Abstracts

Monolithic Millimeter-Wave IMPATT Oscillator and Active Antenna (1988 Vol. II [MWSYM])

N. Camilleri and B. Bayraktaroglu. "Monolithic Millimeter-Wave IMPATT Oscillator and Active Antenna (1988 Vol. II [MWSYM])." 1988 MTT-S International Microwave Symposium Digest 88.2 (1988 Vol. II [MWSYM]): 955-958.

GaAs IMPATT diodes were monolithically integrated with a microstrip resonator and a loop antenna to produce a single-chip millimeter-wave oscillator module. Devices operating at 43.3 GHz produced 27 mW cw output power with 7.2% conversion efficiency. Linear arrays of such radiating elements were produced and radiation patterns were determined as a function of inter-element spacings and element numbers. This monolithic oscillator chip was also directly coupled to waveguide producing an inexpensive millimeter-wave source.

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