Abstracts

Microwave low-noise GaAs HBTs

H. Dodo, Y. Amamiya, T. Niwa, M. Mamada, S. Tanaka and H. Shimawaki. "Microwave low-noise GaAs HBTs." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 693-696.

In this paper we present our approach to improving microwave noise performance of HBTs. A minimum noise figure of 0.83 dB was obtained at 2 GHz by using an emitter guardring structure which improves the DC current gain particularly at low current densities. We also fabricated HBTs with regrown extrinsic base layers and InGaAs graded base layers which drastically reduce base contact resistance and base transit time, respectively. It is shown that this type of HBTs not only improve the noise-figure at X-band or Ku-band but also make the noise impedance matching easier.

❑ Return to main document.