

PRODUCT BRIEF (S3C49C9)

High Performance and Low Power Consumption Smart Card Microcontroller

The S3C49C9 single-chip CMOS micro-controller is specially designed and packaged for "Smart Card" application. The S3C49C9 is built around an outstanding CPU core: the 16/32 bit ARM7™ RISC processor. The S3C49C9 has 96K bytes of program memory (ROM), 32K bytes of program/data memory (EEPROM), 4K bytes of data memory (RAM), and advanced security features. The S3C49C9 is fully compatible with ISO 7816 standard for smart card applications.

HARDWARE FEATURES

CPU

- ARM7™ 32-bit CPU core
- ? Fully 16/32-bit RISC architecture

Memory Allocation

- 96K bytes ROM
- ? 32K bytes EEPROM
- ? 4K bytes RAM

EEPROM Write Operations

- ? 2ms fast erase/write time
- ? 1 to 64 bytes EEPROM erase/write operation
- ? 1,000,000 write/erase cycles (typical)
- ? 100 years data retention (typical)

Data Security

- ? 64 bytes write protected security area including transport code
- ? 64 bytes of non erasable EEPROM
- ? Reset operation are selective if abnormal voltage/frequency/temperature/light exposure/decapsulation are detected.

Interrupt Controller

- ? 4 interrupt sources

Serial I/O Interface

- ? Two asynchronous half-duplex character receive/transmit serial interface (conforms to ISO standard 7816-3)

Timers

- ? One 16-bit programmable interval timer
- ? One 16-bit watchdog timer

Memory Protection Unit

- ? Divide into 8 memory areas with own access permission attributes

Random Number Generator

- ? One 16-bit random number generator
- ? Start/Stop control

Internal Clock generator

- ? Internal RC clock generator (average 5MHz)

Reset

- ? Power-on reset and external reset

Operating Voltage Range

- ? 2.7 V–5.5 V

Operating Frequency Range

- ? 1 MHz–5 MHz (external clock)

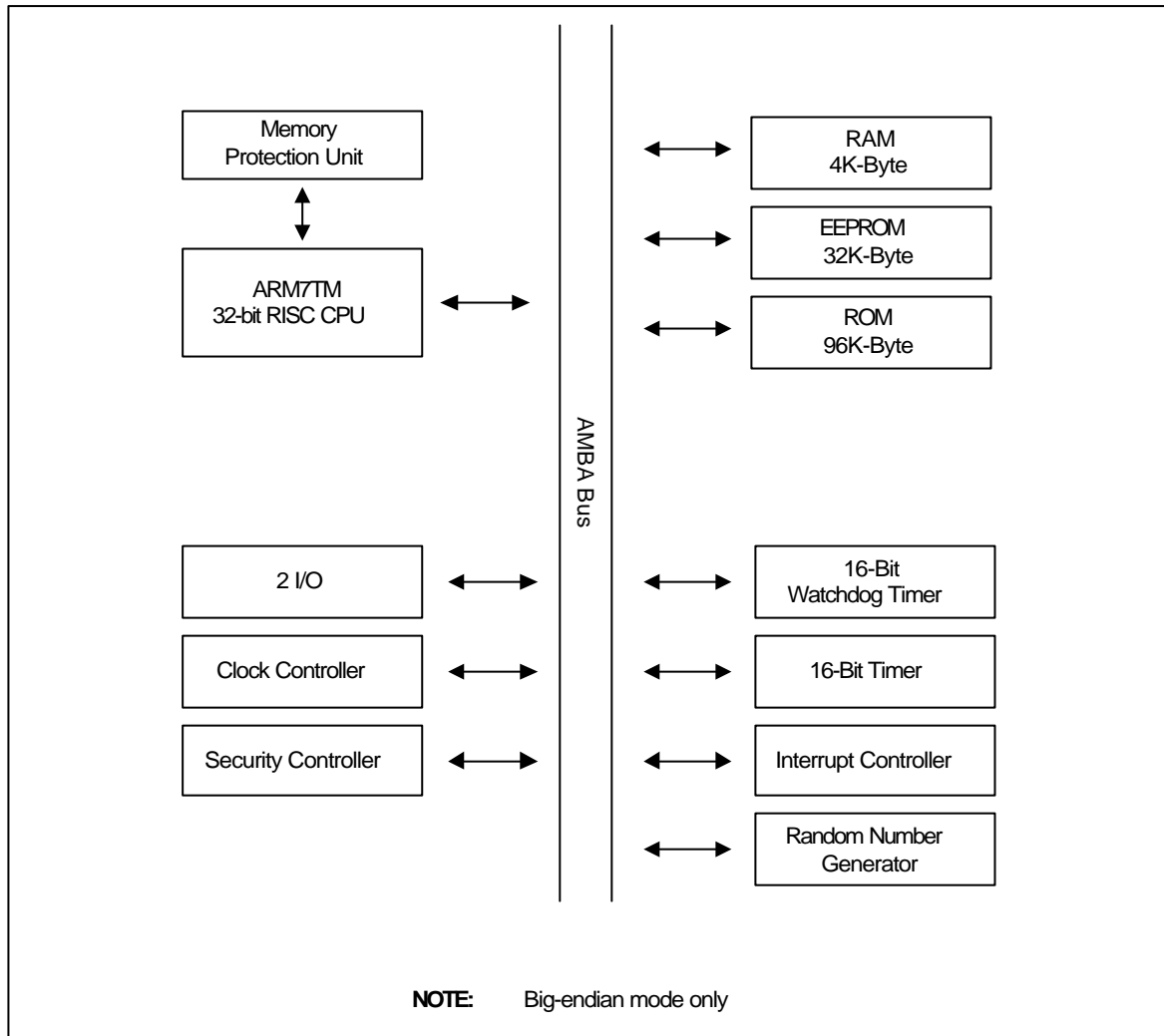
Operating Temperature

- ? –25 °C to 85 °C

Package

- ? Wafer
- ? 8-pin COB (conforms to ISO standard 7816)

S3C49C9 Block Diagram



Electrical Characteristics

- Operating voltage maximum ratings: -0.3 to $+7.0$ V
- Operating temperature: -25 °C to $+85$ °C
- Operating voltage: 2.7 – 5.5 V
- Operating current(@5MHz, 5.5V) :10mA(Max)
- Stop current(@1MHz, 5.5V) :200uA(Max)

Development Tools

- In-Circuit Emulator: MultiICE
- C Compiler: SDT(Software Development Toolkit)
ADS (ARM developer Suite)
- Emulation Board

For More Information

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