Abstracts

A Monolithic Mixer IC: Design and Characteristics on N-Implant Only, Buried P- and MBE Wafers

S.S. Bharj, Y.-H. Yun and D. Hou. "A Monolithic Mixer IC: Design and Characteristics on N-Implant Only, Buried P- and MBE Wafers." 1990 MTT-S International Microwave Symposium Digest 90.2 (1990 Vol. II [MWSYM]): 899-902.

A monolithic high performance MESFET mixer integrated circuit has been developed for general purpose applications. In order to achieve high dynamic range, low power consumption and small size, active circuit techniques have been utilized for applications up to 4 GHz. The balanced mixer, which consists of active phase splitting networks and commutator cell was fabricated on different wafers having N-implant only, Buried P-layer and Molecular Beam Epitaxy. The monolithic integrated circuit has shown a conversion gain of 1 dB with RF and LO rejections greater than 20 dB, up to 4 GHz. A detailed comparison of the performance of the IC on different wafers is presented.

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