Abstracts

Voltage-controlled biphase attenuator and vector synthesizer for monolithic microwave signal processors

Y. Suzuki, T. Ohira and H. Ogawa. "Voltage-controlled biphase attenuator and vector synthesizer for monolithic microwave signal processors." 1998 Transactions on Microwave Theory and Techniques 46.11 (Nov. 1998, Part II [T-MTT] (Special Issue on Innovative Integration Techniques for Microwave and Millimeter-Wave Circuits)): 1982-1985.

A GaAs monolithic voltage-controlled biphase attenuator and a vector synthesizer, which utilize remote-pinchoff cold field-effect transistors (RePOFETs), are newly developed for microwave signal-processor applications. Their features are very small circuit size, which permits dense integration, and high control linearity. Lumped-constant topologies and internal impedance optimization successfully reduce the sizes of the attenuator and vector synthesizer to just 0.5 and 2.1 mm/sup 2/ respectively. The control sensitivity deviation exhibited is within /spl plusmn/5% for over 50% of the full control range. The uniformity of the measured vector constellation is also improved by the RePOFETs.

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