Abstracts

Microwave Integrated IMPATT Diode Radiator

H.W. Cooper, C. Moskowitz, M.R. Natale and T. Andrews. "Microwave Integrated IMPATT Diode Radiator." 1968 G-MTT International Microwave Symposium Digest and Technical Program 68.1 (1968 [MWSYM]): 72-76.

Microwave integrated circuits, coupled with the capability of microwave power generation in bulk and junction semiconducting devices, have opened the possibility for constructing economical integrated beacons in which the entire package, including the prime power source, is of the order of a cubic inch. In order to realize the economy and efficiency inherent in these devices, it is necessary to abandon the concepts of distributed elements which have proved so useful in conventional propagating structures and adopt and develop instead means of determining the characteristics of extremely small integrated structures having generally low impedance levels characteristic of semi-conductor power generators. These techniques are described and developed for use in designing the integrated source-radiator. The device described in this paper consists of an X band dipole which is vapor deposited on an alumina substrate and integrally connected to an IMPATT oscillator thru an impedance transforming network together with an r. f. decoupled bias network.

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