Abstracts

On the optimum width of GaAs MESFETs for low noise amplifiers

S.S. Taylor. "On the optimum width of GaAs MESFETs for low noise amplifiers." 1998 Radio Frequency Integrated Circuits (RFIC) Symposium 98. (1998 [RFIC]): 139-142.

A derivation of the optimum device width for minimizing noise figure at a specified bias current is presented for a cascode LNA circuit topology in GaAs MESFET technology. This configuration achieves excellent third-order intercept and input return loss by employing source and series gate inductance. The resulting noise figure can be chosen close to F/sub min/, or traded for acceptable noise figure and/or input IP3 at reduced current consumption. Computer simulations confirm the predicted results.

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