Abstracts

Optimal Noise Matching of 0.25 Micron Gate GaAs MESFETs for Low Power Personal Communications Receiver Circuit Designs

D. Scherrer, P.J. Apostolakis, J. Middleton, J. Kruse and M. Feng. "Optimal Noise Matching of 0.25 Micron Gate GaAs MESFETs for Low Power Personal Communications Receiver Circuit Designs." 1994 MTT-S International Microwave Symposium Digest 94.3 (1994 Vol. III [MWSYM]): 1439-1442.

0.25 µm GaAs MESFETs are shown to be excellent device candidates for low current, low noise receiver circuits in personal communicators. The measured low current performance of ion-implanted 0.25 µm gate FETs is reported for device gate widths of 100µm and 200µm and device bias conditions 0.5V < V/sub ds/ < 1.5V and 0.2mA < I/sub ds/ < 5mA. The 0.25 µm x 200 µm device achieved a noise figure of 0.69 dB and associated gain of 12.4 dB at 2 GHz while drawing 1 mA of drain current. The matching characteristics and equivalent circuit models of these devices under low current bias conditions are also discussed.

❑ Return to main document.