Abstracts

New High-Performance Voltage-Controlled LC-Oscillator

N.T. Tchamov and P. Jarske. "New High-Performance Voltage-Controlled LC-Oscillator." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1511-1514.

VCO with serial LC-contour, loaded with low input/output impedances of a resonance loop-amplifier, provides stable frequency of oscillations, and employs very low-Q inductors on Silicon. The control voltage changes the bias in one of the amplifying sections, and indirectly the voltage over P-N junction, which acts as a Varactor. This way the separation between the control and oscillation circuits is provided effectively. On 0.8µm BiCMOS technology (17 GHz NPN) the new VCO circuit operates with 0.4mW from only 1V, and produces 600mV sinusoid on 6.6GHz with 3.6% non-linearities, and low-phase noise. Suitable for modern communication and microprocessor circuits.

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