Abstracts

Ion Implanted W-Band Monolithic Balanced Mixers for Broadband Applications

T.N. Trinh, W.S. Wong, D. Li and J.R. Kessler. "Ion Implanted W-Band Monolithic Balanced Mixers for Broadband Applications." 1987 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 87.1 (1987 [MCS]): 89-92.

An all ion-implanted monolithic broadband balanced mixer fabricated on a GaAs substrate for operation at W-band frequencies is described. A deep implanted buried n+ layer was used to minimize the diode series resistance. Ohmic contacts were formed by standard alloying of planar eutectic AuGe metallization into the n+ layer. The mixer diode structure is completely compatible with GaAs MESFET-based monolithic integrated circuit processing techniques. A conversion loss from 6.8 to 10 dB has been measured over an RF range of 75 to 88 GHz, with a LO drive of 10 dBm at 92 GHz.

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