Abstracts

Two-Dimensional Mapping of the Microwave Potential on MMIC's Using Electrooptic Sampling

D.R. Hjelme, M.J. Yadlowsky and A.R. Mickelson. "Two-Dimensional Mapping of the Microwave Potential on MMIC's Using Electrooptic Sampling." 1993 Transactions on Microwave Theory and Techniques 41.6 (Jun./Jul. 1993 [T-MTT]): 1149-1158.

An accurate technique for mapping the two-dimensional microwave potential in microwave circuits has been developed and tested. Using the direct electrooptic sampling technique and a de-embedding algorithm to remove substrate variation induced measurement errors, accurate two-dimensional potential maps with a dynamic range of 50 dB and spatial resolution of 10 µm are obtained. De-embedding of the microwave potential from the measured, electrooptically modulated signal is achieved by deducing the substrate parameters from the measured average reflected optical power. Once the substrate is characterized, the microwave potential can be calculated from the electrooptic signal The de-embedding procedure technique was successfully tested on a through-line and an open-end line of a TRL microstrip calibration standard.

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