Abstracts

Push-push oscillators for 94 and 140 GHz applications using standard pseudomorphic GaAs HEMTs

S. Kudszus, W.H. Haydl, A. Tessmann, W. Bronner and M. Schlechtweg. "Push-push oscillators for 94 and 140 GHz applications using standard pseudomorphic GaAs HEMTs." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1571-1574 vol.3.

Millimeter wave harmonic oscillators taking advantage of the push-push principle are demonstrated, allowing the use of the second harmonic of the oscillators to extend the applicable frequency range of standard pseudomorphic HEMTs to 94 and 140 GHz. Two configuration schemes are realized. An improved approach using a drain-connected pair of oscillators for efficient and compact circuit design and high output power is presented. Using this approach, oscillators at 94 GHz and 135 GHz were developed, with more than 0 dBm and -2 dBm output power and a high suppression of the fundamental signal of 38 dBc and 20 dBc, respectively. All MMICs were realized in a standard 0.13 /spl mu/m pHEMT technology using optical stepper lithography.

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