Abstracts

Millimeter-wave characteristics of flip-chip interconnects for multichip modules

W. Heinrich, A. Jentzsch and G. Baumann. "Millimeter-wave characteristics of flip-chip interconnects for multichip modules." 1998 Transactions on Microwave Theory and Techniques 46.12 (Dec. 1998, Part II [T-MTT] (1998 Symposium Issue)): 2264-2268.

Electromagnetic simulation and measurement data of flip-chip transitions are presented. First-order effects are identified and design criteria for millimeter-wave multichip interconnects are derived. Results cover chip detuning and bump geometry as well as simplified modeling. In a coplanar environment, the flip-chip scheme provides interconnects with excellent low-reflective properties. For conductor-backed structures, parasitic modes occur leading to unwanted crosstalk. These effects dominate the behavior so that overall performance of the flip-chip scheme can be evaluated properly only in conjunction with the actual motherboard packaging setup.

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