Abstracts

Planar-Circuit-Type 3-dB Quadrature Hybrids (Dec. 1994, Part II [T-MTT])

T. Kawai and I. Ohta. "Planar-Circuit-Type 3-dB Quadrature Hybrids (Dec. 1994, Part II [T-MTT])." 1994 Transactions on Microwave Theory and Techniques 42.12 (Dec. 1994, Part II [T-MTT] (1994 Symposium Issue)): 2462-2467.

The performance of a conventional branch-line 3-dB hybrid tends to deteriorate with increasing operation frequency because of a pair of low impedance series line sections. This paper treats planar-circuit-type 3-dB quadrature hybrids using a rectangular disk, and realizes good characteristics comparable to those of an ideal branch-line hybrid over a wide operation frequency range by efficacious devices without destroying the simple-shaped configuration. In addition, a method of broadening the hybrid property is examined, and hybrids with flat coupling, e.g., a relative bandwidth of 25%, are obtained at various operation frequencies. These theoretical results are verified experimentally.

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