Abstracts

X-band InGaP PHEMTs with 70% power-added efficiency

Ming-Yih Kao, E.A. Beam, III, P. Saunier and W.R. Frensley. "X-band InGaP PHEMTs with 70% power-added efficiency." 1998 MTT-S International Microwave Symposium Digest 98.3 (1998 Vol. III [MWSYM]): 1671-1674.

This paper describes the low-noise and power performance of InGaP/InGaAs PHEMTs lattice-matched to GaAs substrates. The 0.15-/spl mu/m/spl times/600-/spl mu/m PHEMTs exhibited extrapolated f/sub t/ and f/sub max/ of 70- and 150-GHz, respectively. At 10-GHz, 200-/spl mu/m devices yielded a low noise figure of 0.58-dB with very high associated gain. Furthermore, we have also demonstrated output power of 27-dBm, P.A.E. of 70.1%, and power gain of 13.2-dB at 9-GHz on a 1200-/spl mu/m gate width InGaP PHEMT. This is the first reported demonstration of excellent low-noise and power performance at microwave frequencies from PHEMT with an InGaP Schottky barrier.

❑ Return to main document.