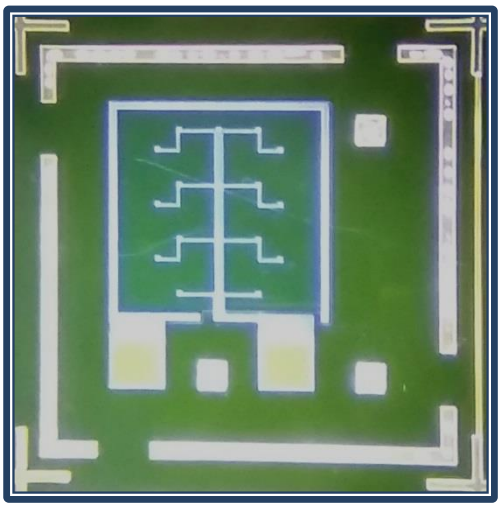
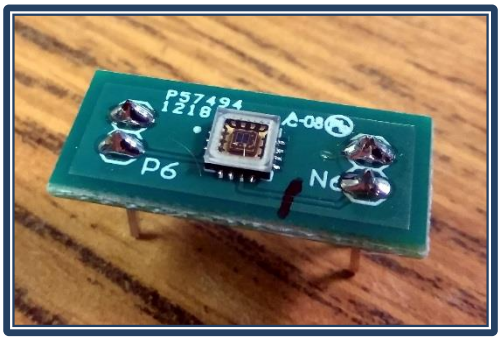
CCSiCUVPL01–SiC Ultraviolet Photodiodes

High sensitivity, low dark-current SiC photodiode for UV detection applications.



Features:

- Detection range: 200 nm to 375 nm
- Package: QFN-16
- Peak Sensitivity: 290 nm
- Three sizes:
  - CCSiCUVPL01A – 0.45 mm^2
  - CCSiCUVPL01B – 0.32 mm^2
  - CCSiCUVPL01C – 0.20 mm^2



Applications:

- Ultraviolet signal detection
- Water filtration systems
- Pathogen detection
- Flame detection
- Defect monitoring

Ratings

Parameter	*Symbol*	*Value*	*Unit*	*Notes*
Op. Temperature Range	T_L:T_H	-40:100	°C	Package rating. Unpackaged diodes can be operated up to 200 °C.
Max. Reverse Voltage	V_R	20	V	

Characteristics (T_A = 25 °C)

Parameter	*Symbol*	*Value*	*Unit*
Photocurrent (V_R=2 V, λ = 290 nm, P_{inc} = 0.22 μW, A_{pd} = 0.45 mm^2)	I_p	95.9	nA/mm^2
Peak Responsivity (λ_{max} = 290 nm, V_R=2 V)	R_{max}	0.19	A/W
Peak Quantum Efficiency (λ_{max} = 290 nm, V_R=2 V)	η	0.81	-
Spectral Range, 90% max (V_R=2 V)	$\lambda_{min\_90\%}$ - $\lambda_{max\_90\%}$	274 - 298	nm
Spectral Range, FWHM (V_R=2 V)	λ_{min_FWHM} - λ_{max_FWHM}	233 – 322	nm
Dark Current (T=25 °C, V_R=2 V)	I_D	<20	pA/mm^2
Visible blindness (peak responsivity/resp. @ 395 nm, V_R=2V)	-	>1450	-
Active Area	A_{pd}	0.45	mm^2

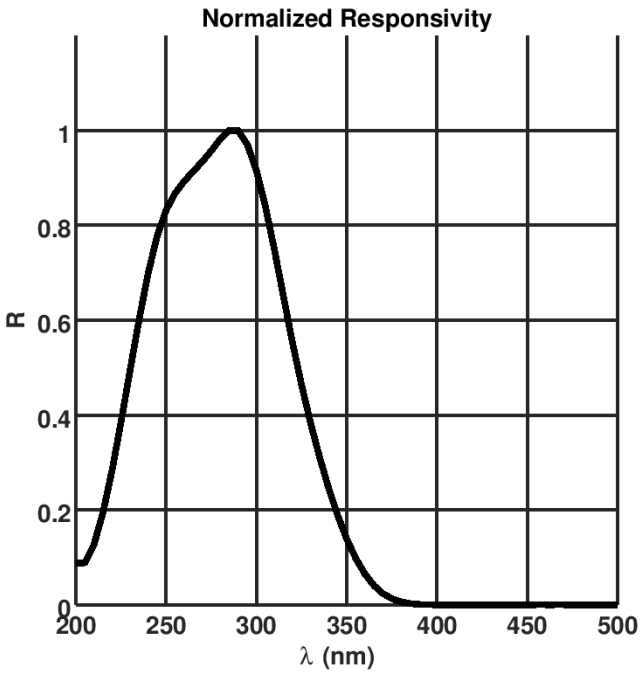


Fig. 1 Normalized responsivity

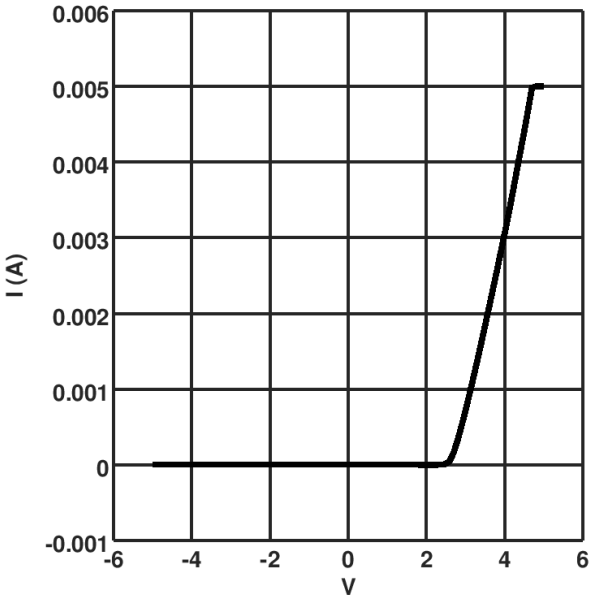


Fig. 2 Sample device IV characteristics, linear scale

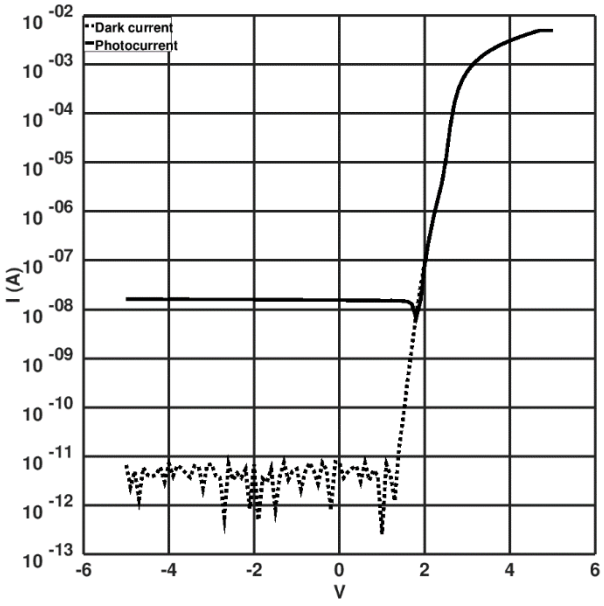


Fig. 3 Sample device IV characteristics, logarithmic scale. Photocurrent under 275 nm illumination.