Abstracts

Modeling of lead-frame plastic CSPs for accurate prediction of their low-pass filter effects on RFICs (2001 [RFIC])

T.S. Horng, S.M. Wu, H.H. Huang, C.T. Chiu and C.P. Hung. "Modeling of lead-frame plastic CSPs for accurate prediction of their low-pass filter effects on RFICs (2001 [RFIC])." 2001 Radio Frequency Integrated Circuits (RFIC) Symposium 01. (2001 [RFIC]): 133-136.

This paper presents a direct extraction method to construct the electrical models of lead-frame plastic CSPs (Chip Scale Packages) for RFICs from the measured S-parameters. To evaluate the package effects on the reciprocal passive components, the insertion loss for an on-chip 50-ohm microstrip line housed in a 32-pin BCC (Bump Chip Carrier) package was calculated based on the established package model. Excellent agreement with measurement has been found up to 15 GHz. When applied to the non-reciprocal active components, the variation of gain for an HBT (Heterojunction Bipolar Transistor) array housed in an 8-pin BCC package has been also predicted up to 22 GHz successfully. Both cases have demonstrated that the package acts as a low-pass filter to cause a sharp cut off for the RFIC components above a certain frequency.

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