Abstracts

Microstrip High-Power High-Efficiency Avalanche-Diode Oscillator

S.-G. Liu. "Microstrip High-Power High-Efficiency Avalanche-Diode Oscillator." 1969 Transactions on Microwave Theory and Techniques 17.12 (Dec. 1969 [T-MTT]): 1068-1071.

A simple microstrip oscillator circuit has been designed and operated satisfactorily with high-power high-efficiency avalanche diodes. The power output obtained from a single diode chip is ahout 100 watts at 1 GHz with efficiencies of 25 to 30 percent. Mechanical tuning capability of a few hundred megahertz and a combined power output from series-connected diodes have been demonstrated using the circuit. An essential part of the circuit is a low-pass filter tuning section which enables the circuit to support high-order harmonics including the transit-time frequency and prevents them from getting to the load. Probe measurements of the electric field show strong second as well as third harmonics inside the circuit.

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