Abstracts

The Use of Active Traveling-Wave Structures in GaAs MMIC's (Short Papers)

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A coplanar waveguide has been fabricated on a modulation doped GaAs substrate in order to evaluate the potential of traveling-wave structures in microwave applications. The use of a Schottky contact center conductor enables the line to function as a slow wave structure in which the rf propagation characteristics can be modified with a dc bias. Measurements are reported at 10 GHz on simple structures, some of which incorporated an additional dielectric layer. Results show that slow-wave factors of between 8 and 24 are readily obtained with a loss per slow-wave factor was about 0.7 dB/mm. The practical issues relating to the application of such structures in phase shifters, chip size reduction, compact active filters and resonators are examined.

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