Abstracts

A 230 Watt S-Band SiGe HBT

P.A. Potyraj, K.J. Petrosky, K.D. Hobart, F.J. Kub and P.E. Thompson. "A 230 Watt S-Band SiGe HBT." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 673-676.

Large-area Si/Si/sub 1-x/Ge/sub x/ HBTs were demonstrated with record output power at S-Band. Under pulsed conditions in class C operation, >230 W saturated power was achieved at 2.8 GHz. At 200 W the device exhibited a collector efficiency of 46% and a power gain of 6.9 dB. Devices with implanted Si bases had comparable gain and 35% efficiency at 150 W, but saturated at 180 W. For high f/sub max/ a self-aligned silicided polysilicon-emitter structure was used in conjunction with a graded Si/sub l-x/Ge/sub x/ base. The results indicate for the first time that Si/SiGe HBTs are suitable for high power, high frequency applications.

❑ Return to main document.