Abstracts

A 60-GHz MMIC-Compatible TED-Oscillator

A.L. Springer, C.G. Diskus, K. Lubke and H.W. Thim. "A 60-GHz MMIC-Compatible TED-Oscillator." 1995 Microwave and Guided Wave Letters 5.4 (Apr. 1995 [MGWL]): 114-116.

Experimental results achieved with planar GaAs transferred electron oscillators at V-band frequencies are reported in this contribution. The active devices are MESFET-like structures with a Schottky-gate controlling the electron injection into the drift region. The electron injection is adjusted to a level yielding a frequeucy independent negative differential resistance which is exploited for millimeter-wave power generation. The highest measured CW output power and efficiency are 6.72 mW and 1.3 % at 60.33 GHz, respectively. These results are comparable to those obtained with transistor oscillators which are much more difficult to fabricate due to their extremely small dimensions in the 0.1 µm range.

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