

A Low-Power Microcontroller Having a 0.5 μ A Standby Current On-Chip Regulator with Dual-Reference Scheme

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We present a microcontroller having a 0.5 μ A standby current on-chip regulator. To save regulator area, we propose a dual-reference scheme in which one voltage reference circuit is provided for active mode and another voltage reference circuit is provided for standby mode. The dual-reference scheme reduces regulator area by 50% compared with a conventional scheme in which one voltage reference circuit is commonly used both in active mode and standby mode.