EPSON 8-bit MCU S1C8F360 SPEC

Model	S1C8F360
Supply Voltage	Normal mode:　　2.4 ~ 5.5V (Max. 4.2MHz)　VD1 = 2.2V Low power mode: 2.0 ~ 3.5V (Max. 50kHz)　V D1 = 1.85V High speed mode: 3.5 ~ 5.5V (Max. 8.2MHz)　V D1 = 3.1V
Core CPU	S1C88 (MODEL3) CMOS 8-bit core CPU
OSC1 Oscillation circuit	Crystal oscillation circuit 32.768 kHz (Typ.)
OSC3 Oscillation circuit	Crystal oscillation circuit/ceramic oscillation circuit/ CR oscillation circuit 8.2 MHz (Max.)
Instruction set	608 types (Usable for multiplication and division instructions)
Min. Instruction execution time	0.244 μsec/ 8.2 MHz (2 clock)
Internal ROM capacity	60K byte (supports serial- and parallel-programming method using the exclusive PROM writer)
Internal RAM capacity	2K bytes/ RAM　3,216 bits/ display memory
Bus line	Address bus: 19 bits　(Also usable as a general output port when not used as a bus) Data bus:　8 bits　(Also usable as a general I/O port when not used as a bus) $\overline{CE}$ signal:　4 bits $\overline{WR}$ signal:　1 bit　　(Also usable as a general output port when not used as a bus) $\overline{RD}$ signal:　1 bit
Input port	10 bits (2 bits can be set for event counter external clock input and bus request signal input terminal)
Output port	9 bits (6 bits can be set for buzzer output, LCD control, FOUT, TOUT and bus acknowledge signal output terminal)
I/O port	8 bits (4 bits each can be set for serial interface input/output and analog comparator input)
Serial interface	1 ch (option clock synchronous system or asynchronous system)
Timer	Programmable timer (8 bits): 2ch. 　(1ch. can be set as an event counter or 2 ch. as a 16 bits programmable timer for 1ch.) Clock timer (8 bits):　　　　1ch. Stopwatch timer (8 bits):　　1ch.
LCD driver	Dot matrix type (compatible with 5 x 8 or 5 x 5 fonts) 51 SEG x 32 COM (1/5 bias) 67 SEG x 16 COM (1/5 bias) 67 SEG x　8 COM (1/5 bias) Expandable external LCD driver, built-in LCD power supply circuit (booster type, 5 potentials)
Sound generator	Envelope function, equipped with volume control
Watchdog timer	Built-in
Analog comparator	2ch. built -in (not available if A/D converter is used)
A/D converter	Resolution: 10 bits, input: 4ch, Maximum error: $\pm$ 3 LSB (not available if analog comparator is used)
SVD circuit	Can detect up to 16 different voltage levels
Interrupt	External interrupt: Input interrupt　　　　2 systems (3 types) Internal interrupt: Timer interrupt　　　　3 systems (9 types) 　　　　　　　　　Serial interface interrupt　1 system (3 types) 　　　　　　　　　A/D converter interrupt　　1 system (1 type)
Current consum-ption (Typ.)	HALT	2 μA (Typ./ normal mode)
	Run (32kHz)	12μA (Typ./ normal mode)
	Run (4MHz)	1.5mA (Typ./ normal mode)
Package form	QFP18-176pin, QFP21-176pin or chip

* The number of bits cited for output ports and I/O ports does not include those shared with the bus.