Abstracts

Characteristics of IMPATT-Diode Reflection Amplifiers (Nov. 1973 [T-MTT])

R.W. Laton and G.I. Haddad. "Characteristics of IMPATT-Diode Reflection Amplifiers (Nov. 1973 [T-MTT])." 1973 Transactions on Microwave Theory and Techniques 21.11 (Nov. 1973 [T-MTT] (Special Issue on Solid-State Microwave Power Amplifiers)): 668-680.

The results of an investigation of the gain, stability, phase shift, power addition, saturation, and bandwidth properties of microwave reflection amplifiers which employ IMPATT diodes as the active element, together with the dependence of all these properties upon the device material, doping profile, and operating conditions, are presented. Both Si and GaAs diodes are considered and experimental results demonstrating the validity of the model are provided, together with other experimentally determined characteristics relating gain, saturation, and bandwidth to current density and tuning conditions. Finally, measurements illustrating the degradation of response as a result of subharmonic oscillation are given.

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