Abstracts

Modeling of Circular Spiral Inductors for MMICs

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A computer model for planar circular spiral inductors considering the distributed nature, the substrate backside metallization and the metallization thickness is presented. The inductance of the structure is calculated using a rigorous evaluation of the two-dimensional inductance integral. The influence of the substrate backside metallization is considered by introducing a mirror coil and all capacitive effects are calculated from high accurscy, frequency dependent formulas for coupled microstrip lines. The theoretical results are discussed and compared to measurements with MIC inductors on dielectric substrate and MMIC inductors on GaAs.

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