Abstracts

A 68% P.A.E. power pHEMT for K-band satellite communication system

T. Satoh, A. Betti-Berutto, C. Poledrelli, C. Khandavalli, J. Nikaido, S. Kuroda, T. Yokoyama and J. Fukaya. "A 68% P.A.E. power pHEMT for K-band satellite communication system." 1999 MTT-S International Microwave Symposium Digest 99.3 (1999 Vol. III [MWSYM]): 963-966 vol.3.

A 68% power-added efficiency power pseudomorphic HEMT (pHEMT) has been developed. Based on an optimized device structure and tuned to the maximum efficiency condition, we achieved this efficiency with 225 mW output power at 18 GHz. Using this power pHEMT technology, we have also developed a K-band 2-stage MMIC amplifier with 45% power-added efficiency, 450 mW output power and 18 dB gain. These are the highest efficiency figures reported for K-band applications.

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