

Features

- Broad band UVA-UVB-UVC photodiode for weak and directed radiation
- Perfectly suited for flame sensing
- Silicon Carbide based chip for extreme low noise and dark current
- Chip dimensions of $0.5 \times 0.5 \text{ mm}^2$ with 0.22 mm^2 active area
- Virtual active area of approx. 4 mm^2 due to integrated lens
- Intrinsic visible blindness due to wide-bandgap semiconductor material
- Completely insensitive to the visible ($S_{280\text{nm}} / S_{400\text{nm}} > 10^4$) without filters
- The chip is manufactured by Cree Research Inc., U.S.A.

Eigenschaften

- Breitband UVA-UVB-UVC Photodiode für schwache und gerichtete Strahlung
- Optimal zur Flammenerkennung einsetzbar
- Siliziumkarbidchip mit extrem niedrigem Rauschen und Dunkelstrom
- Chipabmessungen von $0.5 \times 0.5 \text{ mm}^2$ mit 0.22 mm^2 aktiver Fläche
- Virtuelle aktive Fläche von etwa 4 mm^2 durch Linsenkappe
- hohe intrinsische Unempfindlichkeit gegenüber dem sichtbaren Licht durch Halbleitermaterial mit hoher Bandlücke
- Vollständig unempfindlich für sichtbares Licht ($S_{280\text{nm}} / S_{400\text{nm}} > 10^4$) ohne Filtereinsatz

SG01M – Lens

- Chiphersteller: Cree Research Inc., U.S.A.

Maximum Ratings

Parameter	Symbol	Value	Unit
Operating temperature range	T_{opt}	-25 ... +70	°C
Reverse voltage	V_{Rmax}	20	V

General Characteristics

($T_a = 25\text{ °C}$)

Active chip area	A	0.22	mm ²
Dark current at 1 V reverse bias	I_d	2	fA
Capacitance	C	80	pF
Aperture angle	α	+/- 2.5	deg
Short circuit current from cigarette lighter at 1 m distance	I_0	ca. 2	pA

Spectral Characteristics

($T_a = 25\text{ °C}$)

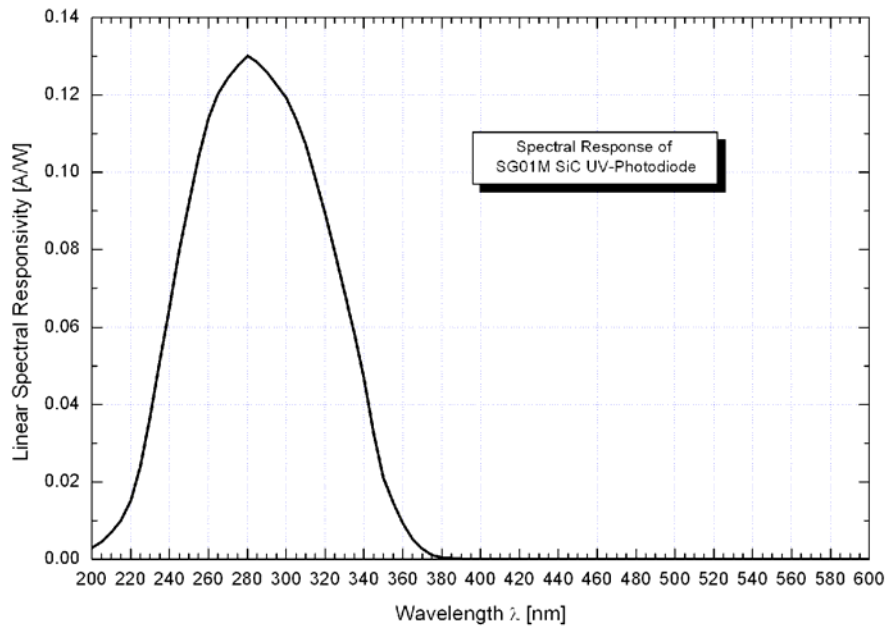
Ultraviolet selective SiC based UV sensor



SG01M – Lens

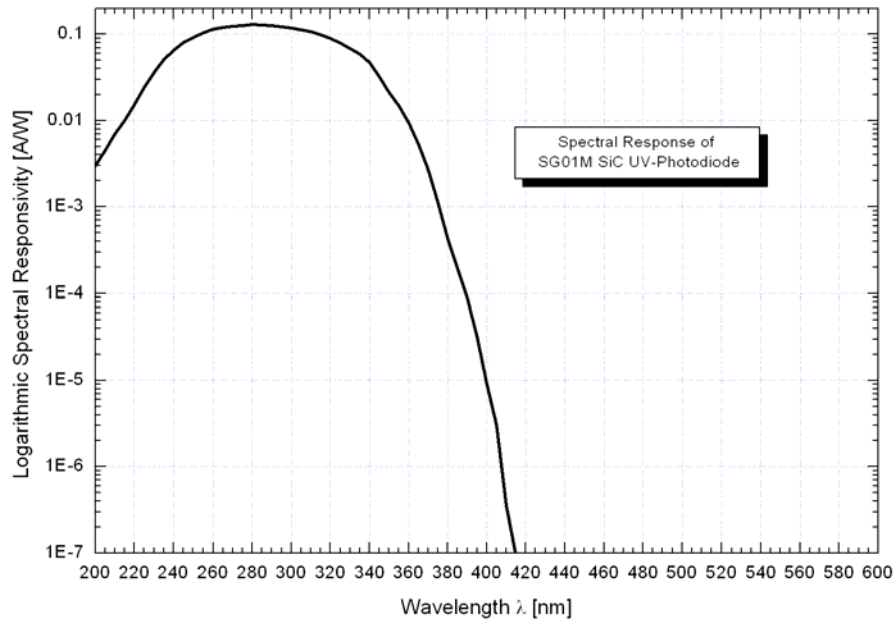
Parameter	Symbol	Value	Unit
Max. spectral sensitivity (chip)	S_{\max}	0.13	$A W^{-1}$
Wavelength of max. spectral sensitivity	$\lambda_{S_{\max}}$	280	nm
Range of spectral sensitivity ($S=0.1*S_{\max}$)	-	220 - 360	nm

Linear Spectral Response



SG01M – Lens

Logarithmic Spectral Response

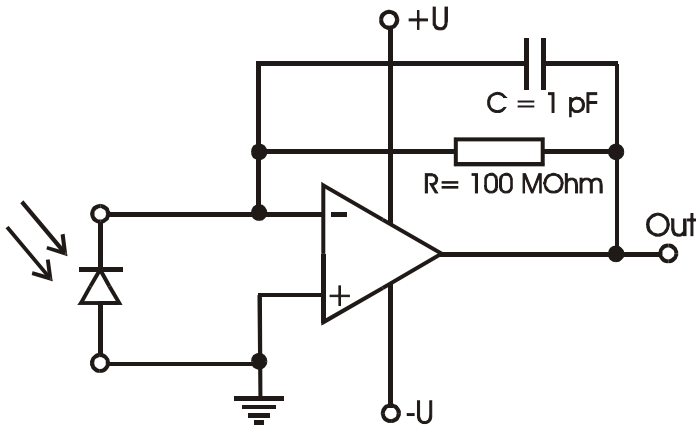


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Application Example



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SG01M – Lens

Pin Layout

