Abstracts

A Ka-Band HEMT MMIC 1 Watt Power Amplifier

M.V. Aust, B. Allen, G.S. Dow, R. Kasody, G. Luong, M. Biedenbender and K. Tan. "A Ka-Band HEMT MMIC 1 Watt Power Amplifier." 1993 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 93.1 (1993 [MCS]): 45-48.

A 34-36 GHz, 1 watt 9 dB gain MMIC power amplifier has been developed which utilizes 0.15um pseudomorphic InGaAs/GaAs HEMT process technology. Power amplifier sites across the wafer were fully characterized with an on-wafer pulsed large signal S-parameter test set. Test results from these amplifier chips showed output powers > 30 dBm, with greater than 9 dB gain, and power added efficiencies > 20%. Overall chip size is 4.8 mm x 2.3 mm. This is the report of a Ka-Band MMIC power amplifier with 1 watt output power. A two-stage power amplifier module was developed using one chip to drive three chips. The resulting amplifier module has achieved 3 watt output power and 17dB gain from 34-36GHz.

❑ Return to main document.