Abstracts

FM-CW Radar on a Single GaAs/AlGaAs HBT MMIC Chip

B. Maoz, L.R. Reynolds and A. Oki. "FM-CW Radar on a Single GaAs/AlGaAs HBT MMIC Chip." 1991 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 91.1 (1991 [MCS]): 3-6.

A novel low power FM-CW radar on a single chip has been implemented for the first time using GaAs/AIGaAs HBT technology developed at TRW. An innovative electronic circulator allows operation with a single antenna at C band. In addition, the chip contains a VCO, transmitter amplifier, and receiver mixer with proper filtering. The chip measures 1 x 2 x 0.25 mm and operates from a single +5 Volt supply. In order to minimize cost we used a process featuring a relaxed 3 µm emitter size, achieving f/sub t/ of 24 GHz. We also did not use via holes. Potential applications for the chip include range and velocity discriminating fuzes, sensors and altimeter functions.

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