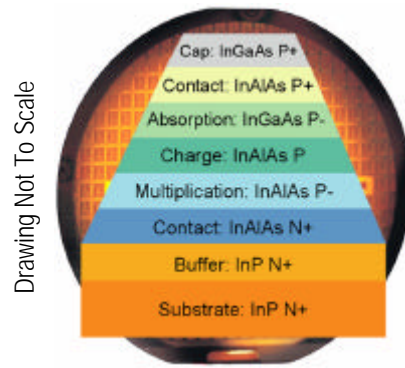


043645-2: 2.5Gb/s Low Capacitance InAlAs/InGaAs APD Die

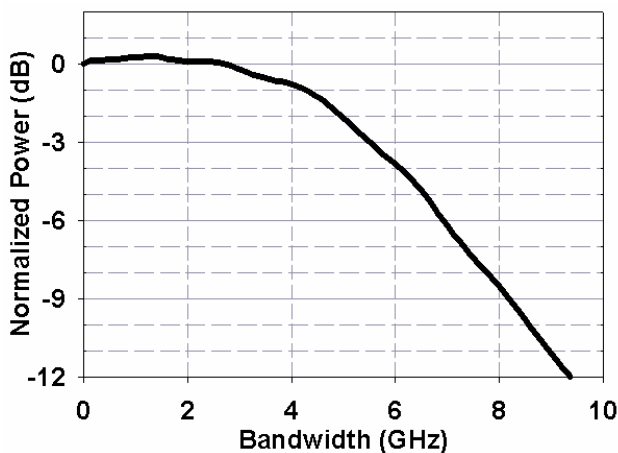
General Product Description

- High-quality epitaxial InGaAs/InAlAs avalanche photodetector (APD) device structures grown on InP substrates by MOVPE.
- 10 Gb/s device designs available.
- Spectrolab offers high-quality InGaAs (1.0 μm – 1.7 μm) avalanche photodetector epitaxial structures for the telecommunication market.
- The epitaxial structure is grown in Spectrolab's high-volume multi-wafer MOVPE reactors.
- Low capacitance dies are under development.

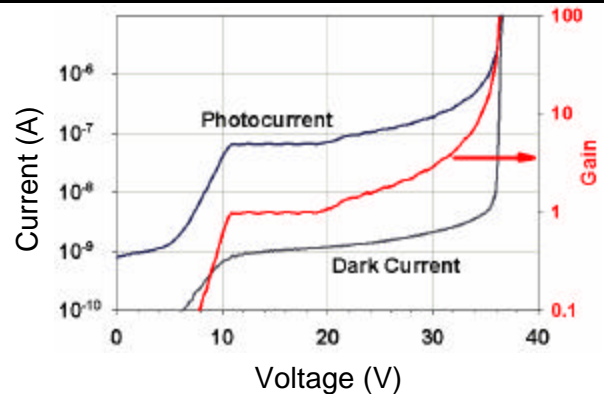


InAlAs APD Photodetector Die Structure

Frequency Response of 2.5Gb/s APD Die



InAlAs APD Die IV Data & Gain



2.5 Gb/s APD Specifications

Parameter	Test Conditions at: 0°C < T _{ambient} < 85°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 _{br}	I _d = 100 μA	30	40	V
Dark Current at M = 10	T _a = 25°C	5	20	nA
Total APD Capacitance	F = 1 MHz at M > 3	0.3	0.5	pF
High Frequency Cut-Off	R _L = 50 Ω , 3 < M < 10 Ref. To 200 MHz	2	-	GHz
Bandwidth Flatness	R _L = 50 Ω , 3 < M < 10, 0.2 < F < 8 GHz	-1.0	+1.0	dB
Noise Equivalent Power	$\lambda = 1550$ nm, M = 10	3 x 10 ⁻¹⁴	1 x 10 ⁻¹³	W / $\sqrt{\text{Hz}}$
Effective Optical Diameter	$\lambda = 1550$ nm, M = 10; R > 7.0 A / W, P _{in} = -20dBm	40	40	μm

The information contained on this sheet is for reference only. Actual specifications for delivered products may vary. 6/6/06

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