EPSON 8-bit MCU S1C88832/ 862/ 816 SPEC

Model	S1C88832	S1C88862	S1C88816
Supply Voltage	Normal mode: 2.4 ~ 5.5V (Max. 4.2 MHz) Low power mode: 1.8 ~ 5.5V (Max. 80 kHz) High speed mode: 3.5 ~ 5.5V (Max. 8.2 MHz)		
Core CPU	S1C88 (MODEL3) CMOS 8-bit core CPU		
OSC1 Oscillation circuit	Crystal oscillation circuit/ CR oscillation circuit / external clock input 32.768kHz (Typ.)		
OSC3 Oscillation circuit	Crystal oscillation circuit/ ceramic oscillation circuit/ CR oscillation circuit/ external clock input 8.2 MHz (Max.)		
Instruction set	608 types (usable for multiplication and division instructions)		
Min. Instruction execution time	0.244µsec/ 8.2 MHz (2 clocks)		
Internal ROM capacity	32K bytes	60K bytes	116K bytes
Internal RAM capacity	1.5K bytes/ RAM, 3,216bits/display memory	1.5K bytes/ RAM, 2,736 bits/ display memory	8K bytes/ RAM, 4224 bits display, 512 bytes/ melody RAM
Input port	9 bits (1 bits can be set for event counter external clock input)		
Output port	5 bits (can be set for buzzer output, TOUT signal and FOUT output)	4 bits (can be set for buzzer output and TOUT signal output)	7 bits (can be set for BZ, $\overline{BZ}$, TOUT, $\overline{TOUT}$, and FOUT output)
I/O port	8 bits (4 bits can be set for serial interface input/ output)		16 bits (P10-P13 and P14-P17 can be set for serial I/F input/ output and A/D converter input, respectively)
Serial interface	1 ch (optional clock synchronous system or asynchronous system)		
Timer	Programmable timer (8 bits): 2 ch (1ch can be set as an event counter or 2ch 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 font) Built-in (booster type, 5 potentials/ 4 potentials)		
	51 SEG x 32 COM 67 SEG x 16 COM 67 SEG x 8 COM	41 SEG x 32 COM 57 SEG x 16 COM 57 SEG x 8 COM	72 SEG x 32 COM 88 SEG x 16 COM 88 SEG x 8 COM
Sound generator	Envelope function, equipped with volume control		
Watchdog timer	Built-in		
Supply voltage detection (SVD)	Can detect up to 16 different voltage levels		
Melody converter	None		1 sound source (scale: 3 octaves, note: 8 types, tempo: 16 types) Note and scale data are stored into the melody RAM (allows the CPU to read and write)
A/D converter	None		Successive-approximation type, resolution: 10 bits, input: 4 ch (share with P14-P17)
Interrupt	External interrupt: Input interrupt 2systems (3 types)		2 systems (3 types)
	Internal interrupt: Timer interrupt 3 systems (9 types)		3 systems (9 types)
	Serial interface interrupt 1 system (3 types)		1 system (3 types)
	Melody interrupt None		1 system (1 type)
	A/D converter interrupt None		1 system (1 type)

Current consum-ption (Typ.)	SLEEP	0.3 μA Typ.	0.45μA Typ. (Typ./ normal mode)
	HALT (32.768 kHz)	1.5 μA Typ. (Typ./ normal mode)	1.5μA Typ. (Typ./ normal mode)
	Run (32.768 kHz)	9μA Typ. (Typ./ normal mode)	7μA Typ. (Typ./ normal mode)
	Run (4M Hz)	1.1mA Typ. (Typ./ normal mode)	0.9mA Typ. (Typ./ normal mode)
Package form		QFP8-128pin, QFP15-128pin or chip	QFP18-176pin or chip