Abstracts

High-Performance Ka-Band Monolithic Low-Noise Amplifiers Using 0.2-µm Dry-Recessed GaAs PHEMT's

Y. Kwon, D.S. Deakin, E.A. Sovero and J.A. Higgins. "High-Performance Ka-Band Monolithic Low-Noise Amplifiers Using 0.2-µm Dry-Recessed GaAs PHEMT's." 1996 Microwave and Guided Wave Letters 6.7 (Jul. 1996 [MGWL]): 253-255.

Ka-band ultra-low-noise amplifiers fabricated with a manufacturable dry-recess process are presented. Low-damage selective dry etching was used for gate recess to achieve uniform threshold voltage (V/sub th/) and saturation current (I/sub dss/). Threefold improvement in V/sub th/ uniformity was achieved in comparison with the wet recess process. Fabricated PHEMT low-noise amplifiers (LNA's) employing 0.2-µm mushroom gates showed an average noise figure of 2.2 dB from 31-36 GHz with an associated gain of 22.5 dB. At the design frequency of 35 GHz, the noise figure was less than 2 dB. This is among the best results ever reported for Ka-band LNA's.

❑ Return to main document.