Abstracts

High-Frequency Efficient Reflection Multiplier (Short Papers)

K. Rauschenbach, C.A. Lee and M.V. Schneider. "High-Frequency Efficient Reflection Multiplier (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.3 (Mar. 1991 [T-MTT]): 575-579.

We propose and calculate the performance of a new resistive balanced reflection multiplier capable of high-efficiency operation at submillimeter wavelengths, beyond the useful range of varactor-type multipliers. The multiplier and associated filters can be fabricated with monolithic thin-film techniques to sufficiently minimize high-frequency parasitic elements so that near ideal efficiencies can be realized. A closed-form distributed analysis is used to show that this reflection design can achieve a 6.7% third-harmonic conversion efficiency, an approximate 23% increase compared with an ideal resistive balanced transmission multiplier.

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