

Product Specifications

Product number	S1C31D51
CPU core	CPU core ARM® Cortex®-M0+ 32-bit RISC processor
Flash memory	192 kB (for both programs and sound data)
RAM	10 kB (22 kB when not playing audio)
HW processor	Sound playback (original Epson format, 15.625 kHz sampling rate, 2-channel mixing, voice speed conversion) Self-memory check function (built-in Flash & RAM, external QSPI-Flash)
Sound DAC	Sampling rate: 15.625 kHz, mono
Serial interfaces	UART, SPI, and I2C: 3 channels each. QSPI: 1 channel
A/D converter	8 inputs, max. (12-bit successive-approximation ADC)
Supply voltage detector	32 level (1.7 V – 4.3 V)
DMA	4 channels (memory ⇄ memory, memory ⇄ peripheral)
Resistor to Frequency Converter(RFC)	1-channel, low-resistance sensor A-D conversion, CR oscillation with 24-bit counters
Infrared remote controller	1 channel (can be used to generate EL lamp driving waveforms)
Timers	16-bit timer (8 channels), 16-bit PWM (2 channels), watchdog timer (WDT), real-time clock (RTC)
Power supply voltage	Guaranteed operating range: 1.8 V - 5.5 V
SPI-Flash interface voltage	3.3 V (3.0 V – 3.6 V)
Operating frequency	16 MHz (VD1 voltage mode: mode 0) 1.8 MHz (VD1 voltage mode: mode 1)
Power consumption ²	RUN: 243 uA/MHz (VD1 voltage mode: mode 0) RUN: 155 uA / 1 MHz (VD1 voltage mode: mode 1) SLEEP: 0.46 uA, RTC mode: 0.95 uA
I/O ports	Max. 91 Of which up to 32 may be universal port multiplexers (UPMUX)
Packages	P-TQFP048-0707-0.50 (pin pitch: 0.5 mm) P-LQFP064-1010-0.50 (pin pitch: 0.5 mm) P-TQFP080-1212-0.50 (pin pitch: 0.5 mm) P-LQFP100-1414-0.50 (pin pitch: 0.5 mm)

² At typical environmental values, SLEEP mode, RTCA = On, 25 degrees Celsius