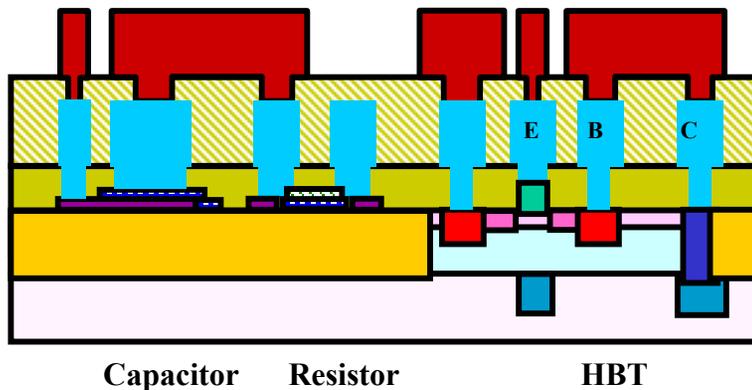


Schematic of Planar InP HBT



- Selective ion-implanted regions
- Planar sub-micron HBTs with regrown epi structure
- High speed InP DHBTs and mixed-mode ASICs

Goals, Objectives and Main Technical Approach

Objective

To create a revolutionary planar sub-micrometer InP DHBT VLSI technology, using novel planar selective ion-implantation techniques and design.

Technical Approach

- developing a planar processing technology and epi design with selective implanted and regrown regions
 - planar selective ion implanted InP materials
 - 0.25 μm and 0.15 μm planar InP DHBTs
 - reliability study of planar InP DHBTs
 - modeling and analysis of planar InP DHBT
 - MBE-grown InP/InGaAs and InP/GaAsSb DHBT
- novel high speed mixed-mode ASICs & sub-systems
- establishing a high volume manufacturing partner

Major Technical Accomplishments (since start of contract)

Major Work Remaining to Completion of Contract

Major Impact of Technology & Technology Transition Plan

- This planar technology offers high performance InP HBTs with small geometry, planar topology and good thermal conduction for high density integrated circuits with new mixed-mode architecture and ASIC design.
- The team will transfer the technology to a high volume manufacture partner for government purpose as part of options in this program.