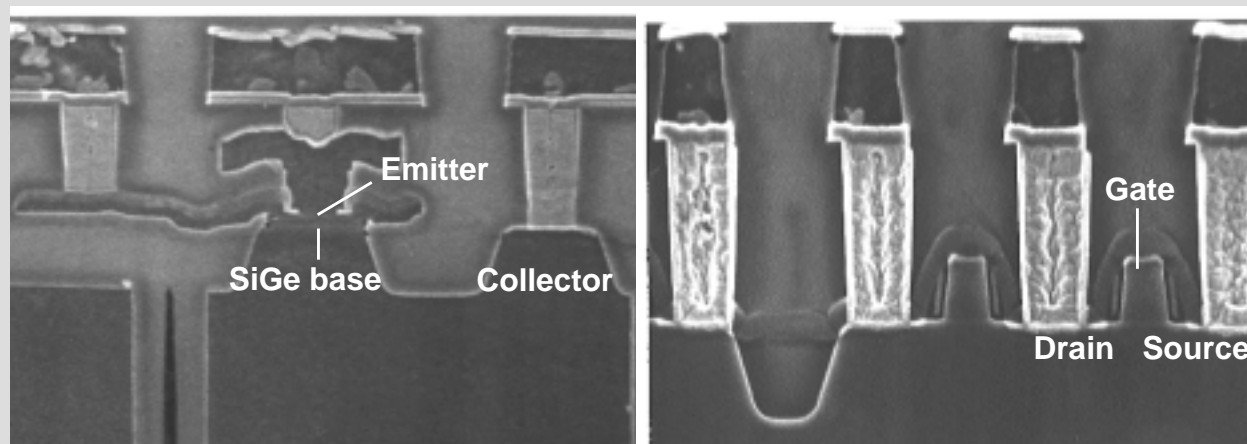


2002/10/1 News Release

0.18 μm SiGe BiCMOS technology for world's first 40Gbit/s-class ultra-high-speed communication LSIs



Cross-sectional view of SiGe HBT (left) and 0.18 μm CMOS (right)

The Central Research Laboratory and the Device Development Center, both of Hitachi, Ltd., have developed the world's first 40Gbit/s class ultra-high-speed communication LSI technology (hereafter SiGe BiCMOS LSI technology) that enables the integration of both SiGe HBT (silicon germanium heterojunction bipolar transistor) and 0.18 μm CMOS (complementary metal oxide semiconductor). By overcoming the problem of performance deterioration usually encountered in trying to integrate two different types of devices, a maximum operating speed of 54Gbit/s (high-speed 16:1 multiplexer circuit) was achieved by the SiGe HBT, while sustaining the high performance of the 0.18 μm CMOS. The SiGe BiCMOS LSI will be essential in future ultra-high-speed communication systems, and this technology will boost its application in mass production.