Abstracts

A locally matching technique for broadband flip-chip transition design

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A locally matching technique is proposed in this paper to improve the wideband performance of a flip-chip transition. The gap width of the CPW line in the flip-chip bump pad region is enlarged for achieving larger inductance to compensate for the capacitance at the transition, making the approximate impedance close to 50 /spl Omega/. An equivalent circuit is derived from the frequency response of the transition simulated by Sonnet and is used to control the resonance frequency of the structure. With a properly chosen value of the enlarged width, the resonant dip can be controlled to improve return loss over a band from DC to 60 GHz. Measurement data of the scaled structure is in good agreement with the simulation results, which validates the proposed design idea.

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