

Abstracts

High-Speed, 100+ W RF Switches Using GaAs MMICs

P. Katzin, B.E. Bedard, M.B. Shifrin and Y. Ayasli. "High-Speed, 100+ W RF Switches Using GaAs MMICs." 1992 Transactions on Microwave Theory and Techniques 40.11 (Nov. 1992 [T-MTT]): 1989-1996.

We have developed a low-loss, inductive gate bias network structure which allows very high stacking level of FET devices for high-power rf switching applications. We describe the design, implementation, and performance of S- and C-band SPDT switches based on this structure, using multiple GaAs MMIC chips integrated into a suspended-substrate hybrid circuit. At S-band, we demonstrated switch rise-fall times of less than 40 ns and an rf power handling capability of 300 W CW. This input signal level could be maintained during the switch state transitions ('hot-switching'), while being switched between the two output ports at rates up to 500 KHz.

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