

Abstracts

A New Approach in CAD of MM-Wave IMPATT Oscillators

V. Stoiljkovic, M.J. Howes and V. Postoyalko. "A New Approach in CAD of MM-Wave IMPATT Oscillators." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 603-605.

A computer synthesis of a waveguide CW IMPATT oscillator is presented. The oscillator design is treated as an impedance-matching problem, using a non-isothermal drift-diffusion model for the IMPATT diode. An optimum design of a passive circuit is described, together with a new technique for calculating the output power-oscillating frequency dependence. Comparison with experimental results gives good agreement at W-band frequencies (75-110 GHz).

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