Abstracts

Monolithic Circuits for 60 GHz Communication Systems Using Pseudomorphic HEMT Process

P. Gamand, P. Suchet, M. Iost, M. Pertus, A. Collet, J. Bellaiche, P.A. Rolland and N. Haeze. "Monolithic Circuits for 60 GHz Communication Systems Using Pseudomorphic HEMT Process." 1992 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 92.1 (1992 [MCS]): 65-67.

A wide band image rejection mixer and a high real estate efficiency amplifier have been designed and fabricated with a 0.25 µm pseudomorphic HEMT process. The mixer itself integrated on 0.6 mm², includes an in-phase power splitter, two single ended mixers and a quadrature phase shifter. It exhibits better than 30 dB of image rejection from 52 to 60 G Hz RF band with 14 dB of conversion loss including the power splitter. Combined with two 0.3 mm² IF monolithic amplifiers, the mixer exhibits 8 to 9 dB of conversion gain from 0.5 to 3 GHz IF frequency bandwidth. The amplifier, operating around 62-63 GHz, exhibits better than 8 dB/mm² gain density, with an I/O VSWR of 2.5.

❑ Return to main document.