Abstracts

RF power characteristics of SiGe heterojunction bipolar transistor with high breakdown voltage structures (2002 [RFIC])

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 [RFIC])." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 377-379.

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

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