

Abstracts

W-band InP/InGaAs/InP DHBT MMIC power amplifiers

Yun Wei, Sangmin Lee, K. Sundararajan, M. Dahlstrom, M. Urteaga and M. Rodwell. "W-band InP/InGaAs/InP DHBT MMIC power amplifiers." 2002 MTT-S International Microwave Symposium Digest 02.2 (2002 Vol. II [MWSYM]): 917-920 vol.2.

We report W-band MMIC class A power amplifiers in InP/InGaAs/InP DHBT transferred-substrate technology. A cascode amplifier with 64 μm^2 emitter area exhibits a peak small-signal gain of 10 dB at 90 GHz and an output power of 9.5 dBm under 1 dB gain compression. An 8.5-dB-gain common-base amplifier with an emitter area of 128 μm^2 delivers 14 dBm output power at 85 GHz under 1 dB gain compression and 16.2 dBm (42 mW) saturated output power with an associated 4.6 dB gain. To our knowledge, this is highest reported output power for a W-band HBT power amplifier.

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