Abstracts

Low-Noise Performance of SiGe Heterojunction Bipolar Transistors (1994 [MCS])

H. Schumacher, U. Erben and A. Gruhle. "Low-Noise Performance of SiGe Heterojunction Bipolar Transistors (1994 [MCS])." 1994 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 94.1 (1994 [MCS]): 213-216.

We have demonstrated, for the first time, a microwave noise figure below 1 dB at 10 GHz from a heterojunction bipolar transistor. The current and frequency dependence of the results obtained agree with the well-established Hawkins theory for bipolar transistor noise performance. An enhanced equivalent noise circuit including major parasitics provides valuable insight for the optimization of these devices for low-noise operation. Typical applications may include integrated RF front-ends where low-noise amplification is desired in addition to low phase-noise oscillation and mixing which typically benefit from bipolar devices.

❑ Return to main document.