Abstracts

A Si-SiGe HBT Dielectric Resonator Stabilized Microstrip Oscillator at X-Band Frequencies

U. Guttich, A. Gruhle and J.F. Luy. "A Si-SiGe HBT Dielectric Resonator Stabilized Microstrip Oscillator at X-Band Frequencies." 1992 Microwave and Guided Wave Letters 2.7 (Jul. 1992 [MGWL]): 281-283.

Design, fabrication, and performance of the first reported hybrid dielectric resonator oscillator (DRO) using a Si-SiGe heterojunction bipolar transistor (HBT) as the active device are described. The employed HBT with layer structures completely grown by MBE exhibits f/sub T/ and f/sub max/ values in the range of 38 GHz. At 9.6 GHz, an oscillator output power of 10 mW with a conversion efficiency of 17.5% is measured. Phase noise N/C/sub FM/ of -85 dBc (1 Hz) is determined at 100 kHz off carrier.

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