Abstracts

Design Concepts for Microwave GaAs FET Active Filters

S.E. Sussman-Fort. "Design Concepts for Microwave GaAs FET Active Filters." 1989 Transactions on Microwave Theory and Techniques 37.9 (Sep. 1989 [T-MTT] (Special Issue on FET Structures Modeling and Circuit Applications)): 1418-1424.

GaAs MMIC technology has already been employed to great advantage in the design of various active circuits, for example, matching networks, multipliers, and circulators. The development of active filters in this technology seems to us to represent a logical step forward in the evolution of GaAs MMIC circuit applications. This paper gives a comprehensive history of microwave active filter development to date, and then presents a design methodology for the realization of precision broad-band filters in spite of problems such as the nonideal behavior of microwave GaAs FET's and the low Q and related parasitic effects of MMIC inductors and capacitors. Finally, the feasibility of our approach is illustrated by the computer-simulated design of a cascadable, second-degree microwave bandpass filter.

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