Abstracts

The Historical Development of GaAs FET Digital IC Technology

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Only ten years have passed since the first GaAs field-effect transistor (FET) digital IC was reported showing the potential for gigabit data rates for microwave systems. During this short time, GaAs FET digital IC technology has matured to produce a 4K static RAM with 3-ns access time. This rapid progress of the technology is due in part of the synergistic research on FET's for microwave device applications, progress in materials growth, lithography, and processing techniques necessary to made uniform and reproducible devices and the support and leadership of the military services. The events that lead to the present, state of the art for GaAs digital IC technology are discussed in chronological order starting with Shockley's theory for the field effect transistor and concluding with performance projections for the technology. Discussions with individuals involved in the technology and review of the published literature have been taken into account in an attempt to outline the contributions that have been made to the technology.

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