Abstracts

Microwave Variable-Gain Amplifier with Dual-Gate GaAs FET

M. Maeda and Y. Minai. "Microwave Variable-Gain Amplifier with Dual-Gate GaAs FET." 1974 Transactions on Microwave Theory and Techniques 22.12 (Dec. 1974, Part II [T-MTT] (1974 Symposium Issue)): 1226-1230.

An encapsulated dual-gate GaAs Schottky barrier gate FET has been characterized with an equivalent circuit representation. The second gate bias dependence of the transconductance has suggested that the FET can be used as a variable-gain smplifying device at microwave frequencies. The experiments on the variable-gain amplifiers with the dual-gate GaAs FET's have exhibited the following. 1) Broad-band amplification can be achieved by adopting a stagger tuning technique, although the Q's of the input and output of the GaAs FET are much higher than those of the Si bipolar transistor. 2) The gain can be controlled only by the second gate bias voltage without degradation of bandpass performance. The results have shown the feasibility of the dual-gate GaAs FET for a microwave variable-gain amplifier.

❑ Return to main document.