Abstracts

Microwave Performance of an Optically Controlled AlGaAs/GaAs High Electron Mobility Transistor and GaAs MESFET (1987 Vol. II [MWSYM])

R.N. Simons and K.B. Bhasin. "Microwave Performance of an Optically Controlled AlGaAs/GaAs High Electron Mobility Transistor and GaAs MESFET (1987 Vol. II [MWSYM])." 1987 MTT-S International Microwave Symposium Digest 87.2 (1987 Vol. II [MWSYM]): 815-818.

Direct current and also characteristics of optically the microwave illuminated AIGaAs/GaAs HEMT are experimentally measured for the first time and compared with that of GaAs MESFET. The results showed that the average increase in the gain is 2.8 dB under 1.7 mW/cm/sub 2/ optical intensity at 0.83 µm. Further, the effect of illumination on S-parameters is more pronounced when the devices are biased close to pinch-off. Novel applications of optically illuminated HEMT as a variable gain amplifier, high-speed high-frequency photo detector, and mixer are demonstrated.

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