Abstracts

Multifunction MMIC History from a Process Technology Perspective

G.E. Brehm. "Multifunction MMIC History from a Process Technology Perspective." 1990 Transactions on Microwave Theory and Techniques 38.9 (Sep. 1990 [T-MTT] (Special Issue on Multifunction MMIC's and their System Applications)): 1164-1170.

During the 1980's MMIC's proliferated, and a substantial number now include more than one system function on the same chip. These multifunction MMIC's are reviewed in this paper in the light of the processes that were used to fabricate them. Remarkable chips performing all the microwave functions of radar transmit/receive modules, receivers, and frequency synthesizers have been developed. The core technologies used for these chips were ion-implanted GaAs MESFET's on semi-insulating GaAs substrates. Process complexity is a dominant factor determining their practicality and cost, and the most successful circuits have been designed with process limitations in mind. In the future, proliferation of multifunction MMIC's with even greater functional complexity is expected, but additional process complexities will be added sparingly.

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