Abstracts

A GaAs HBT Monolithic Microwave Switched-Gain Amplifier with +31 Db to -31 Db Gain in 2 dB Increments

A.K. Oki, G.M. Gorman, J.B. Camou, D.K. Umemoto and M.E. Kim. "A GaAs HBT Monolithic Microwave Switched-Gain Amplifier with +31 Db to -31 Db Gain in 2 dB Increments." 1989 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 89.1 (1989 [MCS]): 83-86.

A GaAs/AIGaAs heterojunction bipolar transistor (HBT) monolithic 5-bit digital gain control amplifier has been developed for application to electronic warfare receivers. The switched-gain/attenuator amplifier performance includes monotonic gain control in 2 dB increments from +31 dB to -31 dB from DC to 2.25 GHz with less than 1.6 dB RMS gain error across the band. The chip size is 1.2x2.2 mm^2 and consumes 1.3 watts. The circuit is the first reported monolithic microwave HBT gain control circuit for signal processing applications as well as one of the first three chips (all HBTs) demonstrated on the DARPA Microwave/Millimeter Wave Monolithic Integrated Circuit (MIMIC) Phase 1 Program.

❑ Return to main document.