Abstracts

R/sub n/ circles for series-feedback amplifiers

L. Boglione, R.D. Pollard and V. Postoyalko. "R/sub n/ circles for series-feedback amplifiers." 1999 Transactions on Microwave Theory and Techniques 47.7 (Jul. 1999, Part I [T-MTT]): 973-978.

Constant equivalent noise resistance R/sub n/ circles of a series-feedback amplifier are presented. They visualize on the series-feedback element plane, which is the region where a series feedback can be selected in order to decrease the value of R/sub n/. The R/sub n/ circles demonstrate that lossy series-feedback impedances can lower the equivalent noise resistance. This is an important point because it demonstrates that the feedback element can make the noise figure less sensitive to changes in the input mismatch; and careful selection of the feedback element may reduce the noise figure of the device, despite the loss in the feedback branch. The use of R/sub n/ circles along with circles for a constant magnitude of scattering parameter S/sub ij/ on the feedback plane is explained.

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