Abstracts

A GaAs Monolithic Phase Shifter for 30 GHz Application

V. Sokolov, P. Bauhahn, J. Geddes, T. Contolatis and C. Chao. "A GaAs Monolithic Phase Shifter for 30 GHz Application." 1983 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 83.1 (1983 [MCS]): 40-44.

The design and performance of a GaAs monolithic 180° one-bit phase shifter test circuit for Ka-band operation is presented. Over the 27.5 to 30 GHz band the measured differential phase shift is within 10° of the ideal characteristic and the insertion loss is between 4 and 6 dB. The switching FETs are fabricated by ion implantation into LEC material using a power FET implant schedule. I-V characteristics are also presented for a self-aligned gate FET whose channel resistance is reduced by more than a factor of two relative to the power FET. This latter fabrication technique holds promise in reducing phase shifter insertion loss for mm-wave applications.

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