Abstracts

Circuit Analysis and Design of Radial Pretuned Modules Used for Millimeter-Wave Oscillators

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This paper summarizes the use of the radial pretuned module for the realization of millimeter-wave IMPATT or Gunn oscillators. Circuit analysis and derivation of an analytical model for the prediction of the characteristics of this type of oscillator are reviewed and the design of optimal structures is reported. Experimental results are also presented in order to justify the assumptions, which have been done to determine the range of validity of this model. This is done either by direct measurements or by the study of the behavior of millimeter-wave oscillators. Finally, we summarize the typical results obtained with this modular approach and its advantages versus classical ones.

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