Abstracts

Microwave Power Performance of InP-Based Double Heterojunction Bipolar Transistors for C- and X-Band Applications

M. Hafizi, P.A. Macdonald, T. Liu, D.B. Rensch and T.C. Cisco. "Microwave Power Performance of InP-Based Double Heterojunction Bipolar Transistors for C- and X-Band Applications." 1994 MTT-S International Microwave Symposium Digest 94.2 (1994 Vol. II [MWSYM]): 671-674.

We report on the microwave performance of InP-based double heterojunction bipolar transistors (DHBT) for X-band and C-band applications with power cells operating at an output power greater than 2W. Our power performance characterization indicated a combination of high power density and high efficiency at both 4.5 and 9 GHz. At 4.5 GHz we measured over 2 W output power (4.3 W/mm power density) and a peak power-added-efficiency (PAE) of 60%. At 9 GHz the peak measured power was over 1 W (5W/mm) and the peak PAE was 60%. These are the fiist reports of substantial microwave power performance in this new device technology based on the InP material system.

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