Abstracts

A very wide-tuning range 5-GHz-band Si bipolar VCO using three-dimensional MMIC technology

K. Kamogawa, K. Nishikawa, C. Yamaguchi, M. Hirano, I. Toyoda and T. Tokumitsu. "A very wide-tuning range 5-GHz-band Si bipolar VCO using three-dimensional MMIC technology." 1997 MTT-S International Microwave Symposium Digest 3. (1997 Vol. III [MWSYM]): 1221-1224.

The first completely integrated, wide-tuning range 5-GHz-band 0.5-/spl mu/m Si bipolar transistor voltage-controlled oscillator (VCO), based on three-dimensional MMIC technology, is presented. A 33% frequency tuning range from 4.02 to 5.35 GHz is obtained at the collector voltage of 3 V because the base-emitter resistance of the active transistor works like a varistor with a large ratio. Furthermore, the oscillation frequency is remarkably linear against the controlled base bias. The achieved phase noise is -108 dBc/Hz at 1 MHz offset from the carrier.

❑ Return to main document.