Abstracts

3W, Q Band Solid State Amplifier

G. Jerinic, J. Fines and M. Schindler. "3W, Q Band Solid State Amplifier." 1983 MTT-S International Microwave Symposium Digest 83.1 (1983 [MWSYM]): 481-483.

The design of Q band IMPATT diode cavity combiners is discussed. The design is based on a three-step closed form algorithm. The first step is the characterization of the passive circuit (cavity and diode package) using an automatic network analyzer. In the second step, a computer program is used to generate diode device lines. The third step is the load line synthesis for predictable operation as either an injection-locked oscillator or a stable negative resistance amplifier. These procedures were used to design a three-diode, two-stage amplifier using 2-watt, 44-GHz GaAs IMPATT diodes. An output power of 3 watts with 11 dB gain was achieved.

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