Abstracts

The Demonstration of Ka-Band Multi-Functional MMIC Circuits Fabricated on the Same PHEMT Wafer with Superior Performance

A. Kurdoghlian, C.S. Wu, W. Yau, J. Chen, M. Hu, C. Pao and D. Bosch. "The Demonstration of Ka-Band Multi-Functional MMIC Circuits Fabricated on the Same PHEMT Wafer with Superior Performance." 1993 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 93.1 (1993 [MCS]): 97-98.

We have demonstrated the superior performance of Ka-Band MMIC power and Low noise amplifiers, both fabricated on the same wafer, using delta doped AlGaAs-InGaAs-GaAs PHEMT technology. The balanced power amplifier exhibited an output power of 500 mW with 12 dB associated gain; and a power added efficiency of 32 percent over the 34 to 36 GHz frequency range. The LNA circuit demonstrated a noise figure of 3.5 dB with an associated gain of 17 dB over the 33 to 37 GHz frequency range. The demonstration of these circuits proves that millimeter-wave multifunctional circuits can be fabricated on the same wafer without sacrificing individual circuit performance.

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