InGaAs Photodetector Wafers: Raising the bar of detector technology for telecom applications.

Specifications

- 50, 75, 100 mm
- InP/InGaAs/InGaAsP
- Photodetector devices
- MOCVD production
- Telecommunications applications

Features and performance

- Typical i-layer background concentration <5e14, measured by polaron
- Quick-lot diode fab and characterization available
- Low dark current
  - Typical leakage currents less than 1nA at –5 volts
- InGaAsP capability for advanced structures

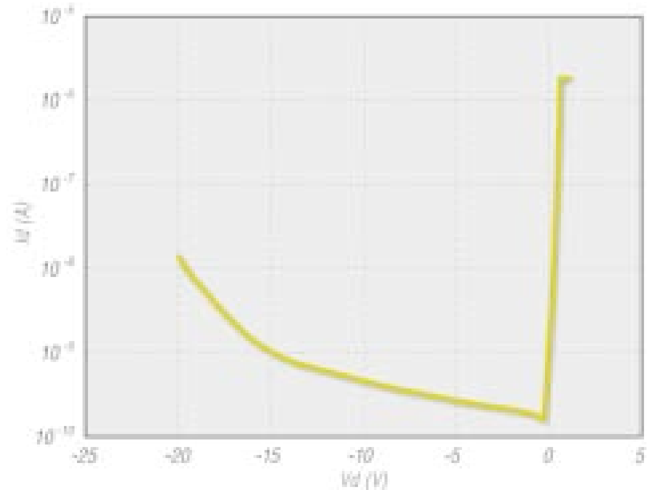
EpiWorks offers customers high-level interaction with leading researchers, next-generation GaAs and InP materials technology, device expertise, and a high-yield, reliable product. In addition to our quality EpiDetector™ wafers, EpiWorks also offers a range of products featuring advanced material systems for wireline and wireless applications, including our EpiFET™, EpiHBT™, and EpiLaser™ lines.

Performance. It's often the first thing engineers look for. But, when it comes to wafers, what's performance without volume and consistency? You've got to have all three. That's where EpiWorks comes in, supplying EpiDetector™ InGaAs photodetector wafers that combine performance with quick-lot data for better yield and quality. Grown by MOCVD, EpiWorks' InGaAs wafers surpass industry standards, bringing next-generation technology to your application.

Taking you to the cutting edge

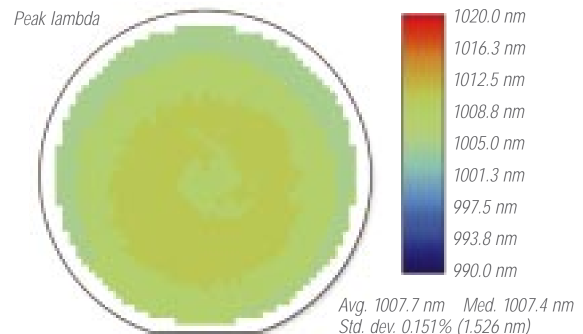
Moving to next-generation technology doesn't have to be hard, and you don't have to go it alone. EpiWorks has InGaAsP capability for advanced photodetector structures, and state-of-the-art 100 mm capability to fit your needs. Our expertise in both materials and devices results in the high-quality, high-yield products you expect and the advanced technology you need.

I-V curve for P-I-N diode



An I-V curve for a diode with a 2 μm i-layer and a 90 μm diameter. Typical devices show leakage currents of less than 1nA at a 5V reverse bias.

PL map of 100 mm InGaAsP wafer



A PL map of a 100 mm InGaAsP wafer with a 1.0 μm peak wavelength. Typical uniformity numbers are less than 0.5%.

EpiWorks characterization of InGaAs photodetector wafers

Parameter	Measurement technique	Standard tolerance of specified value
Carrier concentration	Polaron profiler, SIMS	±30% gauge capability
Lattice mismatch	X-ray diffraction	±1000 ppm
Layer thickness	AlphaStep, SIMS	±10%
Defect density	Tencor Surfscan	<10 cm^{-2}
Leakage current (90 μm diameter)	Diode I-V measurements	±50%

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