Abstracts

The Modified Series Model for an Abrupt-Junction Varactor Frequency Doubler

B.J. Levin. "The Modified Series Model for an Abrupt-Junction Varactor Frequency Doubler." 1966 Transactions on Microwave Theory and Techniques 14.4 (Apr. 1966 [T-MTT]): 184-188.

The theoretical performance of an abrupt-junction high-quality epitaxial varactor diode used as a harmonic frequency doubler is considered. The modified series model for the device, consisting of a nonlinear elastance (reciprocal of capacitance) and a nonlinear resistance, is presented. A comparison is made between the performance limits derived for the modified series model and similar results based on the conventional series model. In addition to dissipating some power, the charge-variable series resistance contributes to the frequency conversion of the device.

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