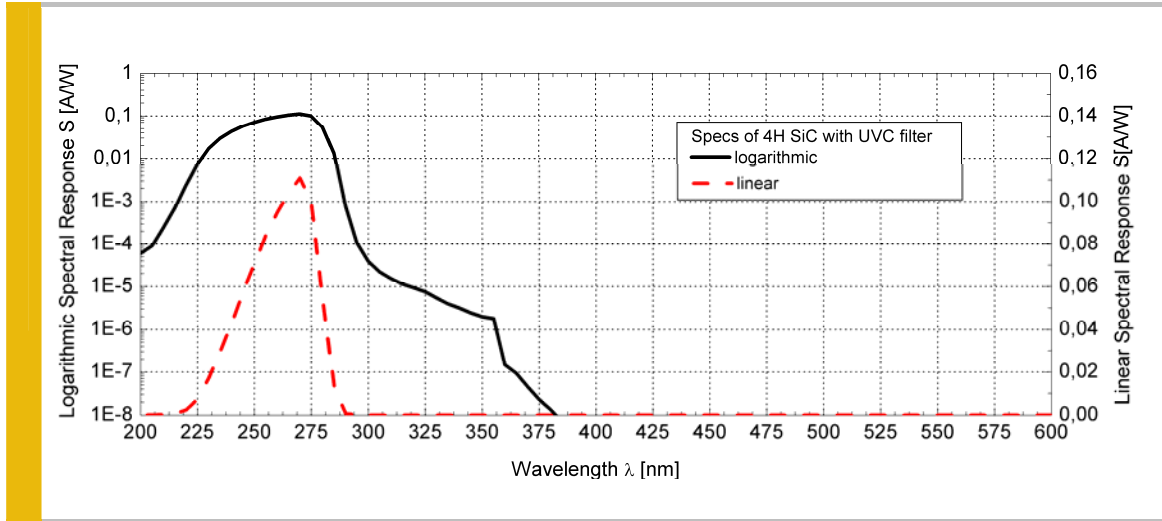
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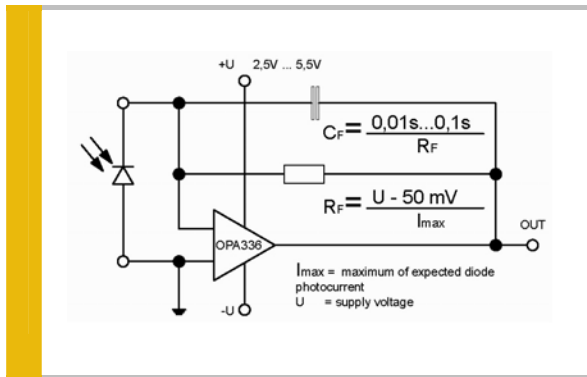
Specifications

| 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 254nm) | I ₀ | 350 | nA |
| Temperature coefficient | Tc | <-0,1 | %/K |
| Spectral Characteristics (T=25°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 _{max}) | - | 230 ... 285 | nm |
| Visible blindness (S _{max} / S _{>400nm}) | VB | 10 ⁵ | - |

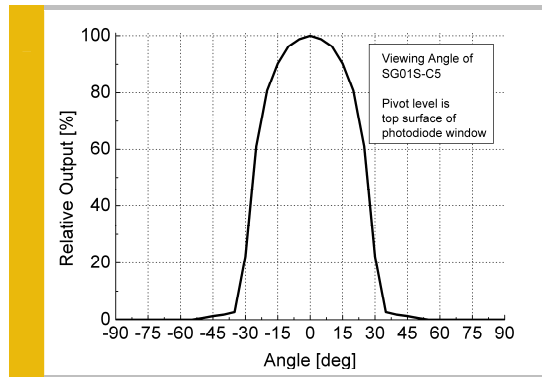
Spectral Response



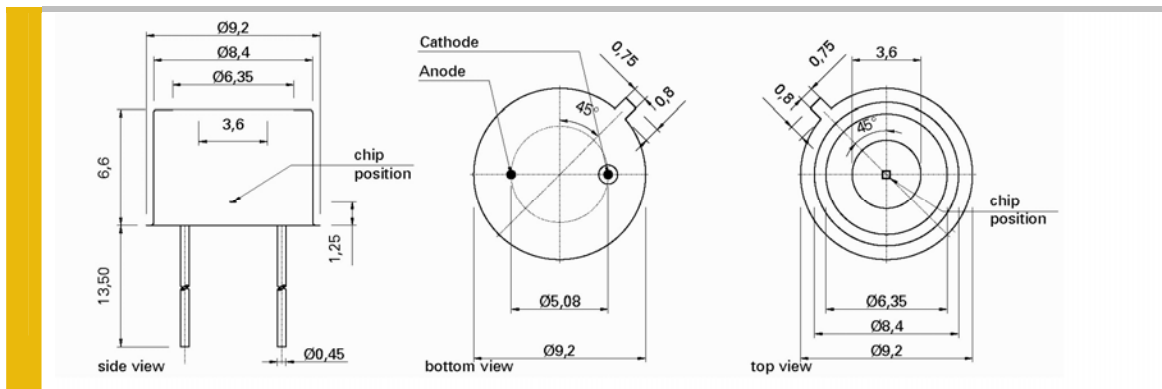
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01S-B18 UV photodiode

- UVB-only sensitivity
- Active Area A = 0,054 mm²
- TO18 hermetically sealed housing
- 10mW/cm² radiation at peak results a current of approx. 350nA

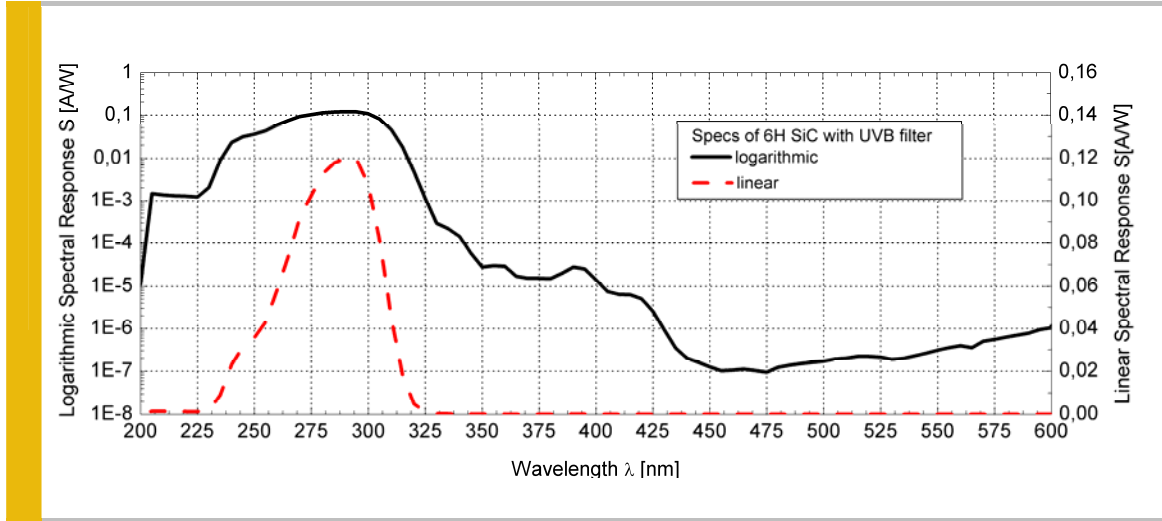
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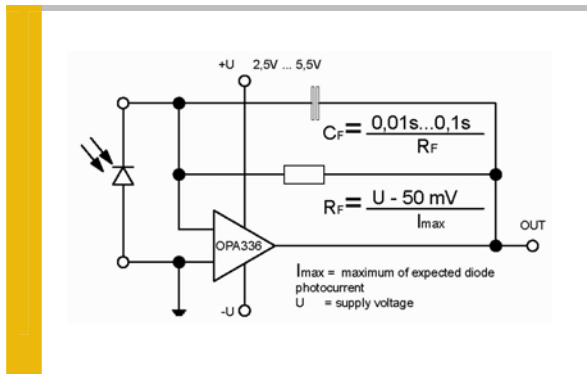
Specifications

| 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 254nm) | I ₀ | 350 | nA |
| Temperature coefficient | Tc | <-0,1 | %/K |
| Spectral Characteristics (T=25°C) | | | |
| Max. spectral sensitivity | S _{max} | 0,120 | AW ⁻¹ |
| Wavelength of max. spectral sens. | λ _{max} | 290 | nm |
| Sensitivity range (S=0,1*S _{max}) | - | 230 ... 320 | nm |
| Visible blindness (S _{max} / S _{>400nm}) | VB | 10 ⁵ | - |

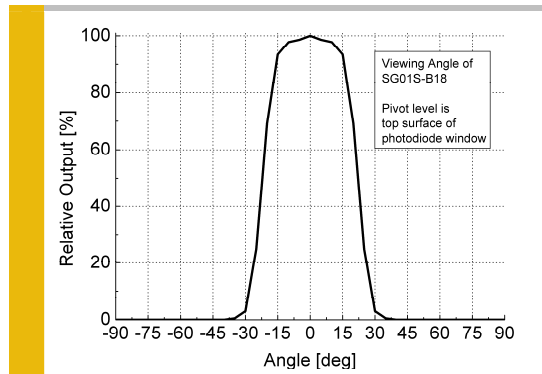
Spectral Response



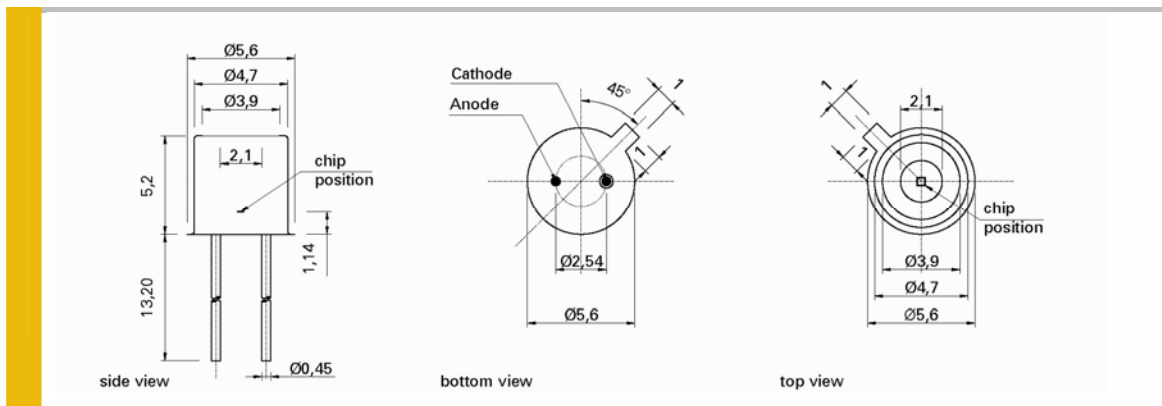
Circuit



Viewing Angle



Drawing



General Features



Properties of the SG01S-A18 UV photodiode

- UVA-only sensitivity
- Active Area $A = 0,054\text{ mm}^2$
- TO18 hermetically sealed housing
- 10mW/cm^2 radiation at 335nm results a current of approx. 325nA

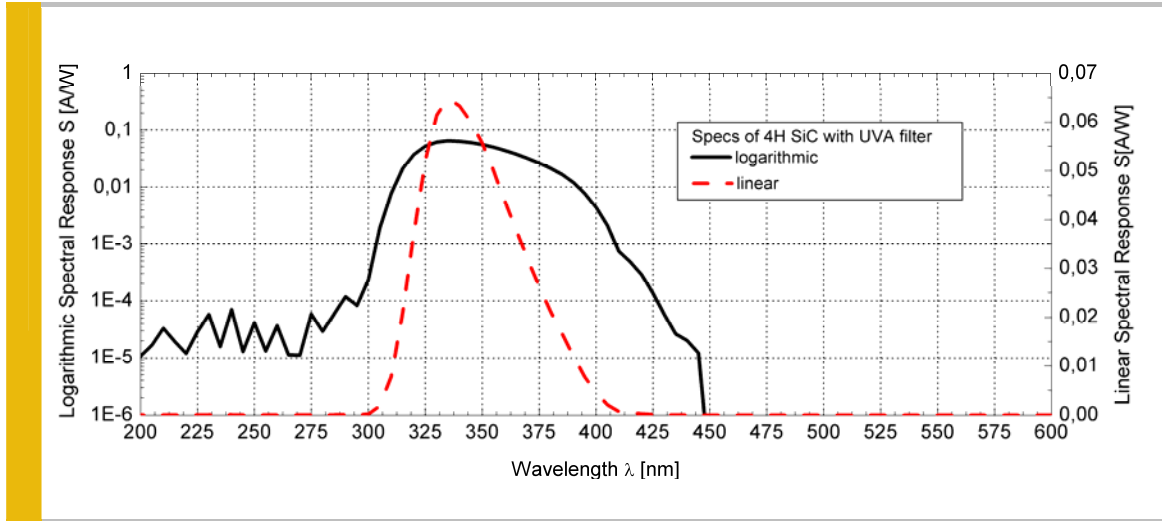
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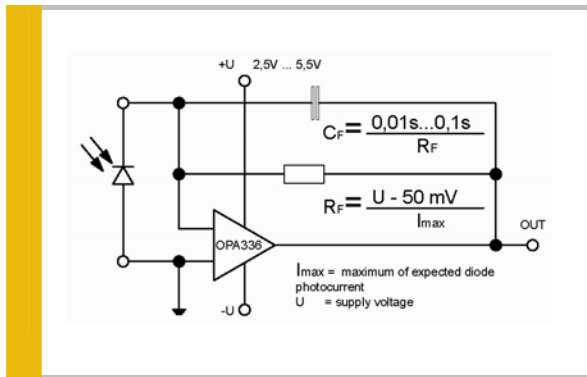
Specifications

| Parameter | Symbol | Value | Unit |
|---|------------------------|-----------------|------------------|
| Maximum Ratings | | | |
| Operating Temperature Range | T_{opt} | $-25 \dots +70$ | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stor} | $0 \dots +100$ | $^\circ\text{C}$ |
| 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} | 0,065 | AW^{-1} |
| Wavelength of max. spectral sens. | λ_{max} | 335 | nm |
| Sensitivity range ($S=0,1 \cdot S_{\text{max}}$) | - | 310 ... 395 | nm |
| Visible blindness ($S_{\text{max}} / S_{>400\text{nm}}$) | VB | 10^5 | - |

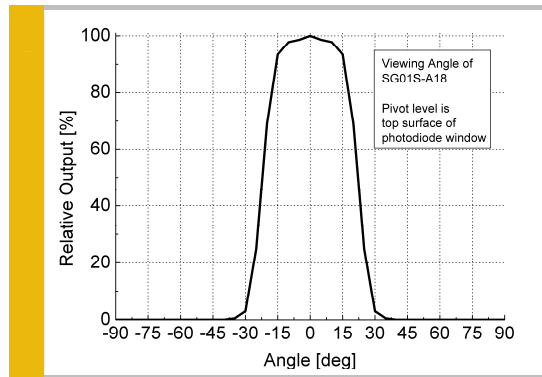
Spectral Response



Circuit



Viewing Angle



Drawing

