Abstracts

Analytical Expressions for Simplifying the Design of Broadband Low Noise Microwave Transistor Amplifiers (Short Papers)

G.N. Link and V.S.R. Gudimetla. "Analytical Expressions for Simplifying the Design of Broadband Low Noise Microwave Transistor Amplifiers (Short Papers)." 1995 Transactions on Microwave Theory and Techniques 43.10 (Oct. 1995 [T-MTT]): 2498-2501.

An analytical expression for the minimum achievable noise figure for a specified gain at a given frequency is derived for a microwave amplifier. The minimum noise figure is given in terms of the specified gain, the amplifier noise parameters, and the S parameters. Similarly, another expression for the maximum gain at a specified noise figure is derived in terms of the noise figure, the noise parameters, and the S parameters. It is shown that these expressions simplify the tradeoff considerations for broadband low noise amplifier design by avoiding the need to draw several constant noise and gain circles at each frequency of interest.

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