Abstracts

RF power characteristics of SiGe heterojunction bipolar transistor with high breakdown voltage structures (2002 Vol. I [MWSYM])

T. Matsuno, K. Nishii, S. Sonetaka, Y. Toyoda and N. Iwamoto. "RF power characteristics of SiGe heterojunction bipolar transistor with high breakdown voltage structures (2002 Vol. I [MWSYM])." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 293-295 vol.1.

The collector profile dependences of RF power characteristics of SiGe heterojunction bipolar transistors (HBT) have been studied. A selective ion implanted collector (SIC) structure with a thick and lightly doped collector layer showed good RF power characteristics including the adjacent-channel-power-ratio (ACPR) characteristics for middle class power at around an output power of 16 dBm while maintaining BV/sub CEO/ over 5 V. The maximum BV/sub CEO/ of 9 V was obtained using the same process only by removing the SIC structure. Both structures are available for fabrication of multi-stage RF power amplifiers on one chip by a single process.

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