

## 32-bit Single Chip Microcontroller

- High-speed 32-bit RISC Core
- Multiply Accumulation
- 8K-byte RAM Built-in
- 2-ch. SIO

### ■ DESCRIPTIONS

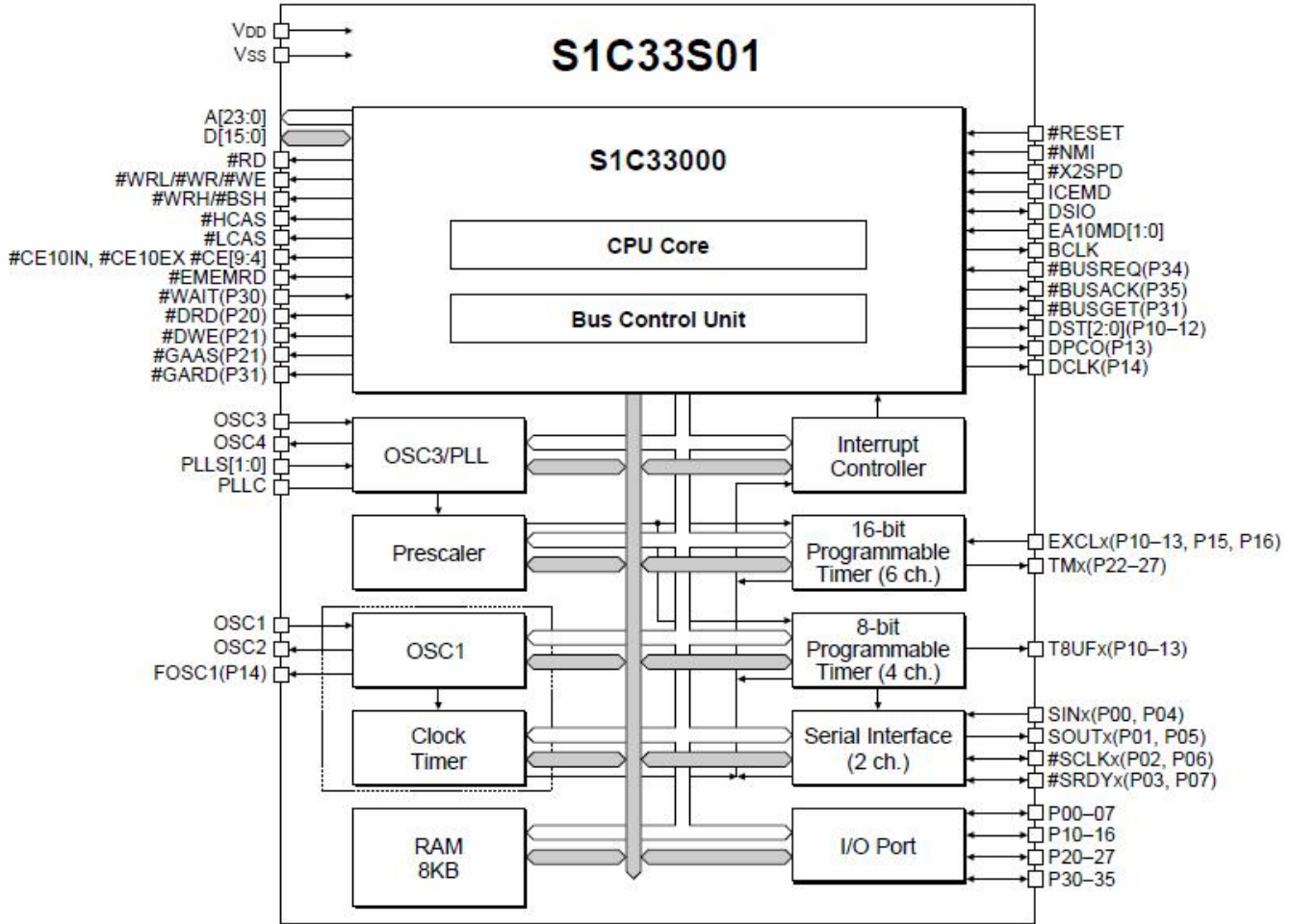
The S1C33S01 consists of the S1C33000 32-bit RISC type CPU as the core, a bus control unit, an interrupt controller, timers, serial interface circuits, 8K-byte RAM and other circuits. It also includes a high-speed oscillation circuit, PLL and low-speed oscillation circuit allowing high-speed operation and low-power operation with excellent clock functions. The S1C33S01 also provides a DSP function, by using the internal MAC (multiplication and accumulation) operation function, it makes it possible to design simply voice synthesis systems.

### ■ FEATURES

- CMOS LSI 32-bit parallel processing S1C33000 RISC core
- Main clock 50MHz (Max., up to 12.5MHz external clock input)
- Sub clock 32.768kHz (Typ., crystal)
- Instruction set 16-bit fixed length, 105 instructions  
(MAC instruction is included, 2 cycles)
- Internal RAM size 8,192 bytes
- Clock timer 1 channel
- Programmable timer 8 bits × 4 channels and 16 bits × 6 channels
- Watchdog timer Realized with a 16-bit programmable timer
- Serial interface 2 channels  
Clock synchronization type and asynchronization type are selectable.  
Usable as an infrared ray (IrDA) interface.
- I/O port I/O port : 29 bits  
Pins are shared with the inputs and outputs of built-in peripheral circuits.
- Interrupt controller External interrupts : 8 types  
Internal interrupts: 23 types
- External bus interface 24-bit address bus  
(High-order 4 bits are shared with the I/O ports)  
16-bit data bus  
6 chip enable pins  
(shared with the I/O ports)  
SRAM, DRAM and burst ROM may be connected directly.
- Shipping form QFP15-100pin
- Supply voltage 1.8 to 3.6V (single power supply)
- Current consumption SLEEP state : 10 $\mu$ A (3.3V, 32.768kHz, clock timer run state, Typ.)  
: 2.5 $\mu$ A (2.0V, 32.768kHz, clock timer run state, Typ.)  
RUN state : 49mA (3.3V, 60MHz Typ.)

# S1C33S01

## ■ Block Diagram



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