

Abstracts

A High-Performance 94-GHz MMIC Doubler

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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 the 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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