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Title

Half-terahertz silicon/germanium heterojunction bipolar technologies: A TCAD based device architecture exploration

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Abstract

A 2D TCAD based device architecture exploration of SiGe:C NPN HBTs is presented. Two novel and one conventional self-aligned architectures are explored by process and device simulation. All these three architectures show their capability of achieving maximum oscillation frequency (f(max)) of 500 GHz for scaled layout rules.