Abstracts

Ka-Band Power Performance of InP/InGaAS/InP Double Heterojunction Bipolar Transistors

H.-F. Chau, H.-Q. Tserng and E.A. Beam, III. "Ka-Band Power Performance of InP/InGaAS/InP Double Heterojunction Bipolar Transistors." 1996 Microwave and Guided Wave Letters 6.3 (Mar. 1996 [MGWL]): 129-131.

We report for the first time the Ka-band power performance of InP/InGaAs/InP DHBT's. A 2 x 10 µm2 common-emitter transistor delivered a continuous wave (CW) output power of 19.1 mW (1.91 W/mm power density), an associated gain of 5.3 dB, and a power-added efficiency (PAE) of 35.5% at 30 GHz. The maximum output power density was 2.34 W/mm and the peak associated gain was 6.6 dB. Under common-base operation, the maximum associated gain increased to 15,2 dB, but the maximum output power density and peak PAE dropped to 1.91 W/mm and 24.5%, respectively, at the same frequency.

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