

32-bit Single Chip Microcontroller

- High-speed 32-bit RISC Core
- Multiply Accumulation
- 8K-byte RAM Built-in
- 10-bit ADC
- 4-ch. SIO, 2-ch. I²C
- High-speed DMA, Intelligent DMA

■ DESCRIPTIONS

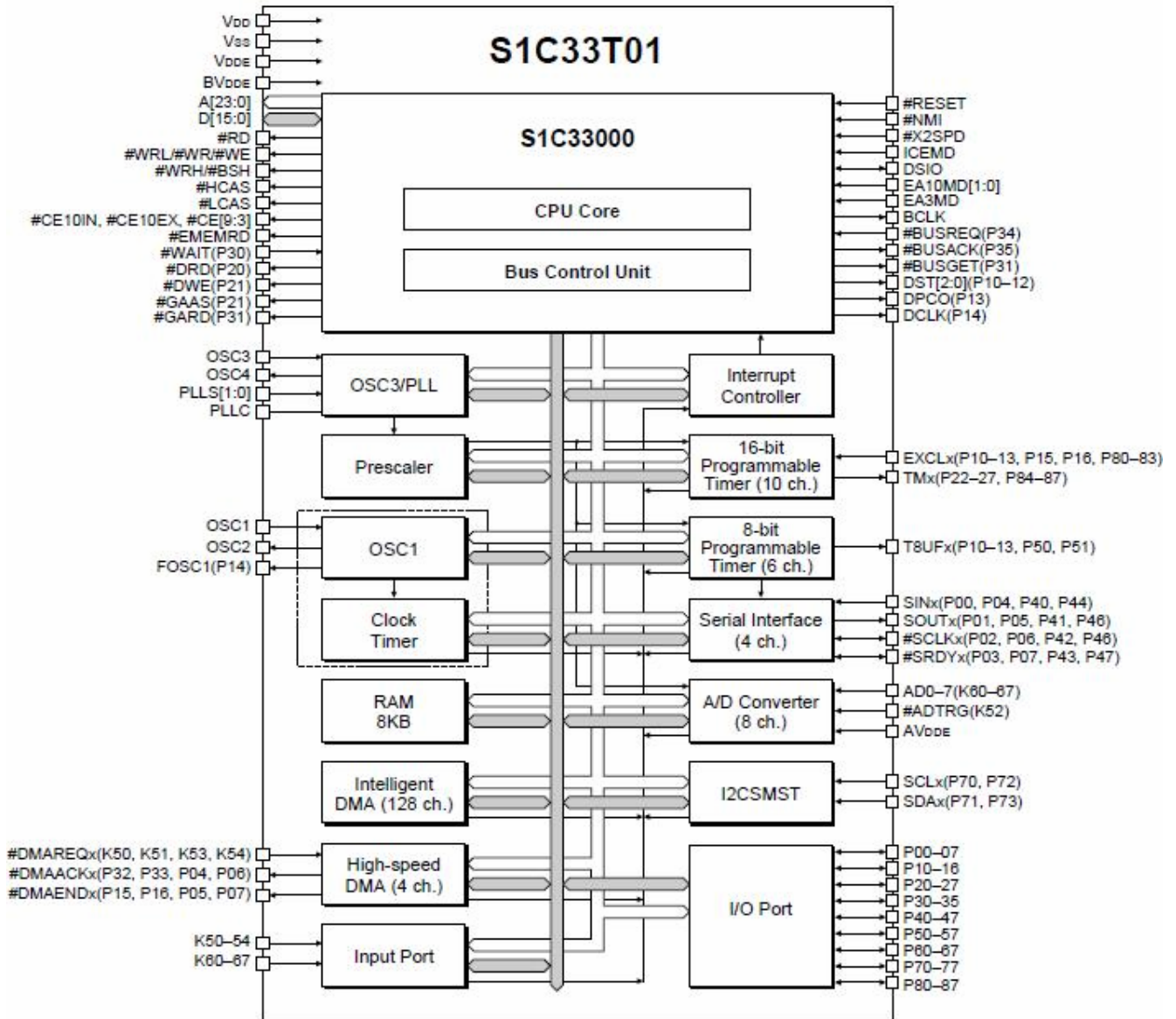
The S1C33T01 is a CMOS 32-bit microcomputer composed of a CMOS 32-bit RISC core, 8K-byte RAM, DMA, 4-ch. SIO, 2-ch. I2C, ADC, timers, PLL and oscillators. The S1C33T01 features high-speed operation and low current consumption. The S1C33T01 also provides a DSP function using the internal MAC (multiplication and accumulation) operation function with the A/D converter, this makes it possible to achieve speech recognition and voice synthesis systems.

■ FEATURES

- CMOS LSI 32-bit parallel processing S1C33000 RISC core
- Main clock 60MHz (Max., up to 15MHz 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 × 6 channels and 16 bits × 10 channels
- PWM timer Realized with a 16-bit programmable timer
- Watchdog timer Realized with a 16-bit programmable timer
- Serial interface 4 channels
Clock synchronization type and asynchronization type are selectable.
Usable as an infrared ray (IrDA) interface.
- I²C bus Single master type, 2 channels (option)
- 10-bit A/D converter Successive approximation type, 8 input channels
- High-speed DMA 4 channels
- Intelligent DMA 128 channels
- I/O port Input port : 13 bits
I/O port : 69 bits
- Interrupt controller External interrupts : 18 types
Internal interrupts: 69 types
- External bus interface 24-bit address bus, 16-bit data bus, 7 chip enable pins
DRAM and burst ROM may be connected directly.
- Shipping form QFP21-176pin
- Supply voltage Core voltage : 1.8 to 3.6V
I/O voltage : 1.8 to 5.5V
- Current consumption SLEEP state : 10μA (3.3V, 32.768kHz, clock timer run state, Typ.)
: 2.5μA (2.0V, 32.768kHz, clock timer run state, Typ.)
RUN state : 65mA (3.3V, 50MHz Typ.)

S1C33T01

■ Block Diagram



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