



InGaP/GaAs HBT Wafers: For high-performance power amplifier and high-speed digital applications.

Specifications

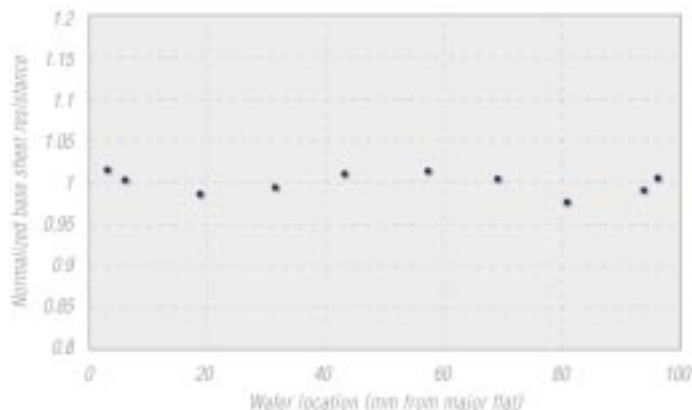
- 100 and 150 mm
- InGaP/GaAs
- MOCVD production
- Power amplifier and digital applications

Features and Performance

- InGaP emitter
- Carbon doped up to $4E19 \text{ cm}^{-3}$
- Full-wafer fab enables
 - high-level quality assurance
 - rapid improvement of HBT processes
 - high uniformity
- Quick-lot data for improved yield and quality

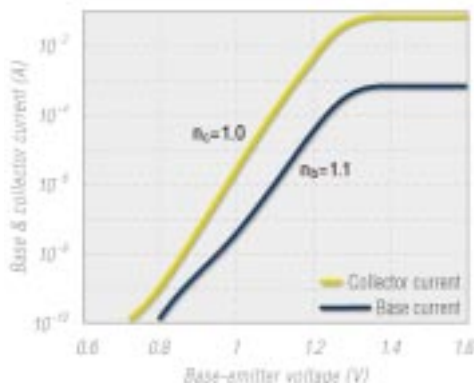
Designed specifically for today's CDMA and GSM wireless devices and OC-192 networking applications, Epiworks' InGaP/GaAs heterojunction bipolar transistors (HBT) deliver the performance and reliability you demand. Manufactured on an Aixtron MOCVD production platform, EpiHBT™ wafers set a new standard for quality, performance, and yield.

100 mm InGaP HBT base TLM uniformity



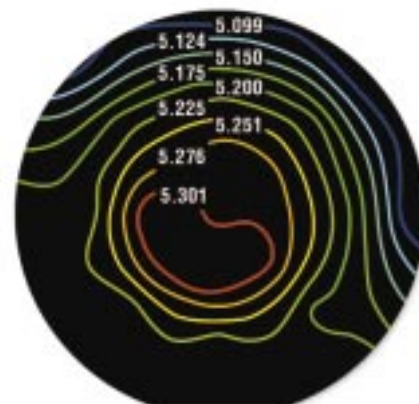
Normalized 100 mm base TLM uniformity (σ/μ) of less than 2%.

Gummel plot for InGaP/GaAs HBT



InGaP/GaAs HBT with a $75 \times 75 \mu\text{m}^2$ emitter. The current gain is ≈ 130 , and the gain-to-base sheet ratio is ≈ 0.55 .

Resistivity map of 150 mm InGaP HBT



150 mm InGaP HBT with typical uniformity of less than 2%.

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 EpiHBT™ wafers, EpiWorks also offers a range of products featuring advanced material systems for wireline and wireless applications, including our EpiDetector™, EpiFET™, and EpiLaser™ lines.

EpiWorks characterization of InGaP/GaAs HBT wafers

Parameter	Measurement technique	Standard tolerance of specified value
Sheet resistance	Contactless resistivity	$\pm 5\%$
Layer thickness	Profilometer and/or white light reflectance	$\pm 10\%$
Carrier concentration	Hall measurement	$\pm 10\%$
Large-area device data (Beta, R_{sb} , R_{ese} , V_{be} , BV_{ceo} , BV_{ebo} , BV_{cbo} , n_c , n_b)	Full wafer, large-area device process/test	—
Defect density (0.3 to $25 \mu\text{m}^2$)	Surfscan	$< 10 \text{ cm}^{-2}$