

A 90 nm Low Power 32K-byte Embedded SRAM with Gate Leakage Suppression Circuit for Mobile Applications

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Abstract

We propose reducing gate leak current in SRAM using Local DC Level Control. Moreover, we propose the Automatic Gate Leakage Suppression Driver to reduce the gate leak current in the peripheral circuit. We designed and fabricated a 32KB SRAM using 90 nm CMOS technology. The 6T-SRAM-cell size is 1.25 μm^2 . Evaluation showed the standby current of 32KB SRAM is 1.2 μA at 1.2 V and room temperature, which achieves 92.5 % reduction compared to conventional SRAM.