

Abstracts

Phasor Diagram Analysis of Millimeter-Wave HEMT Mixers (Short Papers)

Y. Kwon and D. Pavlidis. "Phasor Diagram Analysis of Millimeter-Wave HEMT Mixers (Short Papers)." 1995 Transactions on Microwave Theory and Techniques 43.9 (Sep. 1995, Part I [T-MTT]): 2165-2167.

A phasor diagram method is developed based on an analytic approach for conversion gain evaluation in HEMT mixers. The analytical expressions derived in this work take into account the mixing terms of nonlinear elements and provide a simple method to evaluate the conversion gain. The phasor diagram analysis offers physical insight into the mixing mechanisms and identifies the role of each harmonic of the nonlinear elements of HEMT's on the conversion gain. The method is validated with the experimental data of W-band monolithic InP-based HEMT mixers.

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