Abstracts

Ku-band Si MOSFET monolithic amplifiers with low-loss on-chip matching networks

H. Yano, Y. Nakahara, T. Hirayama, N. Matsuno, Y. Suzuki and A. Furukawa. "Ku-band Si MOSFET monolithic amplifiers with low-loss on-chip matching networks." 1999 Radio Frequency Integrated Circuits (RFIC) Symposium 99. (1999 [RFIC]): 127-130.

We have demonstrated Ku-band (12-20 GHz) Si MOSFET monolithic amplifiers with on-chip matching networks. In these amplifiers, we used 3-/spl mu/m-thick Al-metal transmission lines on 6-/spl mu/m-thick polyimide/SiON isolation layers for the matching networks. The MOSFET amplifiers demonstrated a gain of 10 dB at about 23 GHz, the highest gain yet reported for this frequency. The bandwidth was as high as 25 GHz, which is close to f/sub max//2 of the MOSFETs. Therefore, the on-chip matching networks could provide high performance up to the Ku-band.

❑ Return to main document.