Abstracts

A Simple Circuit Model for Resonant Mode Coupling in Packaged MMICs

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Neglecting the effect of enclosing an MMIC circuit in a resonant conducting package can have undesirable consequences such as power loss, poor isolation, and circuit instabilities. In principle these effects can be predicted by currently available full-wave CAD programs. In practice, however, such programs are difficult to implement for a complex circuit and are very CPU intensive when realistic box/circuit sizes are used. A simpler approach would be useful. In this paper we will develop a simple circuit model which will predict coupling effects between various circuit components due to a package resonance. It is easily implemented on commercially available CAD packages and requires several orders of magnitude less CPU time than a full-wave technique.

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