VPEC's InGaAs PIN Epiwafer

Planar Type and Mesa Type up to 4-inch Wafer

- ★ Very low defect and particle densities on wafer surface for high device yield.
- ★ Very low background of i-InGaAs absorption layer (<5E14/cm3) for high speed application.
- ★ In-process device verification of dark current, capacitance and their uniformities using our own front side process and diffusion capabilities for high quality control.
- ★ Very low dark current in device performance (<100 pA for 300μm in-diameter InGaAs PIN device) for high device responsivity.
- ★ Low sheet resistance of p-type InGaAs layer and n-type InP buffer layer with great uniformities for mesa-type InGaAs PIN epiwafer.
- ★ Excellent on-wafer, wafer-to-wafer uniformities and batch-to-batch consistency up to 4-inch including material composition, layer thickness and doping concentrations for high cost-effectiveness.
- ★ Grown on n-type or Semi-Insulator substrates are all available.
- ★ Low cost with very high performance and high probe yield (>90%).

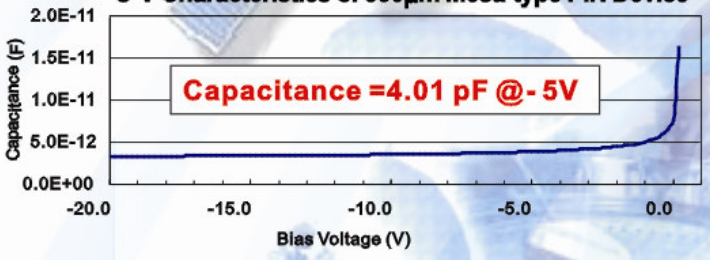
Mesa type InGaAs PIN epi-wafer

C-doped p-InGaAs layer
Undoped i-InGaAs absorption layer
Si-doped N-InP buffer layer
InP substrate

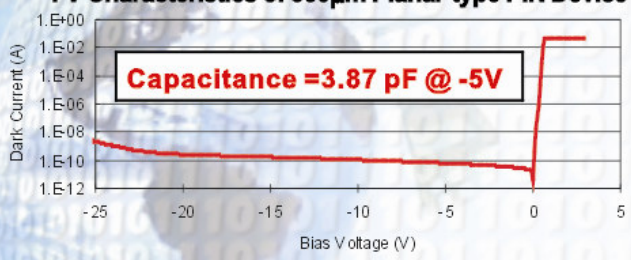
Planar type InGaAs PIN epi-wafer

Undoped i-InGaAs layer
Si-doped N-InP cap layer
Undoped i-InGaAs absorption layer
Si-doped N-InP buffer layer
InP substrate

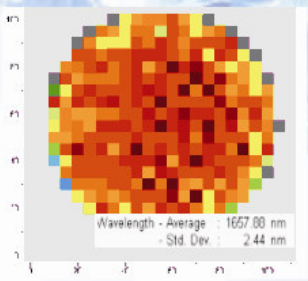
C-V Characteristics of 300μm Mesa-type PIN Device



I-V Characteristics of 300μm Planar-type PIN Device

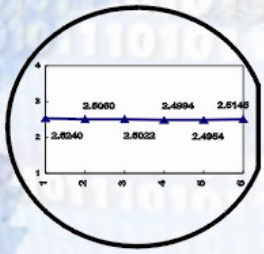


InGaAs Wavelength Mapping

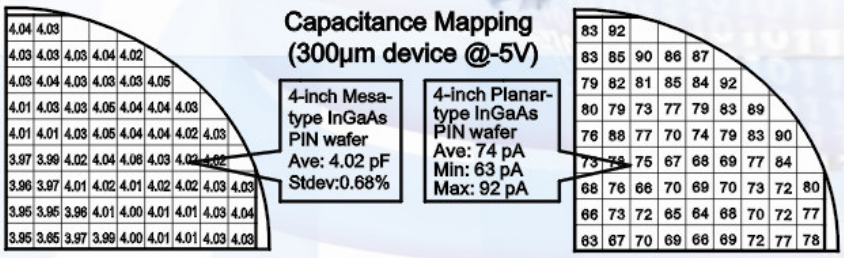


InGaAs Absorption Material

Thickness: 2.507um Uniformity: 0.42%



Capacitance Mapping (300μm device @-5V)



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