Abstracts

A New Planar Double-Double Balanced MMIC Mixer Structure (1991 [MCS])

J. Eisenberg, J. Panelli and W. Ou. "A New Planar Double-Double Balanced MMIC Mixer Structure (1991 [MCS])." 1991 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 91.1 (1991 [MCS]): 69-72.

Coplanar waveguides, slot lines and coplanar strips are combined to realize a MMIC double-double balanced mixer (DDBM) in which all circuitry is on the top side of the substrate and no via holes are required. The DDBM exhibits RF, LO, and IF bandwidths of 6-20 GHz, 8-18 GHz and 2-7 GHz respectively with conversion loss ranging between 6.2 and 9.8 dB, and RF to IF, LO to IF and LO to RF isolations all greater than 20 dB. The mixer was designed analytically using the harmonic balance method to assess key performance parameters. It is believed to be the first planar diode MMIC DDBM to be reported.

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