Abstracts

Low-Noise Pseudomorphic Dual-Gate Cascode HEMT's with Extremely High Gain

J. Wenger, P. Narozny, H. Dambkes, J. Splettstosser and C. Werres. "Low-Noise Pseudomorphic Dual-Gate Cascode HEMT's with Extremely High Gain." 1992 Microwave and Guided Wave Letters 2.2 (Feb. 1992 [MGWL]): 46-48.

Quarter micron InGaAs-GaAs dual-gate HEMT's connected as a cascode MMIC in a compact manner have been fabricated and investigated. The devices show a high-output impedance and a very low-feedback capacitance resulting in a high-voltage gain factor g/sub m//g/sub d/ of 125 and a C/sub gs//C/sub gd/ ratio of 45. The current gain cutoff frequency f/sub T/ is 45 GHz and the maximum stable gain is 23.5 dB at 10 GHz and 19 dB at 20 GHz. The pseudomorphic cascode HEMT's show a low-noise figure of 1.1 dB with an associated gain of 22 dB at 10 GHz, at 18 GHz the minimum noise figure is 1.9 dB with 16-dB gain. These data represent the highest gain values and the best noise performance yet reported for dual-gate HEMT devices.

❑ Return to main document.