Abstracts

Monolithic VCO and Mixer for Q-Band Transceiver Using InP-Based HBT Process

L. Tran, J. Cowles, T. Block, H. Wang, J. Yonaki, D. Lo, S. Dow, B. Allen, D. Streit, A. Oki and S. Loughran. "Monolithic VCO and Mixer for Q-Band Transceiver Using InP-Based HBT Process." 1995 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 95.1 (1995 [MCS]): 101-104.

Monolithic VCOs and mixers have been developed for Q-band FMCW transceiver applications using an InP-based HBT process. Tuning range, output power, and phase noise have been characterized for the HBT VCOs, while conversion loss and noise figure were measured for the Schottky diode mixers. The VCO shows 10-dB better phase noise performance over a similar design based on a GaAs HBT process. Measured at very low IF, the InP-based Schottky diode mixer demonstrates more than 1 dB noise figure improvement over the same design based on GaAs Schottky process. The InP mixer also requires a very low LO power at only 1 dBm for a 8dB conversion loss.

❑ Return to main document.