Abstracts

The Power Transfer Mechanism of MMIC Spiral Transformers and Adjacent Spiral Inductors

G.E. Howard, J. Dai, Y.L. Chow and M.G. Stubbs. "The Power Transfer Mechanism of MMIC Spiral Transformers and Adjacent Spiral Inductors." 1989 MTT-S International Microwave Symposium Digest 89.3 (1989 Vol. III [MWSYM]): 1251-1254.

With its accuracy verified by many tests, the software WATMIC-EMsim is now used to analyze the coupling between (I) the two coils of an MMIC transformer and (II) two adjacent MMIC square spiral inductors. It is found that: (I) for the transformer, the simple magnetic coupling in power transfer between the two coils only occurs at the low frequency end of the microwave frequency, and (II) for the adjacent inductors, the coupling S/sub 21/ is very small. It begins at -26 dB when the two spirals nearly touch and rapidly drops as a function of (1/d)/sup 7/ where d is the center to center separation between the two spirals.

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