Abstracts

Experimental Evaluation of Basic Circuit Components Using Buried Microstrip Lines for Constructing High-Density Microwave Integrated Circuits

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The buried microstrip line (BMSL) is a promising transmission line structure for realizing low crosstalk characteristics. The measured crosstalk characteristics of model BMSL's have shown good agreement with the estimated ones based on the rectangular boundary division method and the finite-difference time-domain (FDTD) method, indicating that these calculation methods are appropriate for estimating the performance of BMSL's. These results also confirm our expectation that BMSL's have extremely low crosstalk characteristics such as -100 dB in real circuits at high microwave frequencies. The basic circuit components to construct high-density microwave circuits using BMSL's, couplers, stub matching circuits, and gap-coupled resonance filter circuits, were fabricated and experimentally evaluated.

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