Abstracts

A Stabilized MIC Oscillator Using a Germanium Avalanche Diode (Short Papers)

S. Nanbu. "A Stabilized MIC Oscillator Using a Germanium Avalanche Diode (Short Papers)." 1976 Transactions on Microwave Theory and Techniques 24.3 (Mar. 1976 [T-MTT]): 151-153.

A stabilized X-band oscillator using a germanium avalanche diode in a microwave integrated circuit (MIC) is proposed. The stabilization is achieved by coupling a transmission cavity to the resonant cavity in which an avalanche diode is embedded. A mode-jumping problem inherent in a coupled-cavity oscillator was solved coupling a third varactor-embedded low-Q cavity to the transmission cavity. As a result, single-mode oscillation in an MIC oscillater was successfully obtained. Varactor tuning can also be realized with as small a change in output power as 7 percent for a tuning range of 30 MHz. The experimental results and the theoretical analysis of the new stabilized oscillator are given.

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