Abstracts

Stability of Multifrequency Negative-Resistance Oscillators

B.D. Bates and P.J. Khan. "Stability of Multifrequency Negative-Resistance Oscillators." 1984 Transactions on Microwave Theory and Techniques 32.10 (Oct. 1984 [T-MTT]): 1310-1318.

A general criterion is derived for the stablity of a negative-resistance oscillator with respect to small perturbations in the operating point. The derivation applies when the oscillator output consists of an arbitrary number of related frequency components, including possible nonharmonic components. Examples are given of the application of the stability criterion to coaxial IMPATT oscillator circuits, with experimental verification of the frequency and output power at theoretically determined stable operating points.

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