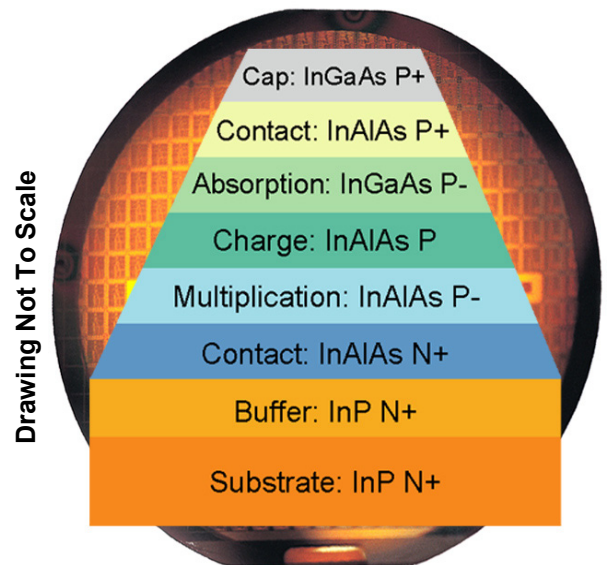


## 043645-2: 2.5Gb/s Low Capacitance InAlAs/InGaAs APD Die

### General Product Description

- High-quality epitaxial InGaAs/InAlAs Avalanche Photo-Detector (APD) device structures grown on InP substrates by MOVPE.
- Spectrolab offers high-quality InGaAs (1.0  $\mu\text{m}$  – 1.7  $\mu\text{m}$ ) Avalanche Photo-Detector epitaxial structures for the telecommunication market.



InAlAs APD Photodetector Die Structure

### 2.5 Gb/s APD Die Specifications

Parameter	Test Conditions at: $0^{\circ}\text{C} < T_{\text{ambient}} < 85^{\circ}\text{C}$ (Unless Specified)	Min.	Max.	Unit
APD Responsivity	$\lambda = 1530$ to $1615$ nm at $M = 10$ $\lambda = 1260$ to $1330$ nm at $M = 10$	7.0 6.0	9.0 8.0	A / W A / W
APD Breakdown Voltage, $V_{\text{br}}$	$I_{\text{d}} = 100$ $\mu\text{A}$	30	40	V
Dark Current at $M = 10$	$T_{\text{a}} = 25^{\circ}\text{C}$	5	20	nA
Total APD Capacitance	$F = 1$ MHz at $M > 3$	0.3	0.5	pF
High Frequency Cut-Off	$R_{\text{L}} = 50$ $\Omega$ , $3 < M < 10$ Ref. To 200 MHz	2	-	GHz
Bandwidth Flatness	$R_{\text{L}} = 50$ $\Omega$ , $3 < M < 10$ , $0.2 < F < 8$ GHz	-1.0	+1.0	dB
Noise Equivalent Power	$\lambda = 1550$ nm, $M = 10$	$3 \times 10^{-14}$	$1 \times 10^{-13}$	W / $\sqrt{\text{Hz}}$
Effective Optical Diameter	$\lambda = 1550$ nm, $M = 10$ ; $R > 7.0$ A / W, $P_{\text{in}} = -20\text{dBm}$	40	40	$\mu\text{m}$

The information contained on this sheet is for reference only. Actual specifications for delivered products may vary. Rev. A 5/25/12

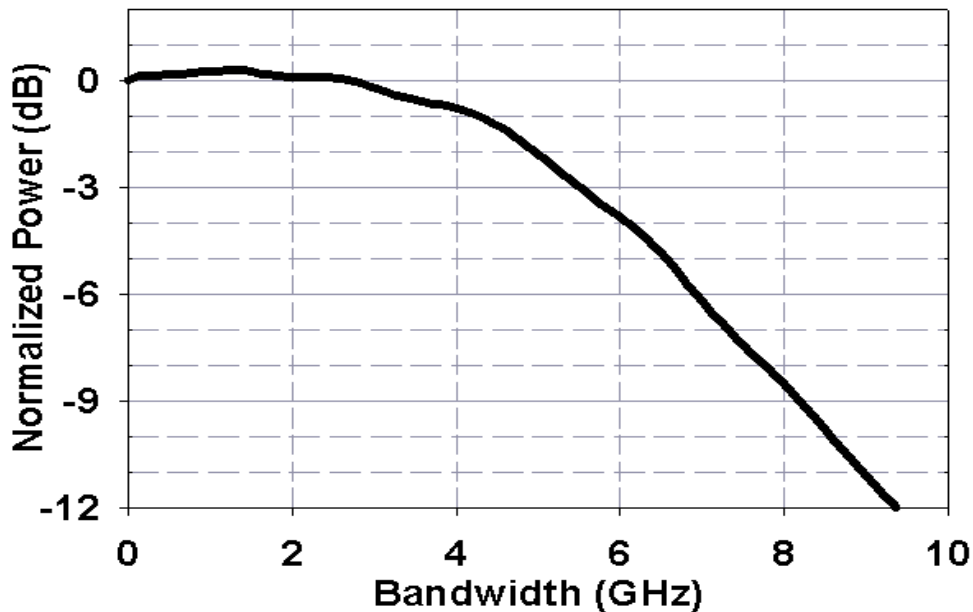


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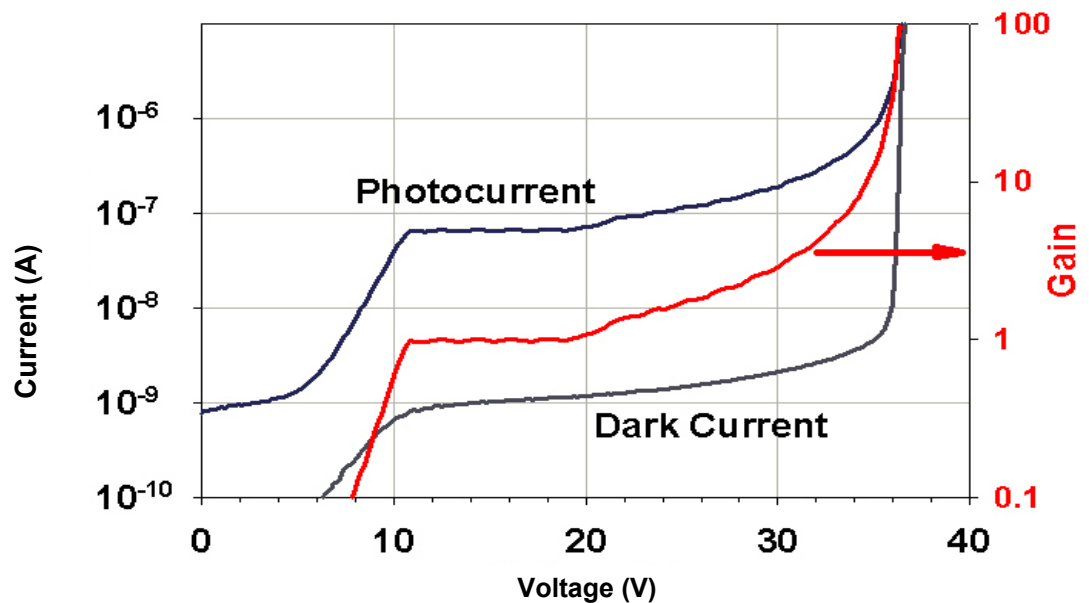
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## 043645-2: 2.5Gb/s Low Capacitance InAlAs/InGaAs APD Die

Frequency Response of 2.5Gb/s APD Die



InAlAs APD Die IV Data and Gain



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