Extended InGaAs photovoltaic detector 1.3-2.6 um

Preliminary datasheet

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Overwiew

VIGO System is developing PIN InGaAs photodiodes with extended wavelength response range (1.3-2.6 um) for use in multitude of SWIR applications, including gas analysis, control of industrial processes, flame detection and many others.

Our photodiodes offer class-leading parameters and broad customization options. Our current development focuses on uncooled photodiodes in TO-39 packaging, however a whole range of extended InGaAs photodetectors with a selection of active area sizes and numerous cooling and packaging options is being developed.

Preliminary technical specification of a first model in the InGaAs family is shown below.

Please note that the extended InGaAs photodiode is a product still in development and changes in future specifications may occur.

Technical specification

Parameters @ room temperature (296K), peak wavelength and V_R =0 V unless stated otherwise.

">" denotes minimum. "<" denotes maximum. "~" denotes typical value.

Parameter	Detector type photovoltaic
Active element material	InGaAs, circular geometry
Peak wavelength, µm	2.3
Spectral range, µm	2.0 – 2.5
λ_{Cutoff} , µm	2.6
Responsivity (@ 2 um), A/W	> 0.9
Dark current (@ V_R =0.5 V), µA	< 50
Cut-off frequency (R_L =50Ω), MHz	> 2
Detectivity D*, cm*Hz^0.5/W	> 4 x 10^{10}
Terminal capacitance (R_L =50Ω), pF	< 1200
Shunt impedance (@ V_R =10 mV), kΩ	> 2
Active area diameter, mm	1 *0.1 – 3 mm diameters planned
Package	TO-39 *TO-18/TO-5 on special request
Window	None *Borosilicate glass on special request

Exemplary spectral characteristics (spectral characteristics of the delivered samples may differ)