Abstracts

Characterization of Planar Resonators by Means of Integrated Schottky Diodes

A. Stiller, M. Singer, K.M. Strohm and E.M. Biebl. "Characterization of Planar Resonators by Means of Integrated Schottky Diodes." 1995 MTT-S International Microwave Symposium Digest 95.3 (1995 Vol. III [MWSYM]): 1151-1154.

In this paper a method is presented to examine the suitability of planar structures to work as a resonator for IMPATT diodes in a frequency range above 70 GHz. The IMPATT diode is replaced by a SCHOTTKY diode previously characterized by impedance. It is suggested to test the suitability of the resonator for an IMPATT diode by employing the radiation characteristics of the structure. This set-up allows the determination of the detector's sensitivity depending on the frequency. The sensitivity corresponds to the matching of the resonator and the SCHOTTKY diode. Thus, for maximum sensitivity the equation Z/sub SCHOTTKY/ = -Z /super star//sub IMPATT/ allows to assess the suitability of the planar structure to function as a resonator for an IMPATT diode.

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