Abstracts

The influence of a top cover on the leakage from microstrip line (Dec. 2000 [T-MTT])

F. Mesa, A.A. Oliner, D.R. Jackson and M.J. Freire. "The influence of a top cover on the leakage from microstrip line (Dec. 2000 [T-MTT])." 2000 Transactions on Microwave Theory and Techniques 48.12 (Dec. 2000 [T-MTT] (Special Issue on 2000 International Microwave Symposium)): 2240-2248.

When a microwave integrated circuit is enclosed in a package, the top cover causes the transmission lines used in the circuit to become leaky at a lower frequency than otherwise. This effect is investigated in detail for microstrip line, and is found to be particularly dramatic. The leakage is strong enough to produce spurious effects that can ruin the performance of the circuit. The amplitude behavior is obtained by numerically solving for the current on a covered microstrip line due to a delta-gap source excitation. The results clearly show that a strong leaky mode (LM) is excited and that spurious effects due to the LM and from direct radiation from the source generally become more severe at higher frequencies and when the top cover is brought nearer to the strip.

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