Abstracts

A highly linear single balanced mixer based on heterojunction interband tunneling diode (2001 Vol. I [MWSYM])

A. Cidronali, G. Collodi, C. Toccafondi, M. Deshpande, N. El-Zein, G. Manes, V. Nair and H. Goronkin. "A highly linear single balanced mixer based on heterojunction interband tunneling diode (2001 Vol. I [MWSYM])." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 91-94 vol.1.

In this paper a compact and highly linear MMIC single balanced mixer based on heterojunction interband tunnel diode (HITD) technology working at 1.8 GHz, is described. The prototype consisted of a pair of HITDs biased at zero volts and a lumped element directional coupler with arbitrary impedance terminations. The salient feature of the mixer is the linearity due to the quasi square law DC characteristics exhibited by the device around zero voltage. The design techniques along with a detailed experimental validation are provided. The prototype exhibited an IIP3 power level of 17 dBm and a 1 dB compression point of 7.5 dBm.

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