Abstracts

Accurate extraction method for 1/f-noise parameters used in Gummel-Poon type bipolar junction transistor models

F.X. Sinnesbichler, M. Fischer and G.R. Olbrich. "Accurate extraction method for 1/f-noise parameters used in Gummel-Poon type bipolar junction transistor models." 1998 MTT-S International Microwave Symposium Digest 98.3 (1998 Vol. III [MWSYM]): 1345-1348.

In SPICE Gummel-Poon models one 1/f-noise source describes the low frequency noise behaviour of bipolar junction transistors (BJTs). In this paper we present a method to extract the respective model parameters from measured 1/f-noise data without the requirement of exactly determining the corner frequency f/sub c/, i.e. the frequency at which the 1/f-noise equals the device noise floor. This novel method is applicable to low-noise as well as to very noisy devices. We present results of different active devices. Verification of the extracted model parameters is done in an oscillator application. Measured and calculated phase noise results agree within measurement accuracy of /spl plusmn/2 dB.

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