Abstracts

Modeling of inductors and transformers (2001 [RFIC])

S.R. Kythakyapuzha and W.B. Kuhn. "Modeling of inductors and transformers (2001 [RFIC])." 2001 Radio Frequency Integrated Circuits (RFIC) Symposium 01. (2001 [RFIC]): 283-286.

This paper deals with modeling of spiral inductors and transformers. A lumped element approach is used to represent the spirals on a turn-by-turn basis. A previously reported approach for modeling of substrate eddy currents is employed and a new approach for modeling of current crowding effects is introduced. Both are modeled using inductor and resistance loops with coupling to the turn inductances. The program is written to generate a Spice sub-circuit for a wide variety of inductors and transformers. The results are validated against measured values of spirals implemented in a six-layer-copper bulk CMOS process and an SOI process.

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