Abstracts

Feedback optimization of grid oscillators

W.A. Shiroma and Z.B. Popovic. "Feedback optimization of grid oscillators." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 1053-1056.

We present a method for optimizing the feedback level in a transistor-grid oscillator. Based on the approximate large-signal S-parameters of the transistor, an equivalent circuit model for the grid is synthesized for maximum oscillator power. The resulting circuit serves as a convenient benchmark for determining the level of feedback for a given grid. Experimental results demonstrate how the substrate thickness and metallization pattern affect power performance. A grid with an asymmetric unit cell is shown to deliver almost 60% more effective radiated power than a grid with a symmetric unit cell.

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