Abstracts

Noise performance of negative-resistance compensated microwave bandpass filters. Theory and experiments

L.-K.M. Cheng and Hil-Yee Chan. "Noise performance of negative-resistance compensated microwave bandpass filters. Theory and experiments." 2001 Transactions on Microwave Theory and Techniques 49.5 (May 2001 [T-MTT]): 924-927.

This paper examines both theoretically and experimentally the dependency of in-band noise performance upon circuit and device parameters of microwave filters employing negative-resistance compensation. By neglecting the influence of the induced gate noise source, a general expression for evaluating the noise figure of a second-order active filter is derived as a function of design parameters such as the transistor's noise figure, inductor's quality factor, and filter's bandwidth. In addition, factors affecting the optimization of the overall noise figure of these filters are discussed. For verification, the measured performance of two 900-MHz experimental MESFET filters are included.

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