

Ultraviolet selective SiC based UV sensor



SG01M



Features

- Broad band UVA-UVB-UVC photodiode in TO18 metal package
- Silicon Carbide based chip for extreme radiation hardness
- Chip dimensions of $0.5 \times 0.5 \text{ mm}^2$ with 0.22 mm^2 active area
- 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.

Maximum Ratings

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



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General Characteristics

($T_a = 25\text{ °C}$)

Parameter	Symbol	Value	Unit
Active area	A	0.22	mm ²
Dark current at 1 V reverse bias	I_d	2	fA
Capacitance	C	80	pF
Short circuit current at bright sun	I_0	ca. 180	nA

Spectral Characteristics

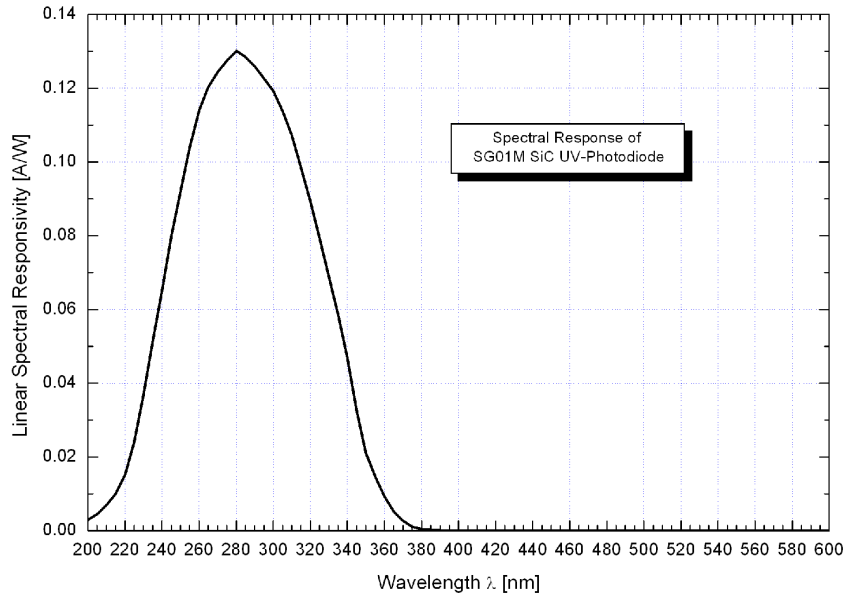
($T_a = 25\text{ °C}$)

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

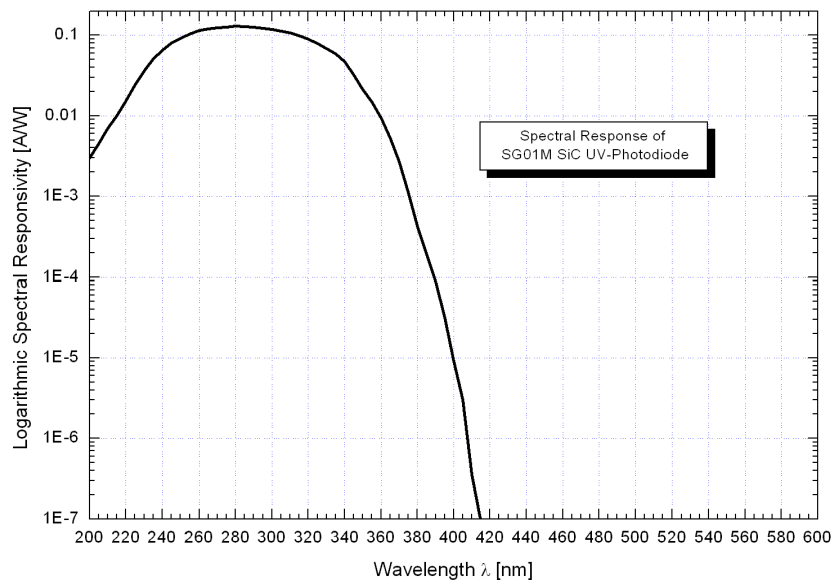


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Linear Spectral Response



Logarithmic Spectral Response

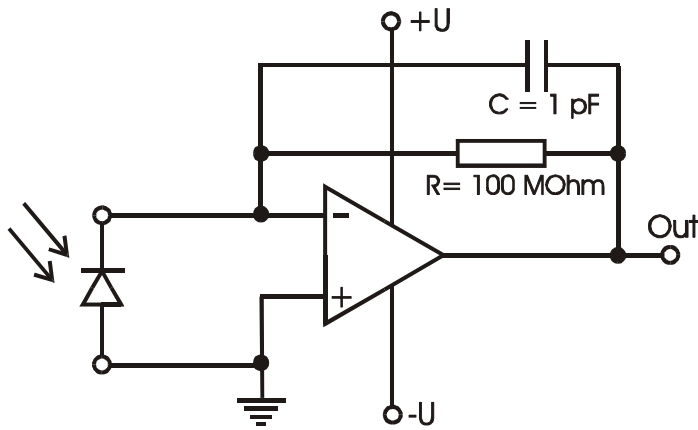


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Application Example



Pin Layout

