Abstracts

Technology Related Design of Monolithic Millimeter-Wave Schottky Diode Mixers

J.-M. Dieudonne, B. Adelseck, K.-E. Schmegner, R. Rittmeyer and A. Colquhoun. "Technology Related Design of Monolithic Millimeter-Wave Schottky Diode Mixers." 1992 Transactions on Microwave Theory and Techniques 40.7 (Jul. 1992 [T-MTT] (Special Issue on Process-Oriented Microwave CAD and Modeling)): 1466-1474.

The development of monolithic millimeter-wave Schottky diode mixers based on technological parameters is described. The complete equivalent circuit of the monolithic Schottky diode is calculated taking into account the semiconductor layer structure and the device geometry. This model has been used in a harmonic balanced software for designing monolithic single balanced mixers. In V-band a minimum DSB noise figure of 3.3 dB and a minimum conversion loss of 6 dB have been achieved. In W-band a minimum DSB noise figure of 4 dB and a minimum conversion loss of 7 dB have been obtained.

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