Abstracts

A High Power and High Efficiency Monolithic Power Amplifier at V-Band Using Pseudomorphic HEMTs

A.K. Sharma, G. Onak, R. Lai and K.L. Tan. "A High Power and High Efficiency Monolithic Power Amplifier at V-Band Using Pseudomorphic HEMTs." 1994 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 94.1 (1994 [MCS]): 73-76.

This paper presents a high power and high efficiency monolithic power amplifier at V-band utilizing highly reliable and manufacturable 0.15 µm InGaAs/AIGaAs/GaAs pseudomorphic HEMT fabrication technology. The performance of the power amplifier is 13.83 dB small signal gain, 13.9% power-added-efficiency, and 26.83 dBm (482 mW) at 60 GHz for unpassivated HEMT process. The same circuit with passivated process produced a linear gain of 13.18 dB, 11% power-added-efficiency, and compressed output power of 25.68 dBm (370 mW). The producibility of this amplifier has been demonstrated in volume production with several wafer lots resulting in a 20% total yield through RF tests.

❑ Return to main document.