S1C17 Family Products overview

Products	Display	Clock frequency			Supply current				Supply voltage [V]	Memory				I/O	Timer							SIO					R/F converter	A/D converter	Multiplier/Divider	SVD*1	Temparature detection circuit	Form of delivery	
	EPD Driver (TP/BP)	High-speed [Hz] (Max.)	Low-speed [Hz] (Typ.)	Built-in oscillator [Hz] (Typ.)	Sleep [µA] (Typ.)	Halt [µA] (Typ.)	32kHz Operating [µA] (Typ.)	4MH z operating [µA] (Typ.)		Flash ROM [Byte]	Mask ROM [Byte]	RAM [Byte]		I/O port	8-bit timer	16-bit timer	16bit-PWM timer	Stopwatch	Watchdog timer	Clock	Real-time clock	UART	SPI	I²C master	I²C slave	Remote controller transmission and reception						Package	Chip
S1C17F00 series	[Medium and small segment EPD] The product also includes embedded features such as a real-time clock, theoretical regulation, a driver capable of wringing the maximum performance from segmented EPDs, and a temperature sensor. As a result, the device does not simply drive the display, but also corrects temperature effects that could harm display quality making it possible to maximize the characteristics of an e-paper display with a single chip.																															
S1C17F57	64 (2TP/2BP)	4.2M	32.768 k	500K/1M/2M	0.12	0.55	20.0	1400	2.0 to 3.6	32K*2	–	2K		29	2	2	–	○	○	○	○	1	1	○	○	–	1	–	○	○	○	TQFP15-128	○

____: Under development

*1: SVD is an abbreviation for Supply Voltage Detector.

*2: During programming in flash memory : 7.0V (Typ.)

Products	EPD Driver (TP/BP)	Supply voltage [V]	EPD Operating voltage [V]	Flash ROM [bit]	Interafces		Built-in oscillator [Hz] (Typ.)	Temparature detection circuit	Power-on reset	Boost power supply circuit	Form of delivery	
					I²C slave	SPI slave					Package	Chip
S1D14F00 series	[Expansion EPD Dr] These driver ICs can expand the segment display domain when coupled with the S1C17F57. Since display circuitry optimized for driving EPDs is built-in, outstanding performance is also demonstrated even when used as a standalone driver IC.											
S1D14F51	24 (1TP/1BP)	1.75 to 5.5	9.15/12.30/15.45	16k*1	○	○	1M	○	○	○	PFBGA (TBD)	○ (TBD)
S1D14F57	256 (2TP/2BP)	1.75 to 5.5	9.15/12.30/15.45	16k*1	○	○	1M	○	○	○	–	○ (TBD)

____: Under development

*1: During programming in flash memory : 7.0V (Typ.)

S1C17 Family Products overview

Products	Display		Clock frequency			Supply current			Supply voltage [V]	Memory					Bus		I/O			Timer							SIO							A/D converter	DMA	Multiplier/MAC	Divider	USB	Form of delivery		Remarks
	LCD Controller																																							
	with built-in VRAM [bpp]	with external VRAM [bpp]	High-speed [Hz] (Max.)	Low-speed [Hz] (Typ.)	Built-in oscillator (Hz) (Typ.)	Sleep [A] (Typ.)	Halt [A] (Typ.)	Operating [A] (Typ.)		Flash ROM [Byte]	Mask ROM [Byte]	RAM [Byte]	VRAM [Byte]	Backup RAM [Byte]	Address bus	Data bus	Input port	I/O port	Support of multiple voltages *6	8-bit timer	16-bit timer	16-bit PWM timer	Stopwatch	Watchdog timer	Clock	Real-time clock	UART (IrDA1.0)	SPI	I²C master	I²C slave	I²S	Remote controller transmission and reception						Package	Chip	
S1C17500 series	[High-performance] The 16-bit Microcontrollers allowing the 32-bit level sophisticated processing to perform. Suitable for a wide range of whiteware products and other home appliances due to the utilization of various types of built-in interfaces such as USB, UART, SPI, I²C, I²S, A/D converter, and remote controller transmission circuits, as well as the improved user interface using music, audio, touch switches, etc.																																					
S1C17501	–	–	48M	32.768k	–	1.5µ *4	20m (48MHz)	40m (48MHz)	3.0 to 3.6	96K *9 128K *9	–	4K	–	2K	23	8/16 *3	8	83	–	6	2	1	–	1	–	○ *2	1	2	1	–	2	○	8	–	○	–	FS2.0	TQFP14-100 *7 TQFP15-128 *7	–	
S1C17800 series	[High-performance] The 16-bit Microcontrollers allowing the 32-bit level sophisticated processing to perform. The device having the LCDC can display the 1-bpp maximum VGA monochrome images. Also suitable for controlling the operation panels of whiteware products and other various types of products due to the utilization of a wide array of built-in interfaces such as USB, various types of serial interfaces, and A/D converter, as well as the improved user interface using display, music, touch panel, etc.																																					
S1C17801	1 (120 × 120)	4 (QVGA) 1 (VGA)	48M	32.768k	–	1.5µ *4	20m (48MHz)	40m (48MHz)	3.0 to 3.6	128K *9	–	4K	2K *1		23	8/16	8	83	–	6	2	1	–	1	–	○ *2	1	2	1	–	1	○	8	–	○	–	FS2.0	TQFP15-128 PFBGA7U-144	–	I/F of LCD-DR only
S1C17803	1 (QVGA)	4 (QVGA) 1 (VGA)	33M	32.768k	–	1.3µ *4	15m (33MHz)	19m (33MHz)	2.7 to 5.5	128K *9	–	16K		16	23	8/16 *3	4	95	○	4	1	2	–	1	–	○ *2	1 2 *5		1 1	1	1	○	4	4	○	○	–	TQFP14-100 TQFP15-128	–	I/F of LCD-DR only

*1: Also used as the RAM
*2: Real-time clock (The battery backed up operation is supported.)
*3: The TQFP14-100 has the 8-bit fixed data bus.
*4: Unmounted OSC1.
*5: Universal serial interface (Any of UART, SPI and I²C functions can be selected.)
*6: Coexistence of 5V and 3V (and other) different interface voltages is supported.
*7: TQFP14-100(Flash96KB), TQFP15-128(Flash128KB)
*8: Built-in a remote controller transmission and reception circuit
*9: This product uses SuperFlash® technology licensed from Silicon Storage Technology, Inc.

S1C17 Family Products overview

Products	Display	Clock frequency			Supply current				Supply voltage [V]	Memory			I/O	Timer							SIO					R/F converter	A/D converter	Multiplier/Divider	SVD *1	Form of delivery	
	LCD Driver seg×com	High-speed [Hz] (Max.)	Low-speed [Hz] (Max.)	Built-in oscillator [Hz] (Typ.)	Sleep [µA] (Typ.)	Halt [µA] (Typ.)	32kHz Operating [µA] (Typ.)	1MHz Operating [µA] (Typ.)		Flash ROM [Byte]	Mask ROM [Byte]	RAM [Byte]	I/O port	8-bit timer	16-bit timer	16-bit PWM timer	Stopwatch	Watchdog timer	Clock	Real-time clock	UART	SPI	I²C master	I²C slave	Remote controller transmission and reception					Package	Chip
S1C17100/600/700 series	[Stand-alone Low Power] This 16-bit MCU has improved the throughput and the development environment while maintaining low power consumption just like 4/8-bit Epson MCU. It includes LCD driver, power circuit, clock function and various types of interfaces, and is suitable for watches, clocks, remote controllers, and healthcare devices.																														
S1C17121	40 × 4 36 × 8	4.2M	32.768k	2.7M	0.15	0.9	7.0	250	1.8 to 3.6	–	32K	2K	36	3	3	1	○	○	○	–	2	1	○	○	○	2	8	○	○	TQFP14-100 VFBGA7H-144	○
S1C17611	12 × 4 8 × 8	8.2M	32.768k	2.7M	0.75	2.5	12	400	1.8 to 3.6 *2	32K *3	–	2K	19	2	3	2	○	○	○	–	1	1	○	○	–	1	4	○	○	QFP12-48	○
S1C17601	20 × 4 16 × 8	8.2M	32.768k	2.7M	0.75	2.5	12	340	1.8 to 3.6 *2	32K *3	–	2K	24	2	3	2	○	○	○	–	1	1	○	○	–	1	4	○	○	TQFP13-64 VFBGA8H-181	○
S1C17621	40 × 4 36 × 8	8.2M	32.768k	2.7M	0.75	2.5	15	410	1.8 to 3.6 *2	32K *3	–	2K	36	3	3	1	○	○	○	–	2	1	○	○	○	2	8	○	○	TQFP14-100	○
S1C17602	40 × 4 36 × 8	8.2M	32.768k	2.7M	0.75	2.5	15	410	1.8 to 3.6 *2	64K *3	–	4K	36	3	3	1	○	○	○	–	2	1	○	○	○	2	8	○	○	TQFP14-100 VFBGA7H-144	○
S1C17622	56 × 4 52 × 8	8.2M	32.768k	2.7M	1.0	2.5	14	400	1.8 to 3.6 *2	64K *3	–	4k	40	3	3	1	○	○	○	–	2	1	○	○	○	2	8	○	○	TQFP15-128	○
S1C17604	40 × 4 36 × 8	8.2M	32.768k	2.7M	1.0	2.5	14	400	1.8 to 3.6 *2	128K *3	–	8K	36	3	3	3	○	○	○	○	2	1	○	○	○	2	8	○	○	TQFP14-100	○
S1C17624	56 × 4 52 × 8	8.2M	32.768k	2.7M	1.0	2.5	14	400	1.8 to 3.6 *2	128K *3	–	8K	40	3	3	3	○	○	○	○	2	1	○	○	○	2	8	○	○	TQFP15-128	○
S1C17651	20 × 4	4.2M	32.768k	2M/1M/500K	TBD	TBD	TBD	TBD	2.0 to 3.6	16K	–	2K	12	1	–	1	–	○	○	○	1	1	–	–	–	–	–	○	○	TQFP13-64	○
S1C17653	32 × 4	4.2M	32.768k	2M/1M/500K	TBD	TBD	TBD	TBD	2.0 to 3.6	16K	–	2K	12	1	–	1	–	○	○	○	1	1	–	–	–	–	–	○	○	TQFP14-80	○ *9
S1C17711	64 × 16 56 × 24	8.2M	32.768k	2.7M	1.0	2.5	12	400	1.8 to 3.6 *2	64K *3	–	4k	29	–	4	4	○	○	○	–	1	1	○	○	○	2	8	○	○	TQFP15-128 VFBGA10H-144	○
S1C17704 (S1C17701 *5)	72 × 16 56 × 32	8.2M	32.768k	–	1.0	2.6	17 *6	550 *7	1.8 to 3.6 *2	64K *3	–	4K	28	2	3	1	○	○	○	–	1	1	○	–	○	–	–	–	○	TQFP24-144 VFBGA10H-144 VFBGA8H-161	○
S1C17702	88 × 16 72 × 32	8.2M	32.768k	2.7M	1.0	2.5	16	450	1.8 to 3.6 *2	128K *3	–	8K	28	3	3	1	○	○	○	–	1	1	○	–	○	–	–	○	○	QFP21-176	○
S1C17703	120 × 16/14/32 60 × 64	8.2M	32.768k	2.7M	1.0	2.5	15	450	1.8 to 3.6 *4	256K *3	–	12K	35	–	5	4	○	○	○	–	2	3	○	○	○	2	8	○	○	QFP21-216	○
S1C17705	128 × 16/24/32 64 × 64	8.2M	32.768k	2.7M	1.2	2.7	18	550	1.8 to 3.6 *4	512K *3	–	12K	35	–	5	4	○	○	○	–	2	3	○	○	○	2	8	○	○	VFBGA10H-240	○
S1C17706	160 × 16/24/32 64 × 64	8.2M	32.768k	2.7M	1.2	2.7	18	550	1.8 to 3.6 *4	1M *3	–	12K	35	–	5	4	○	○	○	–	2	3	○	○	○	2	8	○	○	QFP22-256	○
S1C17000/500 series	[Small package] The series products specialized for applications. Lineup of WCSP 48-pin packages (approx. 3-mm square) are suitable for portable gears having the limited packaging area. Also, various types of serial interface (I/F) and A/D converters are available in sensor applications.																														
S1C17001	–	8.2M	32.768k	–	0.5	2.5	10	256	1.65 to 2.7 (Core) 1.65 to 3.6 (I/O)	–	32K	2K	28	2	3	1	○	○	○	–	1	1	○	–	○	–	–	–	–	QFP12-48 QFN7-48 WCSP-48	○
S1C17002	–	20M	32.768k	–	0.5	3.3	8.0	310	1.65 to 1.95 (Core) 1.65 to 3.6 (I/O)	–	128K	8K	34	8	2	1	–	○	–	○	1	1	○	○	○	–	4	○	–	TQFP12-64 WCSP-48	○
S1C17003	–	20M	32.768k	–	1.0	3.3	8.0	350	1.65 to 1.95 (Core) 1.65 to 3.6 (I/O)	–	64K	4K	34	3	3	1	○	○	○	–	2	1	○	○	○	–	4	○	–	TQFP12-64 WCSP-48	○
S1C17554	–	24M	32.768k	–	0.8	2.7	16	450	1.65 to 1.95 (Core) 1.65 to 5.5 (I/O)	128K	–	16K	40/34	–	5	4	○	○	○	–	2	3	○	○	○	–	4	○	–	TQFP13-64 (I/O=40) WCSP-48 (I/O=34)	○
S1C17564	–	24M	32.768k	2 to 12M	0.8	2.7	16	450	2.0 to 5.5	128K	–	16K	40	–	5	4	○	○	○	–	2	3	○	○	○	–	4	○	–	TQFP13-64	○
S1C17572	–	24M	32.768k	2 to 12M	TBD	TBD	TBD	TBD	1.65 to 1.95 (Core) 1.65 to 5.5 (I/O)	64K	–	8K	16	–	5	4	○	○	○	–	1	2	○	○	–	–	9 *8	○	–	WCSP-48	–
S1C17582	–	24M	32.768k	2 to 12M	TBD	TBD	TBD	TBD	2.0 to 55.5	64K	–	8K	24	–	5	4	○	○	○	–	2	3	○	○	○	–	9 *8	○	–	TQFP13-64	○

____: Under development
*1: SVD is an abbreviation for Supply Voltage Detector.
*2: During programming in flash memory: 2.7V to 3.6V
*3: This product uses SuperFlash® technology licensed from Silicon Storage Technology, Inc.
*4: During programming in flash memory: 2.5V to 3.6V
*5: Executes 1 instruction/1.5 clocks
*6: For S1C17701: 14µA
*7: For S1C17701: 420µA
*8: 12-bit resolvability
*9: Al pad, Au bump