Abstracts

A 3-10 GHz LCR-matched power amplifier using flip-chip mounted AlGaN/GaN HEMTs

J.J. Xu, S. Keller, G. Perish, S. Heikman, U.K. Mishra and R.A. York. "A 3-10 GHz LCR-matched power amplifier using flip-chip mounted AlGaN/GaN HEMTs." 2000 MTT-S International Microwave Symposium Digest 00.2 (2000 Vol. II [MWSYM]): 959-962.

We report a GaN-based broadband power amplifier using AlGaN/GaN-HEMTs, grown on sapphire substrates, as the active devices. The circuit topology used novel LCR-matching networks in a 4-way binary-Wilkinson combiner structure. The devices were flip-chip bonded onto the AlN circuit for thermal management. Using devices with 0.7-/spl mu/m gate length and 4-mm gate width, a small-signal gain of 7 dB was obtained with 3-10 GHz bandwidth. The saturation power level was 8.5 W at 8 GHz, which is the highest for a power amplifier using GaN-HEMTs-on-Sapphire.

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