

# Abstracts

## Multilayer MMIC Using a $3\mu\text{m}$ X 3-Layer Dielectric Film Structure

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*T. Tokumitsu, T. Hiraoka, H. Nakamoto and T. Takenaka. "Multilayer MMIC Using a  $3\mu\text{m}$  X 3-Layer Dielectric Film Structure." 1990 MTT-S International Microwave Symposium Digest 90.2 (1990 Vol. II [MWSYM]): 831-834.*

Newly developed, very small-size multilayer MMICs using miniature microstrip lines on a thin dielectric film are described. Other effective thin film transmission lines, line crossovers, and vertical connections are also discussed. 90-degree and 180-degree hybrids, multiport Wilkinson dividers, and distributed amplifiers are implemented in a very small area, less than  $1\text{mm}^2$ .

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