Abstracts

Noise Characteristics of GaAs HBT's

G.N. Henderson and D.-W. Wu. "Noise Characteristics of GaAs HBT's." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1221-1224.

A complete characterization of the bias-, area-, and frequency- dependence of GaAs HBT noise characteristics is presented. It is shown that there is an optimum device area (emitter area) and bias condition for achieving a minimum noise figure, which for the M/A-COM process at 2GHz occurs at an area of roughly 120µm2 and a collector current of 2mA yielding a minimum noise figure of 1.4dB and an associated gain of 13dB. The measured noise characteristics are validated by an extracted equivalent circuit model with associated noise sources.

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