Abstracts

Frequency Doublers Using Varactors Exhibiting "Punch-Through" Capacitance-Voltage Behavior (Correspondence)

C.L. Chao. "Frequency Doublers Using Varactors Exhibiting "Punch-Through" Capacitance-Voltage Behavior (Correspondence)." 1966 Transactions on Microwave Theory and Techniques 14.1 (Jan. 1966 [T-MTT]): 43-45.

Recently, a number of authors have given the analysis of the overdrive doubler for abrupt-junction, graded-junction, and stepwise-junction varactor doublers. All previous work has stimulated considerable interest in the prediction of power and efficiency of frequency doublers Iusing varactors exhibiting a general nonlinearity. This discussion is concerned with the detailed analysis of the "punch-through" behavior varactor doubler to determine the conditions of optimum input and output resistances, maximum conversion efficiency, and power. The results will generally be determined by numerical techniques because of the algebraic complexity of the solutions. The analysis in this discussion asumes the varactor to be imbedded in a lossless tuned circuit.

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