Abstracts

Multiple Element Oscillators Utilizing a New Power Combining Technique (Dec. 1992 [T-MTT])

A. Mortazawi and B.C. De Loach, Jr.. "Multiple Element Oscillators Utilizing a New Power Combining Technique (Dec. 1992 [T-MTT])." 1992 Transactions on Microwave Theory and Techniques 40.12 (Dec. 1992 [T-MTT] (1992 Symposium Issue)): 2397-2402.

A new method is presented to combine the microwave and millimeter wave power generated by many two or three terminal devices. This method forms a single resonant structure from many active devices, and therefore the combiner is stable and does not suffer from simultaneous multimode difficulties. This technique produces compact structures and is readily adaptable to monolithic integration. Through an eigenvalue-eigenvector analysis of the structure, multiple device circuit interactions are investigated. Furthermore, the oscillation stability is demonstrated by large signal analysis of the circuit in the time domain. Experimental results from several power combiners utilizing Gunn diodes are presented.

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