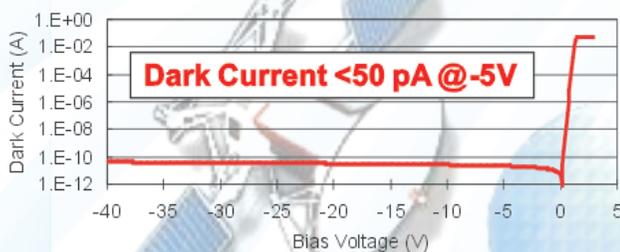


VPEC's GaAs PIN Epiwafer

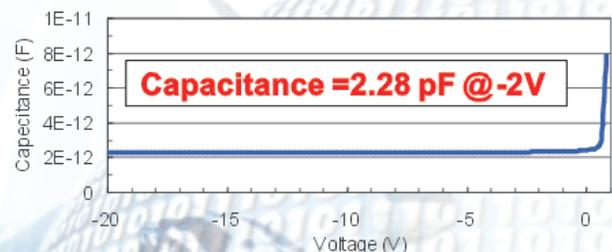
Up to 4-inch Wafer

- ★ Very low defect and particle densities on wafer surface for high device yield.
- ★ Ultra low background of i-GaAs absorption layer ($<2E14/cm^3$) for high speed application.
- ★ In-process device verification of dark current, capacitance, and their uniformities using our own mesa-type diode process capability for high quality control.
- ★ Very low dark current in device performance (<50 pA for $300\mu m$ in-diameter GaAs PIN device) for high device responsivity.
- ★ Excellent on-wafer, wafer-to-wafer uniformities and batch-to-batch consistency up to 4-inch wafer including material composition, layer thickness and doping concentration for high cost-effectiveness.
- ★ Grown on n-type or Semi-Insulator substrates are all available depended on customer's request.
- ★ Low cost with very high performance and high probe yield ($>90\%$).

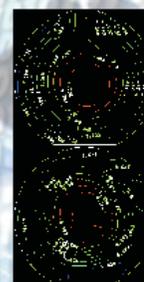
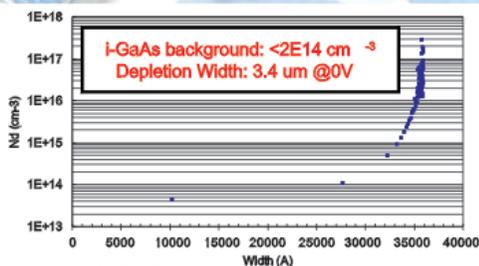
I-V Characteristics of $300\mu m$ in diameter Device



C-V Characteristics of $300\mu m$ in diameter Device



i-GaAs Background from C-V Measurement



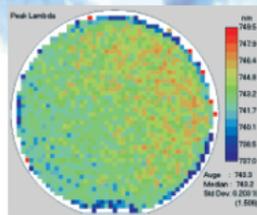
p-type GaAs Sheet
Resistance Uniformity

Average: 7.34 Ohm/sq.
Std Dev: 0.59%

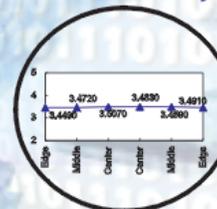
n-type GaAs Sheet
Resistance Uniformity

Average: 5.67 Ohm/sq.
Std Dev: 0.65%

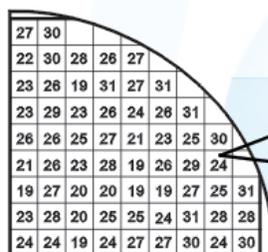
AlGaAs Wavelength Mapping



GaAs Absorption Material
Thickness: 3.48um Uniformity: 0.61%

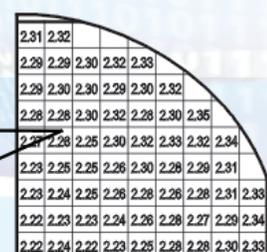


Dark Current Mapping ($300\mu m$ device @ -5V)



4-inch PIN wafer
Ave: 25 pA
Min: 19 pA
Max: 31 pA

Capacitance Mapping ($300\mu m$ device @ -2V)



4 inch PIN wafer
Ave: 2.28 pF
Stdev: 1.5%



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