



SiC UV avalanche photodiode

Model: SPAD-ABC-S

General Features:

- Broad band UVA+UVB+UVC avalanche photodiode
- Linear and Geiger mode operation
- Single photon counting capability
- Good visible blindness
- TO-46 metal housing



Applications: UV fluorescence detection, UV lidar and communication, remote flame sensing

Performance Specifications:

Parameter Description	Test Conditions	Specifications			Units
		Min.	Typ.	Max.	
Effective Optical Diameter			120		μm
Linear Mode Parameters (Case temperature 300 K, all voltage and currents are reverse biased)					
Breakdown voltage, V_b	$M > 1$		180		V
Temperature coefficient of V_b	Between 300 K and 473 K, linear approximation		0.034		V/K
Quantum Efficiency, QE	280 nm, $M=1$ (linear mode)		35		%
Total Dark Current, I_d	$M=10$		10		pA
Geiger Mode Parameters					
Dark Count Rate, DCR	Case temperature 300 K, 2 V overbias		10		kHz
Photon Detection Efficiency, PDE	Case temperature 300 K, 280 nm, 2 V overbias		10		%

Maximum Ratings:

Parameters	Conditions	Min.	Max.	Units
Forward Current	Continuous bias		1	mA
Forward Voltage	Continuous bias		5	V
Reverse Current	Continuous bias		0.1	mA
Reverse Voltage	Continuous bias		(V_b+5)	V
Reverse Voltage	Pulsed (gated operation)		(V_b+7)	V
Optical Power	Continuous wave (CW)		10	μW
Case Temperature		-20	100	$^{\circ}\text{C}$

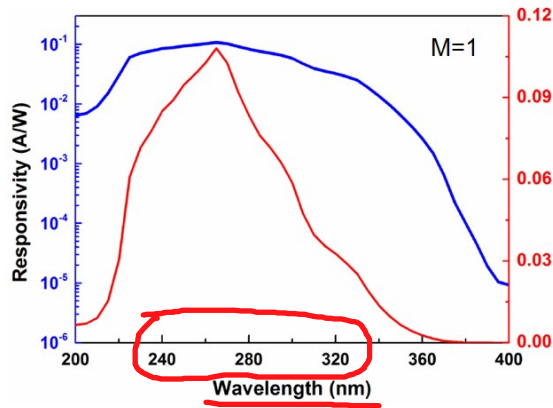
Note: maximum ratings indicate conditions that the device can be exposed for short periods of time without damage. Although there are reports that SiC APDs can operate at temperatures above 150 $^{\circ}\text{C}$, these devices have not yet been tested to establish their reliability characteristics at very high temperature and under extreme conditions of thermal cycling.



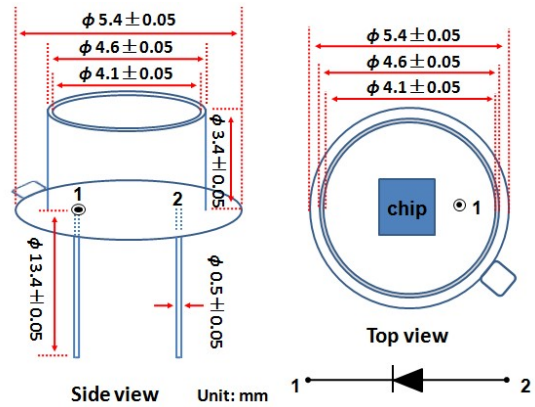
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Spectral response



Package dimensions



GaNo Optoelectronics Inc
Subject to change without notice