EPSON 4-bit MCU S1C63406 SPEC

Model	**S1C63406**	**S1C63408**
Code ROM size	6,144 words x 13 bits	8,192 words x 13 bits
Data ROM size	3,072 words x 4 bits	4,096 words x 4 bits
RAM size	1,024 words x 4 bits	1,024 words x 4 bits
Display memory size	540 bits	1,020 bits
LCD driver	60 segments 8 or 9 commons	60 segments 8, 9, 16 or 17 commons
Supply Voltage	1.3~ 3.6V	
OSC1 oscillation circuit	32.768 kHz (Typ.) crystal or 60 kHz (Typ.) CR oscillation circuit (*1)	
OSC3 oscillation circuit	4 MHz (Typ.) crystal, 3.58 MHz (Typ.) ceramic	
Instruction set	Basic instruction: 47 types (411 instructions with all) Addressing mode: 8 types	
Instruction execution time (during operation)	At 32.768kHz: 61µsec 122µsec 183µsec At 60kHz: 33µsec 67µsec 100µsec At 2MHz: 1µsec 2µsec 3µsec At 3.58MHz: 0.56µsec 1.12µsec 1.68µsec At 4MHz: 0.5µsec 1µsec 1.5µsec During operation at 4MHz: Min. 0.5µsec	
ROM capacity	Code ROM: 6,144 words x 13 bits (S1C63406) 8,192 words x 13 bits (S1C63408) Data ROM: 3,072 words x 4 bits (S1C63406) 4,096 words x 4 bits (S1C63408)	
RAM capacity	Data memory: 1,024 words x 4 bits Display memory: 540 bits (S1C63406) (120 words x 4 bits + 60 x 1bit) 1,020 bits (S1C63408) (240 words x 4bits + 60 x 1 bit)	
I/O port	Input ports: 4 bits (pull-up resistors may be supplemented *1) Output ports: 4 bits (It is possible to switch the 2 bits to special outputs *2) I/O ports: 4 bits with Schmitt trigger input (Built-in pull-up resistors may be disabled *2) (It is possible to switch to serial I/F inputs/outputs *2)	
Serial interface	1 port (8-bit clock synchronous or asynchronous system *2)	
LCD driver	60 segments x 8 or 9 commons (S1C63406 *2) 60 segments x 8, 9, 16 or 17 commons (S1C63408 *2)	
Time base counter	2 system (Clock timer, stop watch timer)	
Programmable timer	8 bits x 2 ch. Or 16 bits x 1ch., with event counter function	
Watchdog timer	Built-in	
SVD circuit	16 values, programmable (1.30 to 2.80V)	
Reset circuit	Built-in (1.8V, 1.6V or 1.4V *1), with power-ON reset function	
External interrupt	Input port interrupt: 4 systems	
Internal interrupt	Clock timer interrupt: 4 systems Stopwatch timer interrupt: 2 systems Programmable timer interrupt: 2 systems Serial interface interrupt: 3 systems	

Operating temperature range	-40 to 85°C
Current consumption (Typ.)	Low-power operation (*3) During SLEEP 1.2µA (Typ.) During HALT (32 kHz crystal oscillation) 3.6V (LCD OFF) 1.3µA (Typ.) 3.6V (LCD ON, V_{C1} standard) 3.0µA (Typ.) 3.6V (LCD ON, V_{C2} standard) 2.5µA (Typ.) During operation (32kHz crystal oscillation) 3.6V (LCD OFF) 3.0µA (Typ.) During HALT (60kHz CR oscillation) 3.6V (LCD OFF) 3.5µA (Typ.) 3.6V (LCD ON, V_{C1} standard) 6.2µA (Typ.) 3.6V (LCD ON, V_{C2} standard) 4.6µA (Typ.) During operation (60kHz CR oscillation) 3.6V (LCD OFF) 7.0µA (Typ.) High-speed operation: During operation (500kHz CR oscillation) 3.6V (LCD OFF) 90µA (Typ.) During operation (1MHz CR oscillation) 3.6V (LCD OFF) 200µA (Typ.) During operation (2MHz CR oscillation) 3.6V (LCD OFF) 350µA (Typ.) During operation (3.58MHz ceramic oscillation) 3.6V (LCD OFF) 500µA (Typ.) During operation (4MHz CR oscillation) 3.6V (LCD OFF) 550µA (Typ.)
Package	TQFP15-128pin (plastic) or chip (S1C63406) QFP15-128pin (plastic) or chip (S1C63408)

*1 Can be selected with mask option.

*2 Can be selected with software.

*3 Current consumption when the reset circuit option is not selected (Reset circuit current will be added when the reset circuit option is selected.)