

Abstracts

Modeling, Analysis and Optimization of GUNN Diode VCO

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In this paper, a new model of Gunn diode VCO is established on the basis of computation of coupling disc capacitance between Gunn diode and varactor using spectral-domain Hankle transformation. For the first time, the nonlinear analysis of Gunn diode VCO has been carried out by using harmonic balance technique. The experimental results are compared with the computed results. It is shown that the developed model and analysis program are available and effective. A special optimization procedure to find the doping power factor of varactor is proposed in order to get optimal tuning linearity.

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