Abstracts

Rigorous Design of a 94 GHz MMIC Doubler

S.-W. Chen, T. Ho, F.R. Phelleps, J.L. Singer, K. Pande, P. Rice, J. Adair and M. Ghahremani. "Rigorous Design of a 94 GHz MMIC Doubler." 1993 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 93.1 (1993 [MCS]): 89-92.

A 94 GHz monolithic microwave integrated circuit (MMIC) frequency doubler with 25% efficiency and 65 mW output power has been developed. Variations in the diode's performance as a doubler with its geometry and doping profile were analyzed for optimum efficiency and output power. Optimum doubler performance was obtained as a consequence of use of the optimized diode parameters resulting from this analysis. Measured results of the diode parameters as well as doubler response showed excellent agreement with the analysis. The doubler exhibits better performance than those reported in the literature at similar frequencies using an MMIC approach.

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