Abstracts

The Effects of Package Parasitics on the Stability of Microwave Negative Resistance Devices

J.W. Monroe. "The Effects of Package Parasitics on the Stability of Microwave Negative Resistance Devices." 1973 Transactions on Microwave Theory and Techniques 21.11 (Nov. 1973 [T-MTT] (Special Issue on Solid-State Microwave Power Amplifiers)): 731-735.

The results of investigations of the effect of parasitic package elements on the behavior of negative resistance amplifiers are presented. Three different package styles were considered. Also two different lead configurations were used. The packages were all mounted in 7-mm coaxial transmission line. The impedance of packages with and without leads was measured from 4 to 18 GHz using a manual network analyzer. These data were used as the basis for calculations to determine the values of elements in a simple three-element equivalent circuit model of the package. Using the equivalent circuit model experimentally derived for each package style, the impedance seen by the chip through the package to a 50-Omega load was calculated. Broad-band curves of the impedance seen by the chip are presented. The experimentally derived model of the package permits matching of chip and package for stability.

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