Abstracts

Compact and broad-band three-dimensional MMIC balun

K. Nishikawa, I. Toyoda and T. Tokumitsu. "Compact and broad-band three-dimensional MMIC balun." 1999 Transactions on Microwave Theory and Techniques 47.1 (Jan. 1999 [T-MTT]): 96-98.

This paper presents a simple and effective technique which compensates for the amplitude and phase differences of the Marchand balun. Compensation is accomplished by interconnecting a short transmission line to a pair of couplers. As a result, Marchand balun with operation frequency ranging as wide as 8.2-30 GHz is achieved. To fabricate the prototype, we adopt three-dimensional monolithic-microwave integrated-circuit technology together with a 2.5 /spl mu/m/spl times/4 layer polyimide structure stacked over a GaAs wafer. The topology yields a circuit area as small as 0.2 mm/spl times/0.4 mm for the balun.

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