Abstracts

GaAs HBT operating as integrated V- to W-band Gunn oscillator

M. Rudolph, R. Doerner and P. Heymann. "GaAs HBT operating as integrated V- to W-band Gunn oscillator." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1737-1740 vol.3.

Experimental results on GaAs HBT oscillators are presented exploiting the Gunn effect in the collector region. The HBTs are operated beyond f/sub max/ as MMIC-compatible two-port transferred-electron devices (TEDs) oscillating at millimeter-wave frequencies. The oscillation frequency of a single device can be tuned in the range of 40-80 GHz, mainly depending on collector voltage. Maximum output power is 0.3 mW at 62 GHz. Phase noise can be considerably improved by subharmonic injection achieving values of -90 dBc/Hz @ 100 kHz.

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