Abstracts

Very Small Wide-Band MMIC Magic T's Using Microstrip Lines on a Thin Dielectric Film

T. Hiraoka, T. Tokumitsu and M. Aikawa. "Very Small Wide-Band MMIC Magic T's Using Microstrip Lines on a Thin Dielectric Film." 1989 Transactions on Microwave Theory and Techniques 37.10 (Oct. 1989 [T-MTT]): 1569-1575.

A newly developed MMIC magic T (180° hybrid circuit) using microstrip lines on a thin silicon oxynitride (SiON) dielectric film has been proposed. The microstrip fine area reduction is achieved by rising very narrow line width thin-film microstrip (TFMS) lines, derived from the thin substrate structure. The area is effectively minimized using meander-like configurations. The SiON thin film is successfully deposited by low-temperature plasma CVD. The MMIC magic T has been designed for a center frequency of 12 GHz, and small size with wide-band performance from 6 GHz to 18 GHz has been achieved. Thus, magic T's using thin-film microstrip lines are promising for miniaturized high-performance MMIC's, such as balanced mixers and modulators.

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