

Abstracts

Simulation Study of Harmonic Oscillators

K. Solbach. "Simulation Study of Harmonic Oscillators." 1982 Transactions on Microwave Theory and Techniques 30.8 (Aug. 1982 [T-MTT]): 1233-1237.

In the last few years, the operating modes of Gunn oscillators for frequencies above 60 GHz have been discussed controversially. In this context, a general theoretical circuit model for oscillators operating in the fundamental and in the second-harmonic modes is studied. The model employs a simple cubic I - V characteristic of the active element and separate embedding circuits for the fundamental and second-harmonic frequencies. The current and voltage waveforms of both modes are contrasted. The oscillator source impedances and the external Q of the second-harmonic mode oscillator are calculated.

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