Abstracts

A New Technique for the Characterization of Microwave Avalanche Diodes (Correspondence)

P.W. Shackle. "A New Technique for the Characterization of Microwave Avalanche Diodes (Correspondence)." 1970 Transactions on Microwave Theory and Techniques 18.11 (Nov. 1970 [T-MTT] (Special Issue on Microwave Circuit Aspects of Avalanche-Diode and Transferred Electron Devices)): 995-998.

Sample theoretical arguments are used to show that at low current densities the negative-resistance properties of a packaged avalanche diode may be represented by only three parameters. These three parameters may be easily measured with the diode in a nonoscillating state. Once these parameters have been measured for a diode, its oscillator performance can be predicted for any well-defined circuit with an accuracy of about 10 percent. An example characterization of a diode is described, and the predicted and experiments performances of this diode when used in an oscillator circuit are then compared.

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