# Abstracts

## Modeling of Ge-Si Heterojunction Bipolar Transistors for Use in Silicon Monolithic Millimeter-Wave Integrated Circuits

*S.A. Campbell and A. Gopinath. "Modeling of Ge-Si Heterojunction Bipolar Transistors for Use in Silicon Monolithic Millimeter-Wave Integrated Circuits." 1989 Transactions on Microwave Theory and Techniques 37.12 (Dec. 1989 [T-MTT] (1989 Symposium Issue)): 2046-2050.*

Previous work on high-resistivity silicon suggests that microstrip line dielectric losses cease to be significant above 30 GHz. Silicon-Germanium heterojunction bipolar transistors now provide a well-behaved three-terminal device capable of operating at microwave frequencies, making the fabrication of silicon monolithic millimeter-wave integrated circuits a genuine possibility. The trade-offs available to operate this device at millimeter-wave frequencies are discussed, and one-dimensional calculations along with two-dimensional simulations of transistor performance are presented.

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