Abstracts

Pulsed microwave characterization of an SiGe heterojunction bipolar transistor

S.A. Wartenberg and C.R. Westgate. "Pulsed microwave characterization of an SiGe heterojunction bipolar transistor." 1999 Transactions on Microwave Theory and Techniques 47.4 (Apr. 1999 [T-MTT]): 416-418.

This paper presents the first pulsed characterization of a silicon-germanium (SiGe) heterojunction bipolar transistor (HBT). Comparison is made of the SiGe HBT's performance to that of a Si bipolar junction transistor fabricated using the same mask set. Measurements made over a 400-/spl mu/s pulse show how device self-heating dramatically affects the microwave-frequency response of the devices. Using pulse-profiled S-parameters to find the intrinsic base resistance r/sub /spl pi// and base-collector capacitance C/sub jc/, plots reveal how these two elements significantly vary over the length of the pulse. The results emphasize the need for accurate characterization of microwave Si-based devices in pulsed applications.

❑ Return to main document.

Click on title for a complete paper.