Abstracts

A new calculation approach of transistor noise parameters as a function of gatewidth and bias current

A. Gasmi, B. Huyart, E. Bergeault and L.P. Jallet. "A new calculation approach of transistor noise parameters as a function of gatewidth and bias current." 1997 Transactions on Microwave Theory and Techniques 45.3 (Mar. 1997 [T-MTT]): 338-344.

In this paper a new method to calculate the noise parameters of transistors T/sub i/ (MESFET or HEMT) as a function of gatewidth and drain-bias current is presented. This method needs the knowledge of the R, P, and C coefficients. It is based on the measurement of the noise parameters of a reference transistor T,/sub r/ at two bias points (I/sub ds1/ and I/sub ds2/), and the equivalent circuit elements' values of all transistors T/sub i/. Using this method, the noise parameters (F/sub min/, /spl Gamma//sub opt/, R/sub n/) for two MESFET's T/sub i/ biased at another current I/sub ds3/ are obtained. Good agreement between the predicted and measured noise parameters' values is obtained for a broad frequency range (4-20 GHz).

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