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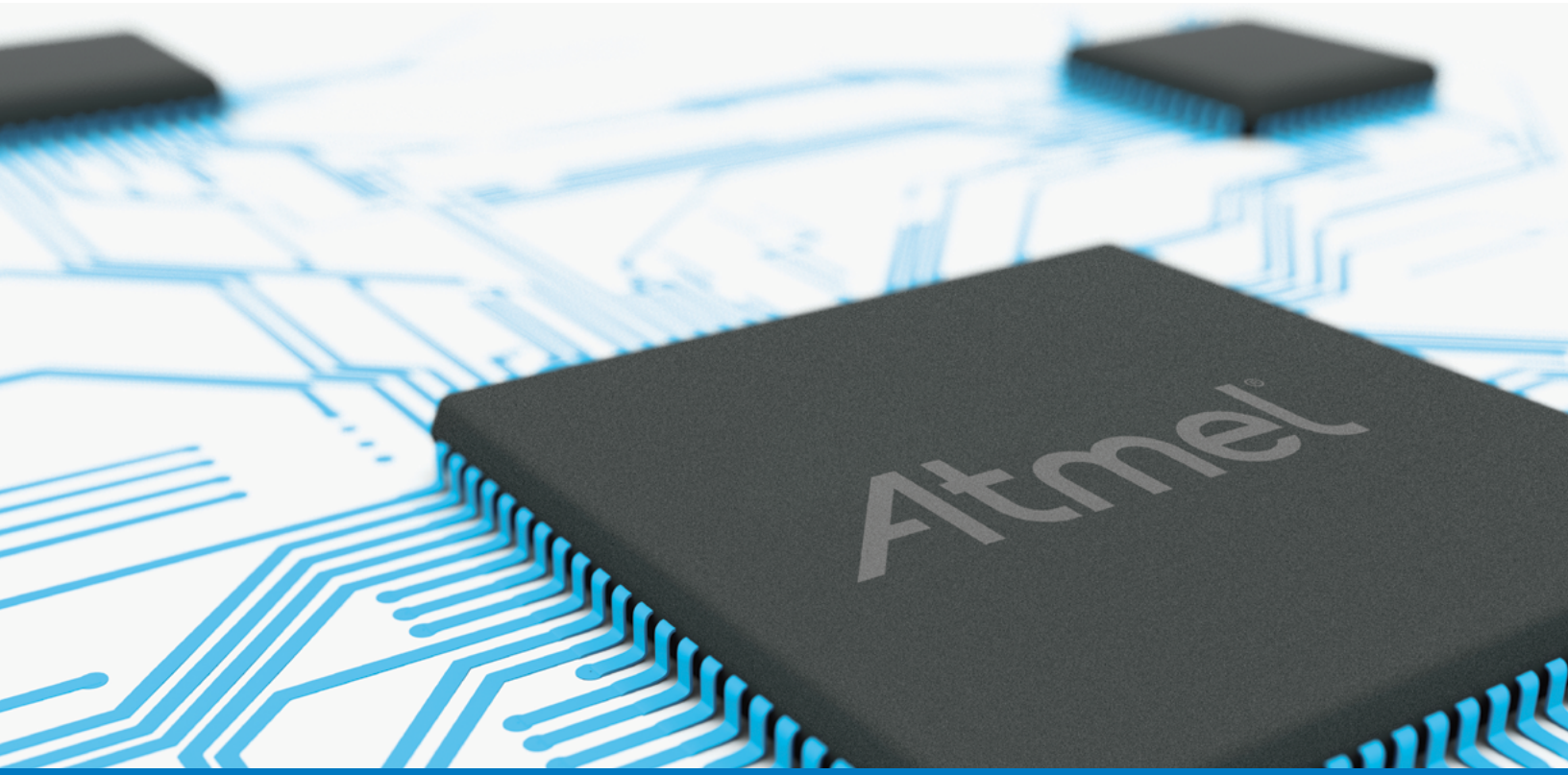

Atmel Flash Microcontrollers

Product Portfolio

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Broad Portfolio of Microcontrollers for an Array of Applications

With Atmel® microcontrollers, you have robust performance, low power, high-speed connectivity and innovative features at your disposal. Our AVR® 8- and 32-bit devices are based on the industry's most code-efficient architecture for C and assembly programming.

Our Atmel | SMART ARM®-based microcontrollers are flexible, highly integrated and designed to optimize system control, user interface management and ease of use. Both architectures share a single integrated development platform, Atmel Studio, which provides time-saving example projects with source code, access to debuggers/simulators, integration with QTouch® tools for capacitive touch applications and access to the Atmel Gallery online apps store for embedded software and extensions. Also part of our microcontroller portfolio are 8-bit devices based on the 8051 instruction set. Whether you are working on legacy, existing or new designs, you'll get the latest features and functionality from more than 50 part numbers.

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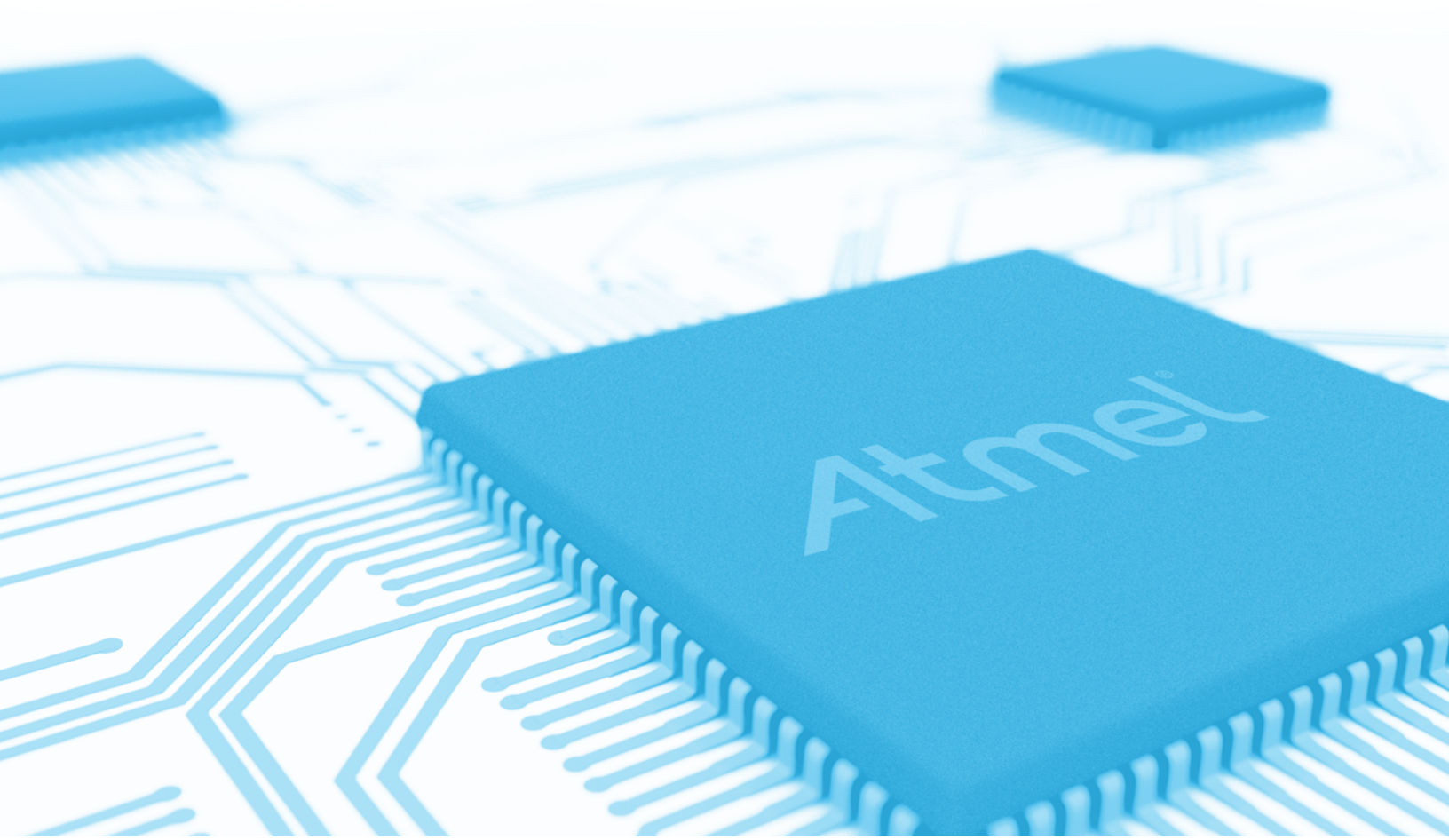
Atmel Flash Microcontrollers

Product Portfolio



tinyAVR 8-bit Microcontrollers

Product	Flash (KB)	EEPROM (Bytes)	SRAM (Bytes)	picoPower®	QTouch® channels	I/O Pins	UART/USART	SPI/TWI by USI	TWI (I²C Compliant)	8-bit Timers	16-bit Timers
ATtiny4	0.5	--	32	--	1	4	--	--	--	--	1
ATtiny5	0.5	--	32	--	1	4	--	--	--	--	1
ATtiny9	1	--	32	--	1	4	--	--	--	--	1
ATtiny10	1	--	32	--	1	4	--	--	--	--	1
ATtiny13A	1	64	64	Yes	--	6	--	--	--	1	--
ATtiny20	2	--	128	Yes	5	12	--	1	1	1	1
ATtiny24A	2	128	128	Yes	4	12	--	1	--	1	1
ATtiny25	2	128	128	--	4	6	--	1	--	2 (c)	--
ATtiny25V	2	128	128	--	4	6	--	1	--	2 (c)	--
ATtiny26	2	128	128	--	--	16	--	1	--	2	--
ATtiny26L	2	128	128	--	--	16	--	1	--	2	--
ATtiny28L	2	--	(b)	--	--	11	--	--	--	1	--
ATtiny28V	2	--	(b)	--	--	11	--	--	--	1	--
ATtiny40	4	--	128	Yes	12	18	--	1	1	1	1
ATtiny43U	4	64	256	--	8	16	--	1	--	2	--
ATtiny44A	4	256	256	Yes	6	12	--	1	--	1	1
ATtiny45	4	256	256	--	3	6	--	1	--	2 (c)	--
ATtiny45V	4	256	256	--	3	6	--	1	--	2 (c)	--
ATtiny48	4	64	256	Yes	12	28 (f)	--	--	1	1	1
ATtiny84A	8	512	512	Yes	6	12	--	1	--	1	1
ATtiny85	8	512	512	--	3	6	--	1	--	2 (c)	--
ATtiny85V	8	512	512	--	3	6	--	1	--	2 (c)	--
ATtiny87	8	512	512	--	--	16	1(LIN)	1	--	1	1
ATtiny88	8	64	512	Yes	12	28 (f)	--	--	1	1	1
ATtiny167	16	512	512	--	8	16	1(LIN)	1	--	1	1
ATtiny261A	2	128	128	Yes	4	16	--	1	--	1 (c)	1
ATtiny441	4	256	128	Yes	1	14	2	1	1	1	2
ATtiny461A	4	256	256	Yes	6	16	--	1	--	1 (c)	1
ATtiny828	8	256	512	Yes	-/-	28	1		1	1	1
ATiny841	8	512	128	Yes	1	14	2	1	1	1	2
ATtiny861A	8	512	512	Yes	8	16	--	1	--	1 (c)	1
ATtiny1634	16	256	1K	Yes	12	18	2	1	1	1	1
ATtiny2313A	2	128	128	Yes	--	18	1	1	--	1	1
ATtiny4313	4	256	256	Yes	--	18	1	1	--	1	1

(a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also halide-free and fully green.
(b) The AVR core has 32 internal registers that can be used as RAM storage.
(c) One high-speed 8-bit timer/counter.
(d) Two high-frequency, 250kHz, PWM outputs.
(e) Three high-frequency PWM outputs for BLDC motor control.
(f) 28 programmable I/O lines in 32-lead TQFP and 32-pad QFN/MLF package, 24 programmable I/O lines in 28-pin PDIP and 28-pad QFN/MLF package.
(g) ATtiny5 and ATtiny10 include a 4-channel 8-bit ADC.
(h) 0.7 - 1.8V via on-chip boost converter, 1.8 - 5.5V with the boost converter bypassed.

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Atmel Flash Microcontrollers

Product Portfolio

PWM (Ch.)	10-bit ADC (Ch.)	Analog Gain Stage	DebugWire/ OCD	Vcc Range (V)	Clock Speed (MHz)	Green Packages (a)	Temp. Range
2	--	--	--	1.8 - 5.5	12	SOT-23 (6-pins), UDFN8	-40°C to +85°C
2	4 (g)	--	--	1.8 - 5.5	12	SOT-23 (6-pins), UDFN8	-40°C to +85°C
2	--	--	--	1.8 - 5.5	12	SOT-23 (6-pins), UDFN8	-40°C to +85°C
2	4 (g)	--	--	1.8 - 5.5	12	SOT-23 (6-pins), UDFN8	-40°C to +85°C
2	4	--	Yes	1.8 - 5.5	20	PDIP8, SOIC8, WQFN20, UDFN10	-40°C to +85°C
4	8	--	--	1.8 - 5.5	12	SOIC14, TSSOP14, VQFN20, UFBGA15, WLCSP12	-40°C to +85°C
4	8	Yes	Yes	1.8 - 5.5	20	PDIP14, SOIC14, WQFN20, VQNF20	-40°C to +85°C
4 (d)	4	Yes	Yes	2.7 - 5.5	20	PDIP8, SOIC8, WQFN20	-40°C to +85°C
4 (d)	4	Yes	Yes	1.8 - 5.5	10	PDIP8, SOIC8, WQFN20	-40°C to +85°C
2	11	Yes	--	4.5 - 5.5	16	PDIP20, SOIC20, VQFN32	-40°C to +85°C
2	11	Yes	--	2.7 - 5.5	8	PDIP20, SOIC20, VQFN32	-40°C to +85°C
--	--	--	--	2.7 - 5.5	4	PDIP28, VQFN32, TQFP32	-40°C to +85°C
--	--	--	--	1.8 - 5.5	1.2	PDIP28, VQFN32, TQFP32	-40°C to +85°C
2	12	--	--	1.8 - 5.5	12	SOIC20, TSSOP20, VQFN20	-40°C to +85°C
4	4	--	Yes	0.7 - 1.8(h)	8	SOIC20, WQFN20	-40°C to +85°C
4	8	Yes	Yes	1.8 - 5.5	20	PDIP14, SOIC14, VQFN20 , WQFN20	-40°C to +85°C
4 (d)	4	Yes	Yes	2.7 - 5.5	20	PDIP8, TSSOP8, SOIC8, WQFN20	-40°C to +85°C
4 (d)	4	Yes	Yes	1.8 - 5.5	10	PDIP8, TSSOP8, SOIC8, WQFN20	-40°C to +85°C
2	8	--	Yes	1.8 - 5.5	12	PDIP28, VQFN28, VQFN32, TQFP32	-40°C to +85°C
4	8	Yes	Yes	1.8 - 5.5	20	PDIP14, SOIC14, QFN20	-40°C to +85°C
4 (d)	4	Yes	Yes	2.7 - 5.5	20	PDIP8, SOIC8, WQFN20	-40°C to +85°C
4 (d)	4	Yes	Yes	1.8 - 5.5	10	PDIP8, SOIC8, WQFN20	-40°C to +85°C
5	11	Yes	Yes	1.8 - 5.5	16	VQFN32, TSSOP20, SOIC20	-40°C to +85°C
2	8	--	Yes	1.8 - 5.5	12	PDIP28, VQFN28, VQFN32, TQFP32	-40°C to +85°C
5	11	Yes	Yes	1.8 - 5.5	16	VQFN32, TSSOP20, SOIC20	-40°C to +85°C
5 (e)	11	Yes	Yes	1.8 - 5.5	20	PDIP20, SOIC20, VQFN32, TSSOP20	-40°C to +85°C
2	12	Yes	Yes	1.7 - 5.5	16	SOIC14, VQFN20 , WQFN20	-40°C to +85°C
5 (e)	11	Yes	Yes	1.8 - 5.5	20	PDIP20, SOIC20, VQFN32, TSSOP20	-40°C to +85°C
4	28		Yes	1.7 - 5.5	20	VQFN32, TQFP32	-40°C to +85°C
2	12	Yes	Yes	1.7 - 5.5	16	SOIC14, VQFN20, WQFN20	-40°C to +85°C
5 (e)	11	Yes	Yes	1.8 - 5.5	20	PDIP20, SOIC20, VQFN32, TSSOP20	-40°C to +85°C
4	12	Yes	--	1.8 - 5.5	12	VQFN20, SOIC20	-40°C to +85°C
4	--	--	Yes	1.8 - 5.5	20	PDIP20, SOIC20, WQFN20, VQNF20	-40°C to +85°C
4	--	--	Yes	1.8 - 5.5	20	PDIP20, SOIC20, WQFN20, VQNF20	-40°C to +85°C

megaAVR 8-bit Microcontrollers

Product	Flash (Kbytes)	SRAM (Kbytes)	EEPROM (Bytes)	picoPower	QTouch Channels	Max I/O Pins	Ext Interrupts	USB	SPI	TWI (I^2C)	UART	CAN	LIN
ATmega8	8	1	512	--	12	23	2	--	1	1	1	--	--
ATmega8A	8	1	512	--	12	23	2	--	1	1	1	--	--
ATmega8515	8	0.5	512	--	16	35	3	--	1	--	1	--	--
ATmega8535	8	0.5	512	--	16	32	3	--	1	1	1	--	--
ATmega16	16	1	512	--	16	32	3	--	1	1	1	--	--
ATmega16A	16	1	512	--	16	32	3	--	1	1	1	--	--
ATmega32	32	2	1024	--	16	32	3	--	1	1	1	--	--
ATmega32A	32	2	1024	--	16	32	3	--	1	1	1	--	--
ATmega64	64	4	2048	--	16	53	8	--	1	1	2	--	--
ATmega64A	64	4	2048	--	16	53	8	--	1	1	2	--	--
ATmega128	128	4	4096	--	16	53	8	--	1	1	2	--	--
ATmega128A	128	4	4096	--	16	53	8	--	1	1	2	--	--
ATmega1284	128	16	4096	--	16	32	32	--	3	1	2	--	--
ATmega1284P	128	16	4096	Yes	16	32	32	--	3	1	2	--	--
ATmega162	16	1	512	--	16	35	3	--	1	--	2	--	--
ATmega48	4	0.5	256	--	12	23	24	--	2	1	1	--	--
ATmega48A	4	0.5	256	--	12	23	24	--	2	1	1	--	--
ATmega48P	4	0.5	256	Yes	12	23	24	--	2	1	1	--	--
ATmega48PB	4	0.5	256	Yes	12	27	24	--	2	1	1	--	--
ATmega48PA	4	0.5	256	Yes	12	23	24	--	2	1	1	--	--
ATmega88	8	1	512	--	12	23	24	--	2	1	1	--	--
ATmega88A	8	1	512	--	12	23	24	--	2	1	1	--	--
ATmega88P	8	1	512	Yes	12	23	24	--	2	1	1	--	--
ATmega88PB	8	1	512	Yes	12	27	24	--	2	1	1	--	--
ATmega88PA	8	1	512	Yes	12	23	24	--	2	1	1	--	--
ATmega168	16	1	512	--	16	23	24	--	2	1	1	--	--
ATmega168A	16	1	512	--	16	23	24	--	2	1	1	--	--
ATmega168P	16	1	512	Yes	16	23	24	--	2	1	1	--	--
ATmega168PB	16	1	512	Yes	16	27	24	--	2	1	1	--	--
ATmega168PA	16	1	512	Yes	16	23	24	--	2	1	1	--	--
ATmega328	32	2	1024	--	16	23	24	--	2	1	1	--	--
ATmega328P	32	2	1024	Yes	16	23	24	--	2	1	1	--	--
ATmega165P	16	1	512	Yes	16	54	17	--	2	1	1	--	--
ATmega165PA	16	1	512	Yes	16	54	17	--	2	1	1	--	--

(a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also halide free and fully green.
(b) Only 6 ADC in PDIP packages.
(c) One of these is a 10-bit timer/counter.
(d) Two of these are 12-bit timer/counters.
(e) Three of these are 12-bit timer/counters.

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Segment LCD	ADC Channels	Analog Comparators	DAC Channels	8-bit Timers	16-bit Timers	PWM Channels	Operating Voltage (Vcc)	Max. Operating Frequency	Green Packages(a)	Temp. Range
--	8	1	--	2	1	3	2.7 -5.5	16	VQFN32, TQFP32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	3	2.7 -5.5	16	VQFN32, TQFP32, PDIP28	-40°C to +85°C
--	--	--	--	2	1	3	2.7 -5.5	16	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	4	2.7 -5.5	16	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	4	2.7 -5.5	16	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	4	2.7 -5.5	16	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	4	2.7 -5.5	16	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	4	2.7 -5.5	16	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	2	7	2.7 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	2	7	2.7 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	2	7	2.7 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	2	7	2.7 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	1	2	6	1.8 -5.5	20	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	1	2	6	1.8 -5.5	20	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	--	1	--	2	2	6	1.8 -5.5	16	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, VQFN28, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, VQFN28, UFBGA 32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN 32 TQFP 32 VQFN 28 PDIP 28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	MLF (VQFN) 32M1-A 32,TQFP 32A 32	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, VQFN28, UFBGA 32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, VQFN28, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, UFBGA32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	MLF (VQFN) 32M1-A 32,TQFP 32A 32	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, VQFN28, UFBGA 32, PDIP28	-40°C to +85°C
--	8(b)	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, PDIP28	-40°C to +85°C
--	8(b)	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, UFBGA32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	MLF (VQFN) 32M1-A 32,TQFP 32A 32	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, UFBGA32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN32, TQFP32, PDIP28	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C

megaAVR 8-bit Microcontrollers - Continued

Product	Flash (Kbytes)	SRAM (Kbytes)	EEPROM (Bytes)	picoPower	QTouch Channels	Max I/O Pins	Ext Interrupts	USB	SPI	TWI (I^2C)	UART	CAN	LIN
ATmega325	32	2	1024	--	16	54	17	--	2	1	1	--	--
ATmega325A	32	2	1024	--	16	54	17	--	2	1	1	--	--
ATmega325P	32	2	1024	Yes	16	54	17	--	2	1	1	--	--
ATmega3250	32	2	1024	--	16	69	25	--	2	1	1	--	--
ATmega3250A	32	2	1024	--	16	69	25	--	2	1	1	--	--
ATmega3250P	32	2	1024	Yes	16	69	25	--	2	1	1	--	--
ATmega645	64	4	2048	--	16	54	17	--	2	1	1	--	--
ATmega645A	64	4	2048	--	16	54	17	--	2	1	1	--	--
ATmega645P	64	4	2048	Yes	16	54	17	--	2	1	1	--	--
ATmega6450	64	4	2048	--	--	69	25	--	2	1	1	--	--
ATmega6450A	64	4	2048	--	--	69	25	--	2	1	1	--	--
ATmega6450P	64	4	2048	Yes	--	69	25	--	2	1	1	--	--
ATmega640	64	8	4096	--	16	86	32	--	5	1	4	--	--
ATmega1281	128	8	4096	--	16	54	17	--	3	1	2	--	--
ATmega1280	128	8	4096	--	16	86	32	--	5	1	4	--	--
ATmega2561	256	8	4096	--	--	54	17	--	3	1	2	--	--
ATmega2560	256	8	4096	--	--	86	32	--	5	1	4	--	--
ATmega164A	16	1	512	--	16	32	32	--	3	1	2	--	--
ATmega164P	16	1	512	Yes	16	32	32	--	3	1	2	--	--
ATmega164PA	16	1	512	Yes	16	32	32	--	3	1	2	--	--
ATmega324A	32	2	1024	--	16	32	32	--	3	1	2	--	--
ATmega324P	32	2	1024	Yes	16	32	32	--	3	1	2	--	--
ATmega324PA	32	2	1024	Yes	16	32	32	--	3	1	2	--	--
ATmega644	64	4	2048	--	16	32	32	--	3	1	1	--	--
ATmega644A	64	4	2048	--	16	32	32	--	3	1	2	--	--
ATmega644P	64	4	2048	Yes	16	32	32	--	3	1	2	--	--
ATmega644PA	64	4	2048	Yes	16	32	32	--	3	1	2	--	--
ATmega169A	16	1	512	--	16	54	17	--	2	1	1	--	--
ATmega169P	16	1	512	Yes	16	54	17	--	2	1	1	--	--
ATmega169PA	16	1	512	Yes	16	54	17	--	2	1	1	--	--
ATmega329	32	2	1024	--	16	54	17	--	2	1	1	--	--
ATmega329A	32	2	1024	--	16	54	17	--	2	1	1	--	--
ATmega329P	32	2	1024	Yes	16	54	17	--	2	1	1	--	--
ATmega329PA	32	2	1024	Yes	16	54	17	--	2	1	1	--	--
ATmega3290	32	2	1024	--	16	69	32	--	2	1	1	--	--
ATmega3290A	32	2	1024	--	16	69	32	--	2	1	1	--	--
ATmega3290P	32	2	1024	Yes	16	69	32	--	2	1	1	--	--

(a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also halide free and fully green.
(b) Only 6 ADC in PDIP packages.
(c) One of these is a 10-bit timer/counter.
(d) Two of these are 12-bit timer/counters.
(e) Three of these are 12-bit timer/counters.

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Atmel Flash Microcontrollers

Product Portfolio

Segment LCD	ADC Channels	Analog Comparators	DAC Channels	8-bit Timers	16-bit Timers	PWM Channels	Operating Voltage (Vcc)	Max. Operating Frequency	Green Packages(a)	Temp. Range
--	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	20	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	20	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	16	TQFP 100	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	20	TQFP 100	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	20	TQFP 100	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	16	TQFP 100	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	20	TQFP 100	-40°C to +85°C
--	8	1	--	2	1	4	1.8 -5.5	20	TQFP 100	-40°C to +85°C
--	16	1	--	2	4	15	1.8 -5.5	16	TQFP100, CBGA100	-40°C to +85°C
--	8	1	--	2	4	8	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	16	1	--	2	4	15	1.8 -5.5	16	TQFP100, CBGA100	-40°C to +85°C
--	8	1	--	2	4	8	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
--	16	1	--	2	4	15	1.8 -5.5	16	TQFP100, CBGA100	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, QFN44, VFBGA49, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, QFN44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, QFN44, VFBGA49, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, QFN44, VFBGA49, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, QFN44, VFGA49, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, QFN44, VFGA49, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, PDIP40	-40°C to +85°C
--	8	1	--	2	1	6	1.8 -5.5	20	VQFN44, TQFP44, QFN44, VFGA49, PDIP40	-40°C to +85°C
100	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64, QFN64	-40°C to +85°C
100	8	1	--	2	1	4	1.8 -5.5	16	TQFP64, QFN64	-40°C to +85°C
100	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64, QFN64	-40°C to +85°C
100	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
100	8	1	--	2	1	4	1.8 -5.5	20	VQFN64, TQFP64	-40°C to +85°C
100	8	1	--	2	1	4	1.8 -5.5	20	VQFN64, TQFP64	-40°C to +85°C
100	8	1	--	2	1	4	1.8 -5.5	20	VQFN64, TQFP64	-40°C to +85°C
160	8	1	--	2	1	4	1.8 -5.5	16	TQFP 100	-40°C to +85°C
160	8	1	--	2	1	4	1.8 -5.5	20	TQFP 100	-40°C to +85°C
160	8	1	--	2	1	4	1.8 -5.5	20	TQFP 100	-40°C to +85°C

megaAVR 8-bit Microcontrollers - Continued

Product	Flash (Kbytes)	SRAM (Kbytes)	EEPROM (Bytes)	picoPower	QTouch Channels	Max I/O Pins	Ext Interrupts	USB	SPI	TWI (I^2C)	UART	CAN	LIN
ATmega649	64	4	2048	--	16	54	17	--	2	1	1	--	--
ATmega649A	64	4	2048	--	16	54	17	--	2	1	1	--	--
ATmega649P	64	4	2048	Yes	16	54	17	--	2	1	1	--	--
ATmega6490	64	4	2048	--	16	69	32	--	2	1	1	--	--
ATmega6490A	64	4	2048	--	16	69	32	--	2	1	1	--	--
ATmega6490P	64	4	2048	Yes	16	69	32	--	2	1	1	--	--
ATmega8U2	8	0.5	512	--	--	22	20	Full Speed Device	2	--	1	--	--
ATmega16U2	16	0.5	512	--	12	22	21	Full Speed Device	2	--	1	--	--
ATmega32U2	32	1	1024	--	12	22	20	Full Speed Device	2	--	1	--	--
ATmega16U4	16	2.1	512	--	14	26	13	Full Speed Device	2	1	1	--	--
ATmega32U4	32	3.3	1024	--	14	26	13	Full Speed Device	2	1	1	--	--
AT90USB82	8	0.5	512	--	--	22	21	Full Speed Device	2	--	1	--	--
AT90USB162	16	0.5	512	--	8	22	21	Full Speed Device	2	--	1	--	--
AT90USB646	64	4	2048	--	16	48	16	Full Speed Device	2	1	1	--	--
AT90USB1286	128	8	4096	--	16	48	16	Full Speed Device	2	1	1	--	--
AT90USB1287	128	8	4096	--	16	48	16	Full Speed Device + OTG	2	1	1	--	--
AT90USB647	64	4	2048	--	16	48	16	Full Speed Device + OTG	2	1	1	--	--
AT90CAN32	32	2	1024	--	16	53	8	--	1	1	2	1	--
AT90CAN64	64	4	2048	--	16	53	8	--	1	1	2	1	--
AT90CAN128	128	4	4096	--	16	53	8	--	1	1	2	1	--
ATmega16M1	16	1	512	--	12	27	27	--	1	--	1	1	1
ATmega32M1	32	2	1024	--	12	27	27	--	1	--	1	1	1
ATmega64M1	64	4	2048	--	12	27	27	--	1	--	1	1	1
AT90PWM1	8	0.5	512	--	8	19	4	--	1	--	--	--	--
AT90PWM216	16	1	512	--	12	19	4	--	1	--	1	--	--
AT90PWM316	16	1	512	--	--	27	4	--	1	--	1	--	--
AT90PWM3B	8	0.5	512	--	--	27	4	--	1	--	1	--	--
AT90PWM2B	8	0.5	512	--	8	19	4	--	1	--	1	--	--
AT90PWM81	8	0.25	512	--	--	20	3	--	1	--	--	--	--
AT90PWM161	16	0.25	512	--	--	20	3	--	1	--	--	--	--

(a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also halide free and fully green.
(b) Only 6 ADC in PDIP packages.
(c) One of these is a 10-bit timer/counter.
(d) Two of these are 12-bit timer/counters.
(e) Three of these are 12-bit timer/counters.

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Atmel Flash Microcontrollers

Product Portfolio

Segment LCD	ADC Channels	Analog Comparators	DAC Channels	8-bit Timers	16-bit Timers	PWM Channels	Operating Voltage (Vcc)	Max. Operating Frequency	Green Packages(a)	Temp. Range
100	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
100	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
100	8	1	--	2	1	4	1.8 -5.5	16	VQFN64, TQFP64	-40°C to +85°C
160	8	1	--	2	1	4	1.8 -5.5	16	TQFP 100	-40°C to +85°C
160	8	1	--	2	1	4	1.8 -5.5	20	TQFP 100	-40°C to +85°C
160	8	1	--	2	1	4	1.8 -5.5	20	TQFP 100	-40°C to +85°C
--	--	1	--	1	1	4	2.7 -5.5	16	TQFP32, VQFN32	-40°C to +85°C
--	--	1	--	1	1	4	2.7 -5.5	16	TQFP32, VQFN32	-40°C to +85°C
--	--	1	--	1	1	4	2.7 -5.5	16	TQFP32, VQFN32	-40°C to +85°C
--	12	1	--	2(c)	2	8	2.7 -5.5	16	TQFP44, VQFN44	-40°C to +85°C
--	12	1	--	2(c)	2	8	2.7 -5.5	16	TQFP44, VQFN44	-40°C to +85°C
--	--	1	--	1	1	4	2.7 -5.5	16	TQFP32, VQFN32	-40°C to +85°C
--	--	1	--	1	1	4	2.7 -5.5	16	TQFP32, VQFN32	-40°C to +85°C
--	8	1	--	2	2	9	2.7 -5.5	16	TQFP64, VQFN64	-40°C to +85°C
--	8	1	--	2	2	9	2.7 -5.5	16	TQFP64, VQFN64	-40°C to +85°C
--	8	1	--	2	2	9	2.7 -5.5	16	TQFP64, VQFN64	-40°C to +85°C
--	8	1	--	2	2	9	2.7 -5.5	16	TQFP64, VQFN64	-40°C to +85°C
--	8	1	--	2	2	7	2.7 -5.5	16	TQFP64, VQFN64	-40°C to +85°C
--	8	1	--	2	2	7	2.7 -5.5	16	TQFP64, VQFN64	-40°C to +85°C
--	8	1	--	2	2	7	2.7 -5.5	16	TQFP64, VQFN64	-40°C to +85°C
--	11	4	1	1	1	10	2.7 -5.5	16	VQFN32, TQFP32	-40°C to +85°C
--	11	4	1	1	1	10	2.7 -5.5	16	VQFN32, TQFP32	-40°C to +85°C
--	11	4	1	1	1	10	2.7 -5.5	16	VQFN32, TQFP32	-40°C to +85°C
--	8	2	--	3(d)	1	7	2.7 -5.5	16	SOIC24, QFN32	-40°C to 105°C
--	8	2	1	3(d)	1+PSC	7	2.7 -5.5	16	SOIC 24	-40°C to 105°C
--	11	3	1	4(e)	1+PSC	12	2.7 -5.5	16	VQFN32, SOIC32	-40°C to 105°C
--	11	3	1	4(e)	1+PSC	12	2.7 -5.5	16	VQFN32, SOIC32	-40°C to 105°C
--	8	2	1	3(d)	1+PSC	12	2.7 -5.5	16	SOIC 24	-40°C to 105°C
--	11	3	1	--	1+PSC	6	2.7 -5.5	16	SOIC20, QFN32	-40°C to 125°C
--	11	3	1	--	1+PSC	6	2.7 -5.5	16	SOIC20, QFN32	-40°C to 125°C

AVR XMEGA 8/16-bit Microcontrollers

Product	Flash (KB)	Boot Code (KB)	EEPROM (KB)	SRAM (KB)	picoPower	DMA Channels	Event System Channels	Crypto Engine	QTouch channels	USB	SPI	TWI (1^2C)	USART
ATxmega64A1U	64	4	2	4	Yes	4	8	AES/DES	56	FS device	4+8 USART master	4	8
ATxmega128A1U	128	8	2	8	Yes	4	8	AES/DES	56	FS device	4+8 USART master	4	8
ATxmega64A3U	64	4	2	4	Yes	4	8	AES/DES	56	FS device	3+7 USART master	2	7
ATxmega128A3U	128	8	2	8	Yes	4	8	AES/DES	56	FS device	3+7 USART master	2	7
ATxmega192A3U	192	8	2	16	Yes	4	8	AES/DES	56	FS device	3+7 USART master	2	7
ATxmega256A3U	256	8	4	16	Yes	4	8	AES/DES	56	FS device	3+7 USART master	2	7
ATxmega256A3BU	256	8	4	16	Yes	4	8	AES/DES	56	FS device	2+6 USART master	2	6
ATxmega16A4U	16	4	1	2	Yes	4	8	AES/DES	56	FS device	2+5 USART master	2	5
ATxmega32A4U	32	4	1	4	Yes	4	8	AES/DES	56	FS device	2+5 USART master	2	5
ATxmega64A4U	64	4	2	4	Yes	4	8	AES/DES	56	FS device	2+5 USART master	2	5
ATxmega128A4U	128	8	2	8	Yes	4	8	AES/DES	56	FS device	2+5 USART master	2	5
ATxmega64B1	64	4	2	4	Yes	2	4	AES/DES	16	FS device	1+2 USART master	1	2
ATxmega128B1	128	8	2	8	Yes	2	4	AES/DES	16	FS device	1+2 USART master	1	2
ATxmega64B3	64	4	2	4	Yes	2	4	AES/DES	16	FS device	1+1 USART master	1	1
ATxmega128B3	128	8	2	8	Yes	2	4	AES/DES	16	FS device	1+1 USART master	1	1
ATxmega64C3	64	8	2	4	Yes	--	4	--	56	FS device	2+3 USART master	2	3
ATxmega128C3	128	8	2	16	Yes	--	4	--	56	FS device	2+3 USART master	2	3
ATxmega192C3	192	8	2	16	Yes	--	4	--	56	FS device	2+3 USART master	2	3
ATxmega256C3	256	8	4	16	Yes	--	4	--	56	FS device	2+3 USART master	2	3
ATxmega384C3	384	8	4	32	Yes	2	4	AES	56	FS device	2+3 USART master	2	3
ATxmega16C4	16	4	1	2	Yes	--	4	--	16	FS device	2+3 USART master	2	3
ATxmega32C4	32	4	1	4	Yes	--	4	--	16	FS device	2+3 USART master	2	3
ATxmega64D3	64	4	2	4	Yes	--	4	--	56	--	2+3 USART master	2	3
ATxmega128D3	128	8	2	8	Yes	--	4	--	16	--	2+3 USART master	2	3
ATxmega192D3	192	8	2	16	Yes	--	4	--	16	--	2+3 USART master	2	3
ATxmega256D3	256	8	4	16	Yes	--	4	--	16	--	2+3 USART master	2	3
ATxmega384D3	384	8	4	32	Yes	2	4	--	56	--	2+3 USART master	2	3
ATxmega16D4	16	4	1	2	Yes	--	4	--	56	--	2+2 USART master	2	2
ATxmega32D4	32	4	1	4	Yes	--	4	--	56	--	2+2 USART master	2	2
ATxmega64D4	64	4	2	4	Yes	--	4	--	16	--	2+2 USART master	2	2
ATxmega128D4	128	8	2	8	Yes	--	4	--	16	--	2+2 USART master	2	2
ATxmega8E5	8	2	0.5	1	Yes	4	8	--	56	--	1+2 USART master	1	2
ATxmega16E5	16	4	1	2	Yes	4	8	--	56	--	1+2 USART master	1	2
ATxmega32E5	32	4	1	4	Yes	4	8	--	56	--	1+2 USART master	1	2

(a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also halide free and fully green.
(b) RTC also inlcudes a built in battery backup function.
(c) Has two aditional 8-bit timer/counters in the XMEGA custom logic module.
(d) DAC is 10-bit 300kSPS.

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Atmel Flash Microcontrollers

Product Portfolio

RTC	16-bit Timers	PWM Channels	12-bit ADC Channels	12-bit DAC Channels	Analog Comparators	LCD Controller	I/O Pins	F.max (MHz)	Vcc (V)	Green Packages(a)	Temp. Range
16-bit	8	32	16	4	4	--	78	32	1.6 - 3.6	TQFP100, VFBGA100	-40°C to +85°C
16-bit	8	32	16	4	4	--	78	32	1.6 - 3.6	TQFP100, VFBGA100	-40°C to +85°C
16-bit	7	32	16	2	4	--	50	32	1.6 -3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	7	32	16	2	4	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	7	32	16	2	4	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	7	32	16	2	4	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
32-bit(b)	7	29	16	2	4	--	47	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	20	12	2	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	5	20	12	2	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	5	20	12	2	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	5	20	12	2	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	3	16	16	--	4	160 Segment	53	32	1.6 - 3.6	TQFP100	-40°C to +85°C
16-bit	3	16	16	--	4	160 Segment	53	32	1.6 - 3.6	TQFP100	-40°C to +85°C
16-bit	2	8	8	--	2	100 Segment	36	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	2	8	8	--	2	100 Segment	36	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	4	20	12	--	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	4	20	12	--	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	5	32	16	--	2	--	50	32	1.6 - 3.6	TQFP64, VQFN64	-40°C to +85°C
16-bit	4	20	12	--	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	4	20	12	--	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	4	20	12	--	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	4	20	12	--	2	--	34	32	1.6 - 3.6	TQFP44, VFBGA49, VQFN44	-40°C to +85°C
16-bit	3 (c)	12	16	2 (d)	2	--	26	32	1.6 - 3.6	TQFP32, QFN32	-40°C to +85°C
16-bit	3 (c)	12	16	2 (d)	2	--	26	32	1.6 - 3.6	TQFP32, QFN32	-40°C to +85°C
16-bit	3 (c)	12	16	2 (d)	2	--	26	32	1.6 - 3.6	TQFP32, QFN32	-40°C to +85°C

Atmel | AVR

8051 8-bit Microcontrollers

Device Name	Flash (Kbytes)	Pin Count	Max. Operating Frequency	CPU	Max I/O Pins	USB Transceiver	USB Speed	USB Interface	SPI	TWI (I^2C)	UART	CAN	ADC channels	ADC Resolution (bits)	ADC Speed (ksps)
AT80C51RD2		44	60	8051-12C	32				1		1				
AT83C5134		32	48	8051-12C	34	1	Full Speed	Device	1	1	1				
AT83C5135		32	48	8051-12C	34	1	Full Speed	Device	1	1	1				
AT83C5136		64	48	8051-12C	34	1	Full Speed	Device	1	1	1				
AT83EB5114		20	40	8051-12C	12								6	10	50
AT89C2051	2	20	24	8051-12C	15						1				
AT89C4051	4	20	24	8051-12C	15						1				
AT89C5115	16	32	40	8051-12C	20						1		8	10	62.5
AT89C5130A-M	16	64	48	8051-12C	34	1	Full Speed	Device	1	1	1				
AT89C5131A-L	32	64	48	8051-12C	34	1	Full Speed	Device	1	1	1				
AT89C5131A-M	32	64	48	8051-12C	34	1	Full Speed	Device	1	1	1				
AT89C51AC2	32	44	40	8051-12C	34						1		8	10	62.5
AT89C51AC3	64	64	60	8051-12C	32				1		1		8	10	62.5
AT89C51CC01	32	44	40	8051-12C	34						1	1	8	10	62.5
AT89C51CC02	16	32	40	8051-12C	20						1	1	8	10	62.5
AT89C51CC03	64	64	40	8051-12C	37				1		1	1	8	10	62.5
AT89C51ED2	64	44	60	8051-12C	32				1		1				
AT89C51IC2	32	44	60	8051-12C	34				1	1	1				
AT89C51ID2	64	44	60	8051-12C	32				1	1	1				
AT89C51RB2	16	44	60	8051-12C	32				1		1				
AT89C51RC	32	44	24	8051-12C	32						1				
AT89C51RC2	32	44	60	8051-12C	32				1		1				
AT89C51RD2	64	44	60	8051-12C	32				1		1				
AT89C55WD	20	44	24	8051-12C	32						1				
AT89EB5114	4	20	40	8051-12C	12								6	10	50
AT89LP2052	2	20	20	8051-1C	15				1		1				
AT89LP213	2	14	20	8051-1C	14				1						
AT89LP214	2	14	20	8051-1C	12				1		1				
AT89LP216	2	16	20	8051-1C	14				1		1				
AT89LP3240	32	44	20	8051-1C	38				1	1	1		8	10	153.8
AT89LP4052	4	20	20	8051-1C	15				1		1				
AT89LP428	4	32	25	8051-1C	30				1		1				
AT89LP51	4	44	20	8051-1C	36						1				
AT89LP51ED2	64	44	20	8051-1C	42				1	1	1		7	10	153.8
AT89LP51IC2	32	44	20	8051-1C	42				1	1	1		7	10	153.8
AT89LP51ID2	64	44	20	8051-1C	42				1	1	1		7	10	153.8
AT89LP51RB2	24	44	20	8051-1C	42				1	1	1		7	10	153.8
AT89LP51RC2	32	44	20	8051-1C	42				1	1	1		7	10	153.8
AT89LP51RD2	64	44	20	8051-1C	42				1	1	1		7	10	153.8
AT89LP52	8	44	20	8051-1C	36						1				
AT89LP6440	64	44	20	8051-1C	38				1	1	1		8	10	153.8
AT89LP828	8	32	25	8051-1C	30				1		1				
AT89LS51	4	44	16	8051-12C	32						1				
AT89LS52	8	44	16	8051-12C	32						1				
AT89S2051	2	20	24	8051-12C	15						1				
AT89S4051	4	20	24	8051-12C	15						1				
AT89S51	4	44	24	8051-12C	32						1				
AT89S52	8	44	24	8051-12C	32						1				
AT89S8253	12	44	24	8051-12C	32				1		1				

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SRAM (Kbytes)	EEPROM (Bytes)	Self Program Memory	Operating Voltage (Vcc)	Timers	ISP	Mask ROM (Kbytes)	Watchdog	Packages
1.25			2.7 to 5.5	4			Yes	LQFP RL 44, PDIP 3C 40, PLCC SL 44
1.25	512		2.7 to 3.6	4		8	Yes	QFN32
1.25	512		2.7 to 3.6	4		16	Yes	QFN32
1.25	512		2.7 to 3.6	4		32	Yes	QFN32, QFN48, SO28, LQFP64
0.25	256		3.0 to 3.6	4		4	Yes	SOIC TG 20
0.125			2.7 to 6.0	2				PDIP 20P3 20, SOIC 20S2 20
0.125			2.7 to 6.0	2				PDIP 20P3 20, SOIC 20S2 20
0.5	2048	API	3.0 to 5.5	4	UART		Yes	LQFP RA 32, PLCC SI 28, SOIC TI 28
1.25	1024	API	2.7 to 5.5	4	UART/USB		Yes	LQFP RD 64, PLCC S3 52, VQFN (Punched) PU 32
1.25	1024	API	3.0 to 3.6	4	UART/USB		Yes	LQFP RD 64, PLCC S3 52, SOIC TI 28
1.25	1024	API	2.7 to 5.5	4	UART/USB		Yes	LQFP RD 64, PLCC S3 52, VQFN (Punched) PU 32
1.25	2048	API	3.0 to 5.5	4	UART		Yes	LQFP RL 44, PLCC SL 44
2.25	2048	API	3.0 to 5.5	4	UART		Yes	LQFP RD 64, LQFP RL 44, PLCC S3 52, PLCC SL 44
1.25	2048	API	3.0 to 5.5	4	UART/CAN		Yes	LQFP RL 44, PLCC SL 44
0.5	2048	API	3.0 to 5.5	4	UART/CAN		Yes	LQFP RA 32, PLCC SI 28, SOIC TI 28
2.25	2048	API	3.0 to 5.5	4	UART/CAN		Yes	LQFP RD 64, LQFP RL 44, PLCC S3 52, PLCC SL 44
2	2048	API	2.7 to 5.5	4	UART		Yes	LQFP RD 64, LQFP RL 44, PLCC SL 44, PLCC SM 68
1.25		API	2.7 to 5.5	4	UART		Yes	LQFP RL 44, PLCC SL 44
2	2048	API	2.7 to 5.5	4	UART		Yes	LQFP RL 44, PLCC SL 44
1.25		API	2.7 to 5.5	4	UART		Yes	LQFP RL 44, PDIP 3C 40, PLCC SL 44
0.5			4.0 to 6.0	3			Yes	PDIP 40P6 40, PLCC 44J 44, TQFP 44A 44
1.25		API	2.7 to 5.5	4	UART		Yes	LQFP RL 44, PDIP 3C 40, PLCC SL 44
2		API	2.7 to 5.5	4	UART		Yes	LQFP RL 44, PLCC SL 44
0.25			4.0 to 6.0	3			Yes	PDIP 40P6 40, PLCC 44J 44, TQFP 44A 44
0.25	256		3.0 to 3.6	4			Yes	SOIC TG 20
0.25			2.4 to 5.5	2	SPI		Yes	PDIP 20P3 20, SOIC 20S2 20, TSSOP 20X 20
0.125			2.4 to 5.5	2	SPI/OCD		Yes	PDIP 14P3 14, TSSOP 14X 14
0.125			2.4 to 5.0	2	SPI/OCD		Yes	PDIP 14P3 14, TSSOP 14X 14
0.125			2.4 to 5.5	2	SPI/OCD		Yes	PDIP 16P3 16, TSSOP 16X 16
4.25	8192	IAP	2.4 to 3.6	3	SPI/OCD		Yes	MLF (VQFN) 44M1 44, PDIP 40P6 40, PLCC 44J 44, TQFP 44A 44
0.25			2.4 to 5.5	2	SPI		Yes	PDIP 20P3 20, SOIC 20S2 20, TSSOP 20X 20
0.75	512	IAP	2.4 to 5.5	3	SPI/OCD		Yes	MLF (VQFN) 32M1-A 32, PDIP 28P3 28, PLCC 32J 32, TQFP 32A 32
0.25	256	IAP	2.4 to 5.5	3	SPI		Yes	MLF (VQFN) 44M1 44, PDIP 40P6 40, PLCC 44J 44, TQFP 44A 44
2.25	4096	API	2.4 to 5.5	4	SPI/OCD/UART		Yes	LQFP RL 44,MLF (VQFN) 44M1 44, PDIP 3C 40, PLCC SL 44, TQFP 44A 44
1.375		API	2.4 to 5.5	4	SPI/OCD/UART		Yes	LQFP RL 44, MLF (VQFN) 44M1 44,P LCC SL 44,T QFP 44A 44
2.25	4096	API	2.4 to 5.5	4	SPI/OCD/UART		Yes	LQFP RL 44, MLF (VQFN) 44M1 44, PLCC SL 44, TQFP 44A 44
	0	API	2.4 to 5.5	4	SPI/OCD/UART		Yes	LQFP RL 44, MLF (VQFN) 44M1 44, PDIP 3C 40, PLCC SL 44, TQFP 44A 44
1.375	0	API	2.4 to 5.5	4	SPI/OCD/UART		Yes	LQFP RL 44, MLF (VQFN) 44M1 44, PDIP 3C 40, PLCC SL 44, TQFP 44A 44
2.25	0	API	2.4 to 5.5	4	SPI/OCD/UART		Yes	LQFP RL 44, MLF (VQFN) 44M1 44, PDIP 3C 40, PLCC SL 44, TQFP 44A 44
0.25	256	IAP	2.4 to 5.5	3	SPI		Yes	MLF (VQFN) 44M1 44, PDIP 40P6 40, PLCC 44J 44, TQFP 44A 44
4.25	8192	IAP	2.4 to 3.6	3	SPI/OCD		Yes	MLF (VQFN) 44M1 44, PDIP 40P6 40, PLCC 44J 44, TQFP 44A 44
0.75	1024	IAP	2.4 to 5.5	3	SPI/OCD		Yes	MLF (VQFN) 32M1-A 32, PDIP 28P3 28, PLCC 32J 32, TQFP 32A 32
0.125			2.7 to 4.0	2	SPI		Yes	PDIP 40P6 40,PLCC 44J 44,TQFP 44A 44
0.25			2.7 to 4.0	3	SPI		Yes	PDIP 40P6 40,PLCC 44J 44,TQFP 44A 44
0.25			2.7 to 5.5	2	SPI			PDIP 20P3 20,SOIC 20S2 20
0.25			2.7 to 5.5	2	SPI			PDIP 20P3 20,SOIC 20S2 20
0.125			4.0 to 5.5	2	SPI		Yes	PDIP 40P6 40,PLCC 44J 44,TQFP 44A 44
0.25			4.0 to 5.5	3	SPI		Yes	PDIP 40P6 40,PLCC 44J 44,TQFP 44A 44
0.25	2048		2.7 to 5.5	3	SPI		Yes	PDIP 40P6 40,PLCC 44J 44,TQFP 44A 44

Atmel | SMART SAM D ARM Cortex-M0+ Based Microcontrollers

Device Name	Flash (Kbytes)	SRAM (Kbytes)	CPU	SPI	TWI (I2C)	UART	Full Speed USB	event system channels	DMA	32-bit RTC	16-bit T/C	16-bit T/CC
ATSAMD20J18	256	32	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20J17	128	16	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20J16	64	8	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20J15	32	4	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20J14	16	2	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20G18	256	32	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20G17	128	16	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20G16	64	8	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20G15	32	4	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20G14	16	2	Cortex-M0+	up to 6	up to 6	up to 6		8		Yes	8	
ATSAMD20E18	256	32	Cortex-M0+	up to 4	up to 4	up to 4		8		Yes	6	
ATSAMD20E17	128	16	Cortex-M0+	up to 4	up to 4	up to 4		8		Yes	6	
ATSAMD20E16	64	8	Cortex-M0+	up to 4	up to 4	up to 4		8		Yes	6	
ATSAMD20E15	32	4	Cortex-M0+	up to 4	up to 4	up to 4		8		Yes	6	
ATSAMD20E14	16	2	Cortex-M0+	up to 4	up to 4	up to 4		8		Yes	6	
ATSAMD21J18	256	32	Cortex-M0+	up to 6	up to 6	up to 6	H&D	12	12 ch	Yes	5	3
ATSAMD21J17	128	16	Cortex-M0+	up to 6	up to 6	up to 6	H&D	12	12 ch	Yes	5	3
ATSAMD21J16	64	8	Cortex-M0+	up to 6	up to 6	up to 6	H&D	12	12 ch	Yes	5	3
ATSAMD21J15	32	4	Cortex-M0+	up to 6	up to 6	up to 6	H&D	12	12 ch	Yes	5	3
ATSAMD21G18	256	32	Cortex-M0+	up to 6	up to 6	up to 6	H&D	12	12 ch	Yes	3	3
ATSAMD21G17	128	16	Cortex-M0+	up to 6	up to 6	up to 6	H&D	12	12 ch	Yes	3	3
ATSAMD21G16	64	8	Cortex-M0+	up to 6	up to 6	up to 6	H&D	12	12 ch	Yes	3	3
ATSAMD21G15	32	4	Cortex-M0+	up to 6	up to 6	up to 6	H&D	12	12 ch	Yes	3	3
ATSAMD21E18	256	32	Cortex-M0+	up to 4	up to 4	up to 4	H&D	12	12 ch	Yes	3	3
ATSAMD21E17	128	16	Cortex-M0+	up to 4	up to 4	up to 4	H&D	12	12 ch	Yes	3	3
ATSAMD21E16	64	8	Cortex-M0+	up to 4	up to 4	up to 4	H&D	12	12 ch	Yes	3	3
ATSAMD21E15	32	4	Cortex-M0+	up to 4	up to 4	up to 4	H&D	12	12 ch	Yes	3	3
ATSAMD10D14	16	4	Cortex-M0+	up to 3	up to 3	up to 3		6	6 ch	Yes	2	1
ATSAMD10D13	8	4	Cortex-M0+	up to 3	up to 3	up to 3		6	6 ch	Yes	2	1
ATSAMD10C14	16	4	Cortex-M0+	up to 2	up to 2	up to 2		6	6 ch	Yes	2	1
ATSAMD10C13	8	4	Cortex-M0+	up to 2	up to 2	up to 2		6	6 ch	Yes	2	1
ATSAMD11D14	16	4	Cortex-M0+	up to 3	up to 3	up to 3	D	6	6 ch	Yes	2	1
ATSAMD11C14	16	4	Cortex-M0+	up to 2	up to 2	up to 2	D	6	6 ch	Yes	2	1

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PWM Channels	12-bit 350 ksps ADC channels	10-bit DAC channels	Analog Comparators	# of Touch Channels	Max I/O Pins	F.max (MHz)	Vcc (V)	Green Packages	Temp. Range
16	20	1ch 350 ksps	2	256	52	48	1.62 to 3.63	TQFP64, QFN64	-40°C to +105°C
16	20	1ch 350 ksps	2	256	52	48	1.62 to 3.63	TQFP64, QFN64	-40°C to +105°C
16	20	1ch 350 ksps	2	256	52	48	1.62 to 3.63	TQFP64, QFN64	-40°C to +105°C
16	20	1ch 350 ksps	2	256	52	48	1.62 to 3.63	TQFP64, QFN64	-40°C to +105°C
16	20	1ch 350 ksps	2	256	52	48	1.62 to 3.63	TQFP64, QFN64	-40°C to +105°C
16	14	1ch 350 ksps	2	120	38	48	1.62 to 3.63	TQFP48, QFN48	-40°C to +105°C
16	14	1ch 350 ksps	2	120	38	48	1.62 to 3.63	TQFP48, QFN48	-40°C to +105°C
16	14	1ch 350 ksps	2	120	38	48	1.62 to 3.63	TQFP48, QFN48	-40°C to +105°C
16	14	1ch 350 ksps	2	120	38	48	1.62 to 3.63	TQFP48, QFN48	-40°C to +105°C
16	14	1ch 350 ksps	2	120	38	48	1.62 to 3.63	TQFP48, QFN48	-40°C to +105°C
10	10	1ch 350 ksps	2	60	26	48	1.62 to 3.63	TQFP32, QFN32	-40°C to +105°C
10	10	1ch 350 ksps	2	60	26	48	1.62 to 3.63	TQFP32, QFN32	-40°C to +105°C
10	10	1ch 350 ksps	2	60	26	48	1.62 to 3.63	TQFP32, QFN32	-40°C to +105°C
10	10	1ch 350 ksps	2	60	26	48	1.62 to 3.63	TQFP32, QFN32	-40°C to +105°C
10	10	1ch 350 ksps	2	60	26	48	1.62 to 3.63	TQFP32, QFN32	-40°C to +105°C
24	20	1ch 350 ksps	2	256	52	48	1.62 to 3.63	TQFP64, QFN64	-40°C to +125°C
24	20	1ch 350 ksps	2	256	52	48	1.62 to 3.63	TQFP64, QFN64	-40°C to +125°C
24	20	1ch 350 ksps	2	256	52	48	1.62 to 3.63	TQFP64, QFN64	-40°C to +125°C
24	20	1ch 350 ksps	2	256	52	48	1.62 to 3.63	TQFP64, QFN64	-40°C to +125°C
20	14	1ch 350 ksps	2	120	38	48	1.62 to 3.63	TQFP48, QFN48	-40°C to +125°C
20	14	1ch 350 ksps	2	120	38	48	1.62 to 3.63	TQFP48, QFN48	-40°C to +125°C
20	14	1ch 350 ksps	2	120	38	48	1.62 to 3.63	TQFP48, QFN48	-40°C to +125°C
20	14	1ch 350 ksps	2	120	38	48	1.62 to 3.63	TQFP48, QFN48	-40°C to +125°C
18	10	1ch 350 ksps	2	60	26	48	1.62 to 3.63	TQFP32, QFN32	-40°C to +125°C
18	10	1ch 350 ksps	2	60	26	48	1.62 to 3.63	TQFP32, QFN32	-40°C to +125°C
18	10	1ch 350 ksps	2	60	26	48	1.62 to 3.63	TQFP32, QFN32	-40°C to +125°C
18	10	1ch 350 ksps	2	60	26	48	1.62 to 3.63	TQFP32, QFN32	-40°C to +125°C
12	10/8	1ch 350 ksps	2	72/42	22/18	48	1.62 to 3.63	QFN24/SOIC20	-40°C to +85°C
12	10/8	1ch 350 ksps	2	72/42	22/18	48	1.62 to 3.63	QFN24/SOIC20	-40°C to +85°C
12	8	1ch 350 ksps	2	12	12	48	1.62 to 3.63	SOIC14	-40°C to +85°C
12	8	1ch 350 ksps	2	12	12	48	1.62 to 3.63	SOIC14	-40°C to +85°C
12	10/8	1ch 350 ksps	2	72/42	22/18	48	1.62 to 3.63	QFN24/SOIC20	-40°C to +85°C
12	8	1ch 350 ksps	2	12	12	48	1.62 to 3.63	SOIC14	-40°C to +85°C

Atmel | SMART SAM S70 ARM Cortex-M7 Based Microcontrollers

Product	CPU	Flash (Kbytes)	SRAM (Kbytes)	Max. Operating Freq. (MHz)	FPU	MPU / MMU	Pin Count	USB Transceiver	USB Speed	USB Interface	SPI	QSPI	TWI (I2C)	UART	CAN	CAN-FD	LIN	Timers	PWM Channels	I2S
ATSAMS70J19	Cortex-M7	512	256	300	Yes	Yes / No	64	1	Full Speed	Host, Device	1	0	2	5	0	No	2	14	8	Yes
ATSAMS70J20	Cortex-M7	1024	384	300	Yes	Yes / No	64	1	Full Speed	Host, Device	1	0	2	5	0	No	2	14	8	Yes
ATSAMS70J21	Cortex-M7	2048	384	300	Yes	Yes / No	64	1	Full Speed	Host, Device	1	0	2	5	0	No	2	14	8	Yes
ATSAMS70N19	Cortex-M7	512	256	300	Yes	Yes / No	100	1	Hi-Speed	Host, Device	4	1	3	8	0	No	3	14	8	Yes
ATSAMS70N20	Cortex-M7	1024	384	300	Yes	Yes / No	100	1	Hi-Speed	Host, Device	4	1	3	8	0	No	3	14	8	Yes
ATSAMS70N21	Cortex-M7	2048	384	300	Yes	Yes / No	100	1	Hi-Speed	Host, Device	4	1	3	8	0	No	3	14	8	Yes
ATSAMS70Q19	Cortex-M7	512	256	300	Yes	Yes / No	144	1	Hi-Speed	Host, Device	5	1	3	8	0	No	3	14	8	Yes
ATSAMS70Q20	Cortex-M7	1024	384	300	Yes	Yes / No	144	1	Hi-Speed	Host, Device	5	1	3	8	0	No	3	14	8	Yes
ATSAMS70Q21	Cortex-M7	2048	384	300	Yes	Yes / No	144	1	Hi-Speed	Host, Device	5	1	3	8	0	No	3	14	8	Yes

Atmel | SMART SAM3S ARM Cortex-M3 Based Microcontrollers

Product	CPU	Flash (Kbytes)	SRAM (Kbytes)	USB Transceiver	USB Speed	USB Interface	Q Touch Channels	Quadrature Decoder Channels	SPI	TWI (I^2C)	UART	SSC	SD / eMMC	Timers	Output Compare channels	Input Capture Channels	PWM Channels	Ext Interrupts	ADC channels	ADC Resolution (bits)
ATSAM3S1A	Cortex-M3	64	16	1	Full Speed	Device	17	1	2	2	3	1	--	3	3	3	4	34	8	12
ATSAM3S1B	Cortex-M3	64	16	1	Full Speed	Device	23	1	3	2	4	1	1	3	3	3	4	47	10	12
ATSAM3S1C	Cortex-M3	64	16	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM3S2A	Cortex-M3	128	32	1	Full Speed	Device	17	1	2	2	3	1	--	3	3	3	4	34	8	12
ATSAM3S2B	Cortex-M3	128	32	1	Full Speed	Device	23	1	3	2	4	1	1	3	3	3	4	47	10	12
ATSAM3S2C	Cortex-M3	128	32	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM3S4A	Cortex-M3	256	48	1	Full Speed	Device	17	1	3	2	3	1	--	3	3	3	4	34	8	12
ATSAM3S4B	Cortex-M3	256	48	1	Full Speed	Device	23	1	3	2	4	1	1	3	3	3	4	47	10	12
ATSAM3S4C	Cortex-M3	256	48	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM3S8B	Cortex-M3	512	64	1	Full Speed	Device	23	1	3	2	4	1	1	3	3	3	4	47	10	12
ATSAM3S8C	Cortex-M3	512	64	1	Full Speed	Device	32	1	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM3SD8B	Cortex-M3	512	64	1	Full Speed	Device	23	1	3	2	4	1	1	3	3	3	4	47	10	12
ATSAM3SD8C	Cortex-M3	512	64	1	Full Speed	Device	32	1	4	2	5	1	1	6	6	6	4	79	16	12

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SSC	Ethernet	Ethernet AVB	SD / eMMC	Camera Interface	32kHz RTC	ADC Channels	ADC Resolution (bits)	ADC Speed (ksps)	Analog Comparators	DAC Channels	DAC Resolution (bits)	Crypto Engine	External Bus Interface	DRAM Memory	Temp. Range (deg C)	I/O Supply Class	Operating Voltage (Vcc)	Max I/O Pins	Packages
1	1	No	0	Yes	Yes	5	12	2000	1	1	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	44	LQFP64, QFN64
1	0	No	0	Yes	Yes	5	12	2000	1	1	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	44	LQFP64, QFN64
1	0	No	0	Yes	Yes	5	12	2000	1	1	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	44	LQFP64, QFN64
1	0	No	1	Yes	Yes	10	12	2000	1	2	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	75	LQFP100, TFBGA100, VFBGA100
1	0	No	1	Yes	Yes	10	12	2000	1	2	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	75	LQFP100, TFBGA100, VFBGA100
1	0	No	1	Yes	Yes	10	12	2000	1	2	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	75	LQFP100, TFBGA100, VFBGA100
1	0	No	1	Yes	Yes	24	12	2000	1	2	12	AES/SHA/TRNG	1	Yes	-40 to 105	1.8/3.3	1.7 to 3.6	114	LQFP144, LFBGA144
1	0	No	1	Yes	Yes	24	12	2000	1	2	12	AES/SHA/TRNG	1	Yes	-40 to 105	1.8/3.3	1.7 to 3.6	114	LQFP144, LFBGA144
1	0	No	1	Yes	Yes	24	12	2000	1	2	12	AES/SHA/TRNG	1	Yes	-40 to 105	1.8/3.3	1.7 to 3.6	114	LQFP144, LFBGA144

ADC Speed (ksps)	Analog Comparators	DAC Channels	DAC Resolution (bits)	Temp. Sensor	External Bus Interface	NAND Interface	32kHz RTC	Calibrated RC Oscillator	Clock Speed (MHz)	Max I/O Pins	Pin Count	I/O Supply Class	Vcc Range (V)	Green Packages	Temp. Range (°C)
1000	1	--	--	Yes	--	Yes	Yes	Yes	64	34	48	1.8/3.3	1.62 to 3.6	LQFP 48	-40 to 85
1000	1	2	12	Yes	--	Yes	Yes	Yes	64	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to 85
1000	1	2	12	Yes	1	Yes	Yes	Yes	64	79	100	1.8/3.3	1.62 to 3.6	LQFP 100,TFBGA 100	-40 to 85
1000	1	--	--	Yes	--	Yes	Yes	Yes	64	34	48	1.8/3.3	1.62 to 3.6	LQFP 48	-40 to 85
1000	1	2	12	Yes	--	Yes	Yes	Yes	64	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to 85
1000	1	2	12	Yes	1	Yes	Yes	Yes	64	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to 85
1000	1	--	--	Yes	--	Yes	Yes	Yes	64	34	48	1.8/3.3	1.62 to 3.6	LQFP 48, QFN 48	-40 to 85
1000	1	2	12	Yes	--	Yes	Yes	Yes	64	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to 85
1000	1	2	12	Yes	1	Yes	Yes	Yes	64	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to 85
1000	1	2	12	Yes	--	Yes	Yes	Yes	64	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to +85
1000	1	2	12	Yes	1	Yes	Yes	Yes	64	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to +85
1000	1	2	12	Yes	--	Yes	Yes	Yes	64	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to +85
1000	1	2	12	Yes	1	Yes	Yes	Yes	64	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to +85

Atmel | SMART SAM4S ARM Cortex-M4 Based Microcontrollers

Product	CPU	Flash (Kbytes)	SRAM (Kbytes)	USB Transceiver	USB Speed	USB Interface	QTouch Channels	Quadrature Decoder Channels	SPI	TWI (I^2C)	UART	SSC	SD / eMMC	Timers	Output Compare channels	Input Capture Channels	PWM Channels	Ext Interrupts	ADC channels	ADC Resolution (bits)
ATSAM4S2A	Cortex-M4	128	64	1	Full Speed	Device	17	2	2	2	3	1	0	3	3	3	4	34	8	12
ATSAM4S4A	Cortex-M4	256	64	1	Full Speed	Device	17	2	2	2	3	1	0	3	3	3	4	34	8	12
ATSAM4S2B	Cortex-M4	128	64	1	Full Speed	Device	27	2	3	2	4	1	1	3	3	3	4	47	11	12
ATSAM4S4B	Cortex-M4	256	64	1	Full Speed	Device	27	2	3	2	4	1	1	3	3	3	4	47	11	12
ATSAM4S8B	Cortex-M4	512	128	1	Full Speed	Device	27	2	3	2	4	1	1	3	3	3	4	47	11	12
ATSAM4S2C	Cortex-M4	128	64	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM4S4C	Cortex-M4	256	64	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM4S8C	Cortex-M4	512	128	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM4S16B	Cortex-M4	1024	128	1	Full Speed	Device	27	2	3	2	4	1	1	3	3	3	4	47	11	12
ATSAM4S16C	Cortex-M4	1024	128	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM4SA16B	Cortex-M4	1024	160	1	Full Speed	Device	27	2	3	2	4	1	1	3	3	3	4	47	11	12
ATSAM4SA16C	Cortex-M4	1024	160	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM4SD16B	Cortex-M4	1024	160	1	Full Speed	Device	27	2	3	2	4	1	1	3	3	3	4	47	11	12
ATSAM4SD16C	Cortex-M4	1024	160	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12
ATSAM4SD32B	Cortex-M4	2048	160	1	Full Speed	Device	27	2	3	2	4	1	1	3	3	3	4	47	11	12
ATSAM4SD32C	Cortex-M4	2048	160	1	Full Speed	Device	32	2	3	2	4	1	1	6	6	6	4	79	16	12

The QFP package has a -40°C to 105°C option. Also available upon request for any other package type.

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ADC Speed (ksps)	Analog Comparators	DAC Channels	DAC Resolution (bits)	Temp. Sensor	External Bus Interface	NAND Interface	32kHz RTC	Calibrated RC Oscillator	Clock Speed (MHz)	Max I/O Pins	Pin Count	I/O Supply Class	Operating Voltage (Vcc)	Green Packages	Temp. Range (deg C)
1000	1	0	12	Yes	--	Yes	Yes	Yes	120	34	48	1.8/3.3	1.62 to 3.6	LQFP 48, QFN 48	-40 to +105
1000	1	0	12	Yes	--	Yes	Yes	Yes	120	34	48	1.8/3.3	1.62 to 3.6	LQFP 48, QFN 48	-40 to +105
1000	1	2	12	Yes	--	Yes	Yes	Yes	120	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64, WLCSP 64	-40 to +105
1000	1	2	12	Yes	--	Yes	Yes	Yes	120	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64, WLCSP 64	-40 to +105
1000	1	2	12	Yes	--	Yes	Yes	Yes	120	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64, WLCSP 64	-40 to +105
1000	1	2	12	Yes	1	Yes	Yes	Yes	120	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, VFBGA 100, TFBGA 100, WLCSP 64	-40 to +105
1000	1	2	12	Yes	1	Yes	Yes	Yes	120	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, VFBGA 100, TFBGA 100, WLCSP 64	-40 to +105
1000	1	2	12	Yes	1	Yes	Yes	Yes	120	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, VFBGA 100, TFBGA 100	-40 to +105
1000	1	2	12	Yes	--	Yes	Yes	Yes	120	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64, WLCSP 64	-40 to +105
1000	1	2	12	Yes	1	Yes	Yes	Yes	120	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, VFBGA 100, TFBGA 100	-40 to +105
1000	1	2	12	Yes	--	Yes	Yes	Yes	120	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to +105
1000	1	2	12	Yes	1	Yes	Yes	Yes	120	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, VFBGA 100, TFBGA 100	-40 to +105
1000	1	2	12	Yes	--	Yes	Yes	Yes	120	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to +105
1000	1	2	12	Yes	1	Yes	Yes	Yes	120	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, VFBGA 100, TFBGA 100	-40 to +105
1000	1	2	12	Yes	--	Yes	Yes	Yes	120	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to +105
1000	1	2	12	Yes	1	Yes	Yes	Yes	120	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, VFBGA 100, TFBGA 100	-40 to +105

Atmel | SMART SAM3N ARM Cortex-M3 Based Microcontrollers

Product	CPU	Flash (Kbytes)	SRAM (Kbytes)	QTouch Channels	Quadrature Decoder Channels	SPI	TWI (I^2C)	UART	SSC	Timers	Output Compare channels	Input Capture Channels	PWM Channels	Ext Interrupts
ATSAM3N00A	Cortex-M3	16	4	17	--	2	2	3	1	6	2	2	4	34
ATSAM3N00B	Cortex-M3	16	4	23	1	3	2	4	1	6	3	3	4	47
ATSAM3N0A	Cortex-M3	32	8	17	--	2	2	3	1	6	2	2	4	34
ATSAM3N0B	Cortex-M3	32	8	23	1	3	2	4	1	6	3	3	4	47
ATSAM3N0C	Cortex-M3	32	8	32	2	3	2	4	1	6	6	6	4	79
ATSAM3N1A	Cortex-M3	64	8	17	--	2	2	3	1	6	2	2	4	34
ATSAM3N1B	Cortex-M3	64	8	23	1	3	2	4	1	6	3	3	4	47
ATSAM3N1C	Cortex-M3	64	8	32	2	3	2	4	1	6	6	6	4	79
ATSAM3N2A	Cortex-M3	128	16	17	--	2	2	3	1	6	2	2	4	34
ATSAM3N2B	Cortex-M3	128	16	23	1	3	2	4	1	6	3	3	4	47
ATSAM3N2C	Cortex-M3	128	16	32	2	3	2	4	1	6	6	6	4	79
ATSAM3N4A	Cortex-M3	256	24	17	--	2	2	3	1	6	2	2	4	34
ATSAM3N4B	Cortex-M3	256	24	23	1	3	2	4	1	6	3	3	4	47
ATSAM3N4C	Cortex-M3	256	24	32	2	3	2	4	1	6	6	6	4	79

Atmel | SMART SAM4N ARM Cortex-M4 Based Microcontrollers

Device Name	Flash (Kbytes)	Pin Count	Max. Operating Frequency	CPU	# of Touch Channels	Max I/O Pins	Ext Interrupts	SPI	TWI (I2C)	UART	ADC channels	ADC Resolution (bits) + HW Averaging	ADC Speed (ksps)	DAC Channels	DAC Resolution (bits)	Temp. Sensor	SRAM (Kbytes)
ATSAM4N16B	1024	64	100	Cortex-M4	23	47	47	3	3	6	10	10 + 2	510	1	10	Yes	80
ATSAM4N16C	1024	100	100	Cortex-M4	32	79	79	4	3	7	16	10 + 2	510	1	10	Yes	80
ATSAM4N8A	512	48	100	Cortex-M4	17	34	34	2	3	5	8	10 + 2	510	0	--	Yes	64
ATSAM4N8B	512	64	100	Cortex-M4	23	47	47	3	3	6	10	10 + 2	510	1	10	Yes	64
ATSAM4N8C	512	100	100	Cortex-M4	32	79	79	4	3	7	16	10 + 2	510	1	10	Yes	64

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ADC channels	ADC Resolution (bits)	ADC Speed (ksps)	DAC Channels	DAC Resolution (bits)	32kHz RTC	Calibrated RC Oscillator	Clock Speed (MHz)	Max I/O Pins	Pin Count	I/O Supply Class	Vcc Range (V)	Green Packages	Temp. Range (°C)
8	10	384	--	--	Yes	Yes	48	34	48	1.8/3.3	1.62 to 3.6	QFN 48	-40 to +85
10	10	384	1	10	Yes	Yes	48	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to +85
8	10	384	--	--	Yes	Yes	48	34	48	1.8/3.3	1.62 to 3.6	QFN E 48	-40 to +85
10	10	384	1	10	Yes	Yes	48	47	64	1.8/3.3	1.62 to 3.6	LQFP R-64, QFN 64	-40 to +85
16	10	384	1	10	Yes	Yes	48	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to +85
8	10	384	--	--	Yes	Yes	48	34	48	1.8/3.3	1.62 to 3.6	QFN 48	-40 to +85
10	10	384	1	10	Yes	Yes	48	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to 85
16	10	384	1	10	Yes	Yes	48	79	100	1.8/3.3	1.62 to 3.6	LQFP 100,TFBGA 100	-40 to 85
8	10	384	--	--	Yes	Yes	48	34	48	1.8/3.3	1.62 to 3.6	QFN 48	-40 to 85
10	10	384	1	10	Yes	Yes	48	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to 85
16	10	384	1	10	Yes	Yes	48	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to 85
8	10	384	--	--	Yes	Yes	48	34	48	1.8/3.3	1.62 to 3.6	QFN 48	-40 to 85
10	10	384	1	10	Yes	Yes	48	47	64	1.8/3.3	1.62 to 3.6	LQFP 64, QFN 64	-40 to 85
16	10	384	1	10	Yes	Yes	48	79	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to 85

Self Program Memory	Temp. Range (deg C)	Device Name	I/O Supply Class	Operating Voltage (Vcc)	MPU / MMU	Timers	PWM Channels	32kHz RTC	Calibrated RC Oscillator	Packages
Yes	-40 to 85	ATSAM4N16B	1.8/3.3	1.62 to 3.6	Yes / No	6	4	Yes	Yes	LQFP64_L,QFN64_V
Yes	-40 to 85	ATSAM4N16C	1.8/3.3	1.62 to 3.6	Yes / No	6	4	Yes	Yes	LQFP100_P,TFBGA100_AH,VFBGA100_D
Yes	-40 to 85	ATSAM4N8A	1.8/3.3	1.62 to 3.6	Yes / No	6	4	Yes	Yes	LQFP48_L,QFN48_V
Yes	-40 to 85	ATSAM4N8B	1.8/3.3	1.62 to 3.6	Yes / No	6	4	Yes	Yes	LQFP64_L,QFN64_V
Yes	-40 to 85	ATSAM4N8C	1.8/3.3	1.62 to 3.6	Yes / No	6	4	Yes	Yes	LQFP100_P,TFBGA100_AH,VFBGA100_D

Atmel | SMART SAM L ARM Cortex-M0+ Based Microcontrollers

Device Name	Flash (Kbytes)	Pin Count	Max. Operating Freq. (MHz)	CPU	# of Touch Channels	Hardware QTouch Acquisition	Event System Channels	DMA	Max I/O Pins	Ext Interrupts	USB Transceiver	USB Speed	USB Interface	SPI	TWI (I2C)	UART	ISO781	LIN	Segment LCD	ADC Channels	ADC Resolution (bits)	ADC Speed (ksps)	Diff. ADC Inputs	ADC Gain Stage	Analog Comparators
ATSAML21E18A	256	32	48	Cortex-M0+	60	Y	12	16	25	16	1	FS	Host, Device	4	4	4	0	4	0	10	12	1000	Y	opAmps	2
ATSAML21E17A	128	32	48	Cortex-M0+	60	Y	12	16	25	16	1	FS	Host, Device	4	4	4	0	4	0	10	12	1000	Y	opAmps	2
ATSAML21E16A	64	32	48	Cortex-M0+	60	Y	12	16	25	16	1	FS	Host, Device	4	4	4	0	4	0	10	12	1000	Y	opAmps	2
ATSAML21E15A	32	32	48	Cortex-M0+	60	Y	12	16	25	16	1	FS	Host, Device	4	4	4	0	4	0	10	12	1000	Y	opAmps	2
ATSAML21G18A	256	48	48	Cortex-M0+	96	Y	12	16	37	16	1	FS	Host, Device	6	6	6	0	6	0	14	12	1000	Y	opAmps	2
ATSAML21G17A	128	48	48	Cortex-M0+	96	Y	12	16	37	16	1	FS	Host, Device	6	6	6	0	6	0	14	12	1000	Y	opAmps	2
ATSAML21G16A	64	48	48	Cortex-M0+	96	Y	12	16	37	16	1	FS	Host, Device	6	6	6	0	6	0	14	12	1000	Y	opAmps	2
ATSAML21J18A	256	64	48	Cortex-M0+	192	Y	12	16	51	16	1	FS	Host, Device	6	6	6	0	6	0	20	12	1000	Y	opAmps	2
ATSAML21J17A	128	64	48	Cortex-M0+	192	Y	12	16	51	16	1	FS	Host, Device	6	6	6	0	6	0	20	12	1000	Y	opAmps	2
ATSAML21J16A	64	64	48	Cortex-M0+	192	Y	12	16	51	16	1	FS	Host, Device	6	6	6	0	6	0	20	12	1000	Y	opAmps	2
SAML22G18A	256	48	32	Cortex-M0+	132	Y	8	16	36	16	1	FS	Device	3	2	3	3	0	120	10	12	1000	Y	0	2
SAML22G17A	128	48	32	Cortex-M0+	132	Y	8	16	36	16	1	FS	Device	3	2	3	3	0	120	10	12	1000	Y	0	2
SAML22G16A	64	48	32	Cortex-M0+	132	Y	8	16	36	16	1	FS	Device	3	2	3	3	0	120	10	12	1000	Y	0	2
SAML22J18A	256	64	32	Cortex-M0+	182	Y	8	16	50	16	1	FS	Device	4	4	4	4	0	184	16	12	1000	Y	0	2
SAML22J17A	128	64	32	Cortex-M0+	182	Y	8	16	50	16	1	FS	Device	4	4	4	4	0	184	16	12	1000	Y	0	2
SAML22J16A	64	64	32	Cortex-M0+	182	Y	8	16	50	16	1	FS	Device	4	4	4	4	0	184	16	12	1000	Y	0	2
SAML22N18A	256	100	32	Cortex-M0+	256	Y	8	16	82	16	1	FS	Device	6	4	6	6	0	320	20	12	1000	Y	0	2
SAML22N17A	128	100	32	Cortex-M0+	256	Y	8	16	82	16	1	FS	Device	6	4	6	6	0	320	20	12	1000	Y	0	2
SAML22N16A	64	100	32	Cortex-M0+	256	Y	8	16	82	16	1	FS	Device	6	4	6	6	0	320	20	12	1000	Y	0	2

(a) * VFBGA100 Package availiable end of February 2016
(b) Y-Yes
(c) N-No

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Atmel Flash Microcontrollers

Product Portfolio

Resistive Touch Screen	DAC Channels	DAC Resolution (bits)	Temp. Sensor	Crypto Engine	ARM Trust Zone	SRAM (Kbytes)	Self Program Memory	DRAM Memory	NAND Interface	picoPower	Debug Interface	Temp. Range (deg C)	Operating Voltage (Vcc)	FPU	ARM Neon	MPU / MMU	Timers	Output Compare channels	Input Capture Channels	PWM Channels	32kHz RTC	RTC	Tamper Detection channels	Calibrated RC Oscillator	ISP	Watchdog	Green Packages
N	2	12	Y	AES, TRNG	N	32	8	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	6	18	8	18	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP32, QFN32
N	2	12	Y	AES, TRNG	N	16	4	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	6	18	8	18	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP32, QFN32
N	2	12	Y	AES, TRNG	N	8	2	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	6	18	8	18	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP32, QFN32
N	2	12	Y	AES, TRNG	N	4	2	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	6	18	8	18	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP32, QFN32
N	2	12	Y	AES, TRNG	N	32	8	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	6	20	8	20	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP48, QFN48
N	2	12	Y	AES, TRNG	N	16	4	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	6	20	8	20	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP48, QFN48
N	2	12	Y	AES, TRNG	N	8	2	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	6	20	8	20	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP48, QFN48
N	2	12	Y	AES, TRNG	N	32	8	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	8	24	8	24	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP64, QFN64
N	2	12	Y	AES, TRNG	N	16	4	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	8	24	8	24	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP64, QFN64
N	2	12	Y	AES, TRNG	N	8	2	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	N/N	8	24	8	24	Y	RTC|Counter/ Clock+Cal	0	Y	Y	Y	TQFP64, QFN64
N	2	12	Y	AES, TRNG	N	32	8	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	Y/N	5	12	12	12	Y	RTC|Counter/ Clock+Cal	2	Y	Y	Y	TQFP48, QFN48
N	2	12	Y	AES, TRNG	N	16	4	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	Y/N	5	12	12	12	Y	RTC|Counter/ Clock+Cal	2	Y	Y	Y	TQFP48, QFN48
N	2	12	Y	AES, TRNG	N	8	2	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	Y/N	5	12	12	12	Y	RTC|Counter/ Clock+Cal	2	Y	Y	Y	TQFP48, QFN48
N	2	12	Y	AES, TRNG	N	32	8	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	Y/N	5	12	12	12	Y	RTC|Counter/ Clock+Cal	3	Y	Y	Y	TQFP64, QFN64
N	2	12	Y	AES, TRNG	N	16	4	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	Y/N	5	12	12	12	Y	RTC|Counter/ Clock+Cal	3	Y	Y	Y	TQFP64, QFN64
N	2	12	Y	AES, TRNG	N	8	2	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	Y/N	5	12	12	12	Y	RTC|Counter/ Clock+Cal	3	Y	Y	Y	TQFP64, QFN64
N	2	12	Y	AES, TRNG	N	32	8	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	Y/N	5	12	12	12	Y	RTC|Counter/ Clock+Cal	5	Y	Y	Y	TQFP100, VFBGA100*
N	2	12	Y	AES, TRNG	N	16	4	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	Y/N	5	12	12	12	Y	RTC|Counter/ Clock+Cal	5	Y	Y	Y	TQFP100, VFBGA100*
N	2	12	Y	AES, TRNG	N	8	2	N	N	Y	SWD	-40 to 85	1.62 to 3.63	N	N	Y/N	5	12	12	12	Y	RTC|Counter/ Clock+Cal	5	Y	Y	Y	TQFP100, VFBGA100*

Atmel | SMART SAM4L ARM Cortex-M4 Based Microcontrollers

Product	CPU	Flash (Kbytes)	SRAM (Kbytes)	picoPower	USB Transceiver	USB Speed	USB Interface	QTouch Channels	Hardware QTouch Acquisition	I²S	SPI	TWI (I²C)	UART	Timers	Output Compare channels	Input Capture Channels	32kHz RTC
ATSAM4LC2A	Cortex-M4	128	32	Yes	1	Full Speed	Host	13	Yes	1	1	2	3	3	9	6	Yes
ATSAM4LC2B	Cortex-M4	128	32	Yes	1	Full Speed	Host	21	Yes	1	1	4	4	3	9	6	Yes
ATSAM4LC2C	Cortex-M4	128	32	Yes	1	Full Speed	Host	32	Yes	1	1	4	4	6	18	12	Yes
ATSAM4LC4A	Cortex-M4	256	32	Yes	1	Full Speed	Host	13	Yes	1	1	2	3	3	9	6	Yes
ATSAM4LC4B	Cortex-M4	256	32	Yes	1	Full Speed	Host	21	Yes	1	1	4	4	3	9	6	Yes
ATSAM4LC4C	Cortex-M4	256	32	Yes	1	Full Speed	Host	32	Yes	1	1	4	4	6	18	12	Yes
ATSAM4LS2A	Cortex-M4	128	32	Yes	1	Full Speed	Device	32	Yes	1	1	2	3	3	9	6	Yes
ATSAM4LS2B	Cortex-M4	128	32	Yes	1	Full Speed	Device	32	Yes	1	1	4	4	3	9	6	Yes
ATSAM4LS2C	Cortex-M4	128	32	Yes	1	Full Speed	Device	32	Yes	1	1	4	4	6	18	12	Yes
ATSAM4LS4A	Cortex-M4	256	32	Yes	1	Full Speed	Device	32	Yes	1	1	2	3	3	9	6	Yes
ATSAM4LS4B	Cortex-M4	256	32	Yes	1	Full Speed	Device	32	Yes	1	1	4	4	3	9	6	Yes
ATSAM4LS4C	Cortex-M4	256	32	Yes	1	Full Speed	Device	32	Yes	1	1	4	4	6	18	12	Yes

SAM G ARM Cortex-M4F Based Microcontrollers

Product	CPU	FPU	Frequency	Flash	SRAM	SPI	TWI (I2C)	UART	USB Host	USB Device	Timers	RTC	EXT interrupts	I/O pins	12-bit ADC	I2S / PDM	Packages
SAMG51	Cortex-M4	Yes	48	256	64	2	3	3	-	-	6	Yes	38	38	8	-	49-pin WLCSP, 100-pin QFP
SAMG53	Cortex-M4	Yes	48	512	96	2	3	3	-	-	6	Yes	38	38	8	2 / 2	49-pin WLCSP, 100-pin QFP
SAMG54	Cortex-M4	Yes	96	512	96	2	3	3	-	-	6	Yes	38	38	8	2 / 2	49-pin WLCSP, 100-pin QFP
SAMG55	Cortex-M4	Yes	120	512	176	8	8	8	Yes	Yes	6	Yes	48	48	8	2 / 2	49-pin WLCSP, 64-pin QFP, 64-pin QFN

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Calibrated RC Oscillator	Ext Interrupts	Segment LCD	ADC channels	ADC Resolution (bits)	ADC Speed (ksps)	Analog Comparators	DAC Channels	DAC Resolution (bits)	Temp. Sensor	Crypto (AES)	Vcc Range (V)	Clock Speed (MHz)	Max I/O Pins	Pin Count	Green Packages	Temp. Range (°C)
Yes	27	13	3	12	300	1	1	10	Yes	Yes	1.68 - 3.6	48	27	48	TQFP 48, VQFN 48	-40 to +85
Yes	43	23	7	12	300	2	1	10	Yes	Yes	1.68 - 3.6	48	43	64	LQFP 64, VQFN 64	-40 to +85
Yes	75	40	15	12	300	4	1	10	Yes	Yes	1.68 - 3.6	48	75	100	TQFP 100	-40 to +85
Yes	27	13	3	12	300	2	1	10	Yes	Yes	1.68 - 3.6	48	27	48	TQFP 48, VQFN 48	-40 to +85
Yes	43	23	7	12	300	2	1	10	Yes	Yes	1.68 - 3.6	48	43	64	LQFP 64, VQFN 64	-40 to +85
Yes	75	40	15	12	300	4	1	10	Yes	Yes	1.68 - 3.6	48	75	100	TQFP 100	-40 to +85
Yes	32	--	3	12	300	1	1	10	Yes	--	1.68 - 3.6	48	32	48	TQFP 48,VQFN 48	-40 to +85
Yes	48	--	7	12	300	2	1	10	Yes	--	1.68 - 3.6	48	48	64	LQFP 64, VQFN 64	-40 to +85
Yes	80	--	15	12	300	4	1	10	Yes	--	1.68 - 3.6	48	80	100	TQFP 100	-40 to +85
Yes	32	--	3	12	300	1	1	10	Yes	--	1.68 - 3.6	48	32	48	TQFP 48, VQFN 48	-40 to +85
Yes	48	--	7	12	300	2	1	10	Yes	--	1.68 - 3.6	48	48	64	LQFP 64, VQFN 64	-40 to +85
Yes	80	--	15	12	300	4	1	10	Yes	--	1.68 - 3.6	48	80	100	TQFP 100	-40 to +85

Atmel | SMART SAM C ARM Cortex-M0+ Based Microcontrollers

Device Name	Flash (Kbytes)	Pin Count	Max. Operating Freq. (MHz)	CPU	# of Touch Channels	Hardware QTouch Acquisition	Max I/O Pins	Ext Interrupts	USB Transceiver	USB Speed	USB Interface	SPI	TWI (I2C)	UART	CAN	LIN	ADC channels	ADC Resolution (bits)	ADC Speed (ksps)	Diff. ADC Inputs	ADC Gain Stage	Analog Comparators	Resistive Touch Screen	DAC Channels	DAC Resolution (bits)
ATSAMC20E18A	256	32	48	Cortex-M0+	60	Y	26	16	0	0	0	4	4	4	0	4	10	12	1000	Y	N	2	N	0	10
ATSAMC20E17A	128	32	48	Cortex-M0+	60	Y	26	16	0	0	0	4	4	4	0	4	10	12	1000	Y	N	2	N	0	10
ATSAMC20E16A	64	32	48	Cortex-M0+	60	Y	26	16	0	0	0	4	4	4	0	4	10	12	1000	Y	N	2	N	0	10
ATSAMC20E15A	32	32	48	Cortex-M0+	60	Y	26	16	0	0	0	4	4	4	0	4	10	12	1000	Y	N	2	N	0	10
ATSAMC20G18A	256	48	48	Cortex-M0+	120	Y	38	16	0	0	0	4	4	4	0	4	14	12	1000	Y	N	2	N	0	10
ATSAMC20G17A	128	48	48	Cortex-M0+	120	Y	38	16	0	0	0	4	4	4	0	4	14	12	1000	Y	N	2	N	0	10
ATSAMC20G16A	64	48	48	Cortex-M0+	120	Y	38	16	0	0	0	4	4	4	0	4	14	12	1000	Y	N	2	N	0	10
ATSAMC20G15A	32	48	48	Cortex-M0+	120	Y	38	16	0	0	0	4	4	4	0	4	14	12	1000	Y	N	2	N	0	10
ATSAMC20J18A	256	64	48	Cortex-M0+	256	Y	52	16	0	0	0	4	4	4	0	4	20	12	1000	Y	N	2	N	0	10
ATSAMC20J17A	128	64	48	Cortex-M0+	256	Y	52	16	0	0	0	4	4	4	0	4	20	12	1000	Y	N	2	N	0	10
ATSAMC20J16A	64	64	48	Cortex-M0+	256	Y	52	16	0	0	0	4	4	4	0	4	20	12	1000	Y	N	2	N	0	10
ATSAMC20J15A	32	64	48	Cortex-M0+	256	Y	52	16	0	0	0	4	4	4	0	4	20	12	1000	Y	N	2	N	0	10
ATSAMC21E18A	256	32	48	Cortex-M0+	60	Y	26	16	0	0	0	4	4	4	1	4	10	12	1000	Y	N	3	N	1	10
ATSAMC21E17A	128	32	48	Cortex-M0+	60	Y	26	16	0	0	0	4	4	4	1	4	10	12	1000	Y	N	3	N	1	10
ATSAMC21E16A	64	32	48	Cortex-M0+	60	Y	26	16	0	0	0	4	4	4	1	4	10	12	1000	Y	N	3	N	1	10
ATSAMC21E15A	32	32	48	Cortex-M0+	60	Y	26	16	0	0	0	4	4	4	1	4	10	12	1000	Y	N	3	N	1	10
ATSAMC21G18A	256	48	48	Cortex-M0+	120	Y	38	16	0	0	0	6	6	6	2	6	14	12	1000	Y	N	4	N	1	10
ATSAMC21G17A	128	48	48	Cortex-M0+	120	Y	38	16	0	0	0	6	6	6	2	6	14	12	1000	Y	N	4	N	1	10
ATSAMC21G16A	64	48	48	Cortex-M0+	120	Y	38	16	0	0	0	6	6	6	2	6	14	12	1000	Y	N	4	N	1	10
ATSAMC21G15A	32	48	48	Cortex-M0+	120	Y	38	16	0	0	0	6	6	6	2	6	14	12	1000	Y	N	4	N	1	10
ATSAMC21J18A	256	64	48	Cortex-M0+	256	Y	52	16	0	0	0	6	6	6	2	6	20	12	1000	Y	N	4	N	1	10
ATSAMC21J17A	128	64	48	Cortex-M0+	256	Y	52	16	0	0	0	6	6	6	2	6	20	12	1000	Y	N	4	N	1	10
ATSAMC21J16A	64	64	48	Cortex-M0+	256	Y	52	16	0	0	0	6	6	6	2	6	20	12	1000	Y	N	4	N	1	10
ATSAMC21J15A	32	64	48	Cortex-M0+	256	Y	52	16	0	0	0	6	6	6	2	6	20	12	1000	Y	N	4	N	1	10

(a) Y-Yes
(b) N-No

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Temp. Sensor	Crypto Engine	ARM Trust Zone	SRAM (Kbytes)	EEPROM (Bytes)	Self Program Memory	External Bus Interface	DRAM Memory	NAND Interface	picoPower	Debug Interface	Temp. Range (deg C)	Operating Voltage (Vcc)	FPU	ARM Neon	MPU / MMU	Timers	Output Compare channels	Input Capture Channels	PWM Channels	32kHz RTC	RTC	Calibrated RC Oscillator	ISP	Watchdog
N	N	N	32	8	8	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	16	6	6	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	8	4	4	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	4	2	2	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	32	8	8	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	16	6	6	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	8	4	4	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	4	2	2	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	32	8	8	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	16	6	6	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	8	4	4	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
N	N	N	4	2	2	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	32	8	8	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	16	6	6	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	8	4	4	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	4	2	2	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	32	8	8	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	16	6	6	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	8	4	4	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	4	2	2	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	32	8	8	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	16	6	6	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	8	4	4	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y
Y	N	N	4	2	2	0	N	N	N	SWD	-40 to 105	2.7 to 5.5	N	N	N/N	5	10	5	10	Y	Y	Y	Y	Y

Atmel | SMART SAM4E ARM Cortex-M4 Based Microcontrollers

Device Name	CPU	Flash (Kbytes)	SRAM (Kbytes)	Clock Speed (MHz)	QTouch Channels	Quadrature Decoder Channels	USB Transceiver	USB Speed	USB Interface	SPI	TWI (I^2C)	UART	CAN	Ethernet	SD / eMMC	Timers	Output Compare Channels	Input Capture Channels	PWM Channels	Ext Interrupts	ADC channels	ADC Resolution (bits) + Averaging (bits)
ATSAM4E8C	Cortex-M4	512	128	120	32	2	1	Full Speed	Device	3	2	4	1	1	1	3	3	3	4	79	6+4	12+4
ATSAM4E8E	Cortex-M4	512	128	120	32	2	1	Full Speed	Device	3	2	4	2	1	1	9	9	9	4	117	16+8	12+4
ATSAM4E16C	Cortex-M4	1024	128	120	32	2	1	Full Speed	Device	3	2	4	1	1	1	3	3	3	4	79	6+4	12+4
ATSAM4E16E	Cortex-M4	1024	128	120	32	2	1	Full Speed	Device	3	2	4	2	1	1	9	9	9	4	117	16+8	12+4

The QFP package has a -40°C to 105°C option. Also available upon request for any other package type.

Atmel | SMART SAM E70 ARM Cortex-M7 Based Microcontrollers

Product	CPU	Flash (Kbytes)	SRAM (Kbytes)	Max. Operating Freq. (MHz)	FPU	MPU / MMU	Pin Count	USB Transceiver	USB Speed	USB Interface	SPI	QSPI	TWI (I2C)	UART	CAN	CAN-FD	LIN	Timers	PWM Channels	I2S
ATSAME70J19	Cortex-M7	512	256	300	Yes	Yes / No	64	1	Full Speed	Host, Device	1	0	2	5	1	Yes	2	14	8	Yes
ATSAME70J20	Cortex-M7	1024	384	300	Yes	Yes / No	64	1	Full Speed	Host, Device	1	0	2	5	1	Yes	2	14	8	Yes
ATSAME70J21	Cortex-M7	2048	384	300	Yes	Yes / No	64	1	Full Speed	Host, Device	1	0	2	5	1	Yes	2	14	8	Yes
ATSAME70N19	Cortex-M7	512	256	300	Yes	Yes / No	100	1	Hi-Speed	Host, Device	4	1	3	8	2	Yes	3	14	8	Yes
ATSAME70N20	Cortex-M7	1024	384	300	Yes	Yes / No	100	1	Hi-Speed	Host, Device	4	1	3	8	2	Yes	3	14	8	Yes
ATSAME70N21	Cortex-M7	2048	384	300	Yes	Yes / No	100	1	Hi-Speed	Host, Device	4	1	3	8	2	Yes	3	14	8	Yes
ATSAME70Q19	Cortex-M7	512	256	300	Yes	Yes / No	144	1	Hi-Speed	Host, Device	5	1	3	8	2	Yes	3	14	8	Yes
ATSAME70Q20	Cortex-M7	1024	384	300	Yes	Yes / No	144	1	Hi-Speed	Host, Device	5	1	3	8	2	Yes	3	14	8	Yes
ATSAME70Q21	Cortex-M7	2048	384	300	Yes	Yes / No	144	1	Hi-Speed	Host, Device	5	1	3	8	2	Yes	3	14	8	Yes

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ADC Speed (ksps)	Analog Comparators	DAC Channels	DAC Resolution (bits)	Temp. Sensor	Crypto Engine	External Bus Interface	NAND Interface	FPU	MPU / MMU	32kHz RTC	Calibrated RC Oscillator	Max I/O Pins	Pin Count	I/O Supply Class	Operating Voltage (Vcc)	Packages	Temp. Range (deg C)
1000	1	2	12	Yes	AES	--	No	Yes	Yes / No	Yes	Yes	79	100	1.8/3.3	1.6 to 3.6	LQFP100, LFBGA100	-40 to +105
1000	1	2	12	Yes	AES	1	Yes	Yes	Yes / No	Yes	Yes	117	144	1.8/3.3	1.6 to 3.6	LQFP144, LFBGA144	-40 to +105
1000	1	2	12	Yes	AES	--	No	Yes	Yes / No	Yes	Yes	79	100	1.8/3.3	1.6 to 3.6	LQFP100, LFBGA100	-40 to +105
1000	1	2	12	Yes	AES	1	Yes	Yes	Yes / No	Yes	Yes	117	144	1.8/3.3	1.6 to 3.6	LQFP144, LFBGA144	-40 to +105

SSC	Ethernet	Ethernet AVB	SD / eMMC	Camera Interface	32kHz RTC	ADC Channels	ADC Resolution (bits)	ADC Speed (ksps)	Analog Comparators	DAC Channels	DAC Resolution (bits)	Crypto Engine	External Bus Interface	DRAM Memory	Temp. Range (deg C)	I/O Supply Class	Operating Voltage (Vcc)	Max I/O Pins	Packages
1	1	Yes	0	Yes	Yes	5	12	2000	1	1	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	44	LQFP64, QFN64
1	1	Yes	0	Yes	Yes	5	12	2000	1	1	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	44	LQFP64, QFN64
1	1	Yes	0	Yes	Yes	5	12	2000	1	1	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	44	LQFP64, QFN64
1	1	Yes	1	Yes	Yes	10	12	2000	1	2	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	75	LQFP100, TFBGA100
1	1	Yes	1	Yes	Yes	10	12	2000	1	2	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	75	LQFP100, TFBGA100
1	1	Yes	1	Yes	Yes	10	12	2000	1	2	12	AES/SHA/TRNG	0	No	-40 to 105	1.8/3.3	1.7 to 3.6	75	LQFP100, TFBGA100
1	1	Yes	1	Yes	Yes	24	12	2000	1	2	12	AES/SHA/TRNG	1	Yes	-40 to 105	1.8/3.3	1.7 to 3.6	114	LQFP144, LFBGA144
1	1	Yes	1	Yes	Yes	24	12	2000	1	2	12	AES/SHA/TRNG	1	Yes	-40 to 105	1.8/3.3	1.7 to 3.6	114	LQFP144, LFBGA144
1	1	Yes	1	Yes	Yes	24	12	2000	1	2	12	AES/SHA/TRNG	1	Yes	-40 to 105	1.8/3.3	1.7 to 3.6	114	LQFP144, LFBGA144

Atmel | SMART SAM3A ARM Cortex-M3 Based Microcontrollers

Product	CPU	Flash (Kbytes)	SRAM (Kbytes)	USB Transceiver	USB Speed	USB Interface	QTouch Channels	Quadrature Decoder Channels	SPI	TWI (I^2C)	UART	CAN	LIN	SSC	SD / eMMC	Timers	Output Compare channels	Input Capture Channels	PWM Channels	Ext Interrupts
ATSAM3A4C	Cortex-M3	256	64	1	Hi-Speed	Host, Device	31	2	4	2	4	2	3	1	1	9	9	9	8	63
ATSAM3A8C	Cortex-M3	512	96	1	Hi-Speed	Host, Device	31	2	4	2	4	2	3	1	1	9	9	9	8	63

Atmel | SMART SAM3U ARM Cortex-M3 Based Microcontrollers

Product	CPU	Flash (Kbytes)	SRAM (Kbytes)	USB Transceiver	USB Speed	USB Interface	Q Touch Channels	Quadrature Decoder Channels	SPI	TWI (I^2C)	UART	SSC	SD / eMMC	Timers	Output Compare channels	Input Capture Channels	PWM Channels
ATSAM3U1C	Cortex-M3	64	20	1	Hi-Speed	Device	28	1	4	1	4	1	1	3	3	3	4
ATSAM3U1E	Cortex-M3	64	20	1	Hi-Speed	Device	32	1	5	2	5	1	1	3	3	3	4
ATSAM3U2C	Cortex-M3	128	36	1	Hi-Speed	Device	28	1	4	1	4	1	1	3	3	3	4
ATSAM3U2E	Cortex-M3	128	36	1	Hi-Speed	Device	32	1	5	2	5	1	1	3	3	3	4
ATSAM3U4C	Cortex-M3	256	52	1	Hi-Speed	Device	28	1	4	1	4	1	1	3	3	3	4
ATSAM3U4E	Cortex-M3	256	52	1	Hi-Speed	Device	32	1	5	2	5	1	1	3	3	3	4

Atmel | SMART SAM3X ARM Cortex-M3 Based Microcontrollers

Product	CPU	Flash (Kbytes)	SRAM (Kbytes)	USB Transceiver	USB Speed	USB Interface	QTouch Channels	Quadrature Decoder Channels	SPI	TWI (I^2C)	UART	CAN	LIN	SSC	Ethernet	SD / eMMC	Timers	Output Compare channels	Input Capture Channels	PWM Channels
ATSAM3X4C	Cortex-M3	256	64	1	Hi-Speed	Host	31	2	4	2	4	2	3	1	1	1	9	6	6	8
ATSAM3X4E	Cortex-M3	256	64	1	Hi-Speed	Host	32	2	4	2	5	2	3	1	1	1	9	3	3	8
ATSAM3X8C	Cortex-M3	512	96	1	Hi-Speed	Host	31	2	4	2	4	2	3	1	1	1	9	6	6	8
ATSAM3X8E	Cortex-M3	512	96	1	Hi-Speed	Host	32	2	4	2	5	2	3	1	1	1	9	3	3	8

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ADC channels	ADC Resolution (bits)	ADC Speed (ksps)	DAC Channels	DAC Resolution (bits)	Temp. Sensor	32kHz RTC	Calibrated RC Oscillator	Clock Speed (MHz)	Max I/O Pins	Pin Count	I/O Supply Class (V)	Vcc Range (V)	Green Packages	Temp. Range (°C)
16	12	1000	2	12	Yes	Yes	Yes	84	63	100	1.8/3.3	1.62 to 3.6	LQFP 100, LFBGA 100	-40 to +85
16	12	1000	2	12	Yes	Yes	Yes	84	63	100	1.8/3.3	1.62 to 3.6	LQFP 100, LFBGA 100	-40 to +86

Ext Interrupts	ADC channels	ADC Resolution (bits)	ADC Speed (ksps)	External Bus Interface	NAND Interface	32kHz RTC	Calibrated RC Oscillator	Clock Speed (MHz)	Max I/O Pins	Pin Count	I/O Supply Class	Operating Voltage (Vcc)	Packages	Temp. Range (°C)
57	8	12	1000	1	Yes	Yes	Yes	96	57	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to 85
96	16	12	1000	1	Yes	Yes	Yes	96	96	144	1.8/3.3	1.62 to 3.6	LQFP 144, TFBGA 144	-40 to 85
57	8	12	1000	1	Yes	Yes	Yes	96	57	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to 85
96	16	12	1000	1	Yes	Yes	Yes	96	96	144	1.8/3.3	1.62 to 3.6	LQFP 144, TFBGA 144	-40 to 85
57	8	12	1000	1	Yes	Yes	Yes	96	57	100	1.8/3.3	1.62 to 3.6	LQFP 100, TFBGA 100	-40 to 85
96	16	12	1000	1	Yes	Yes	Yes	96	96	144	1.8/3.3	1.62 to 3.6	LQFP 144, TFBGA 144	-40 to 85

Ext Interrupts	ADC channels	ADC Resolution (bits)	ADC Speed (ksps)	DAC Channels	DAC Resolution (bits)	Temp. Sensor	External Bus Interface	NAND Interface	32kHz RTC	Calibrated RC Oscillator	Clock Speed (MHz)	Max I/O Pins	Pin Count	I/O Supply Class	Vcc Range (MHz)	Green Packages	Temp. Range (°C)
63	16	12	1000	2	12	Yes	1	Yes	Yes	Yes	84	63	100	1.8/3.3	1.62 to 3.6	LQFP 100, LFBGA 100	-40 to +85
103	16	12	1000	2	12	Yes	1	Yes	Yes	Yes	84	103	144	1.8/3.3	1.62 to 3.6	LQFP 144, LFBGA 144	-40 to +85
63	16	12	1000	2	12	Yes	1	Yes	Yes	Yes	84	63	100	1.8/3.3	1.62 to 3.6	LQFP 100, LFBGA 100	-40 to +85
103	16	12	1000	2	12	Yes	1	Yes	Yes	Yes	84	103	144	1.8/3.3	1.62 to 3.6	LQFP 144, LFBGA 144	-40 to +85

AVR UC3 32-bit Microcontrollers

Product	Flash (KBytes)	SRAM (Bytes)	USART	SPI (4 Slave CS)	TWI (I²C)	CAN	Ethernet MAC	SD/MMC	USB Hi-Speed	USB Full Speed	USB Host/OTG	HW capacitive touch	QTouch channels	I²S	ABDAC (Audio Bitstream DAC)	10-bit A/D (Channels)	12-bit A/D (Channels)	DAC	Analog Comparator
AT32UC3A0128	128	32K	4	2	1	--	1	--	--	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A0256	256	64K	4	2	1	--	1	--	--	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A0512	512	64K	4	2	1	--	1	--	--	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A1128	128	32K	4	2	1	--	1	--	--	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A1256	256	64K	4	2	1	--	1	--	--	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A1512	512	64K	4	2	1	--	1	--	--	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A364	64	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A3128	128	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A3256	256	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A364S	64	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A3128S	128	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A3256S	256	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	32	1	Yes	8	--	--	--
AT32UC3A464	64	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	35	1	Yes	8	--	--	--
AT32UC3A4128	128	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	35	1	Yes	8	--	--	--
AT32UC3A4256	256	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	35	1	Yes	8	--	--	--
AT32UC3A464S	64	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	35	1	Yes	8	--	--	--
AT32UC3A4128S	128	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	35	1	Yes	8	--	--	--
AT32UC3A4256S	256	128K	4	2	2	--	--	Yes	Yes	Yes	Yes	--	35	1	Yes	8	--	--	--
AT32UC3B064	64	16K	3	1	1	--	--	--	--	Yes	Yes	--	32	1	--	8	--	--	--
AT32UC3B0128	128	32K	3	1	1	--	--	--	--	Yes	Yes	--	32	1	--	8	--	--	--
AT32UC3B0256	256	32K	3	1	1	--	--	--	--	Yes	Yes	--	32	1	--	8	--	--	--
AT32UC3B0512	512	96K	3	1	1	--	--	--	--	Yes	Yes	--	32	1	--	8	--	--	--
AT32UC3B164	64	16K	2	1	1	--	--	--	--	Yes	--	--	32	--	--	6	--	--	--
AT32UC3B1128	128	32K	2	1	1	--	--	--	--	Yes	--	--	32	--	--	6	--	--	--
AT32UC3B1256	256	32K	2	1	1	--	--	--	--	Yes	--	--	32	--	--	6	--	--	--
AT32UC3B1512	512	96K	2	1	1	--	--	--	--	Yes	--	--	32	--	--	6	--	--	--
AT32UC3C064C	64	16K	5	2	3	2	1	--	--	Yes	Yes	--	--	1	--	--	16	2	4
AT32UC3C0128C	128	32K	5	2	3	2	1	--	--	Yes	Yes	--	--	1	--	--	16	2	4
AT32UC3C0256C	256	64K	5	2	3	2	1	--	--	Yes	Yes	--	--	1	--	--	16	2	4
AT32UC3C0512C	512	64K	5	2	3	2	1	--	--	Yes	Yes	--	32	1	--	--	16	2	4
AT32UC3C164C	64	16K	5	2	3	2	1	--	--	Yes	Yes	--	--	1	--	--	16	2	4
AT32UC3C1128C	128	32K	5	2	3	2	1	--	--	Yes	Yes	--	--	1	--	--	16	2	4
AT32UC3C1256C	256	64K	5	2	3	2	1	--	--	Yes	Yes	--	--	1	--	--	16	2	4
AT32UC3C1512C	512	64K	5	2	3	2	1	--	--	Yes	Yes	--	32	1	--	--	16	2	4
AT32UC3C264C	64	16K	4	1	2	2	1	--	--	Yes	Yes	--	--	1	--	--	11	1	2
AT32UC3C2128C	128	32K	4	1	2	2	1	--	--	Yes	Yes	--	--	1	--	--	11	1	2
AT32UC3C2256C	256	64K	4	1	2	2	1	--	--	Yes	Yes	--	--	1	--	--	11	1	2
AT32UC3C2512C	512	64K	4	1	2	2	1	--	--	Yes	Yes	--	32	1	--	--	11	1	2
ATUC64D3	64	16K	3	1	1	--	--	--	--	Yes	--	Yes	25	--	--	8	--	--	--
ATUC128D3	128	16K	3	1	1	--	--	--	--	Yes	--	Yes	25	--	--	8	--	--	--
ATUC64D4	64	16K	3	1	1	--	--	--	--	Yes	--	Yes	17	--	--	6	--	--	--
ATUC128D4	128	16K	3	1	1	--	--	--	--	Yes	--	Yes	17	--	--	6	--	--	--

(a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also halide free and fully green.
(b) Voltage supply: 3.0 - 3.6V or 4.5 - 5.5V.

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Atmel Flash Microcontrollers

Product Portfolio

16-bit Timer/Counters	PWM (Channels)	RTC/ 32 KHz oscillator	Crystal oscillator	PLL	DFLL	Memory Protection Unit	Secure Access Unit	FlashVault™	Crypto (256-bit AES)	picoPower	I/O	Vcc Range (V)	Clock Speed (MHz)	Green Packages (a)	Temp. Range
6	13	Yes	2	2	--	Yes	--	--	--	--	109	3.0 - 3.6	66	LQFP144, TFBGA144	-40°C to +85°C
6	13	Yes	2	2	--	Yes	--	--	--	--	109	3.0 - 3.6	66	LQFP144, TFBGA144	-40°C to +85°C
6	13	Yes	2	2	--	Yes	--	--	--	--	109	3.0 - 3.6	66	LQFP144, TFBGA144	-40°C to +85°C
6	13	Yes	2	2	--	Yes	--	--	--	--	69	3.0 - 3.6	66	TQFP100	-40°C to +85°C
6	13	Yes	2	2	--	Yes	--	--	--	--	69	3.0 - 3.6	66	TQFP100	-40°C to +85°C
6	13	Yes	2	2	--	Yes	--	--	--	--	69	3.0 - 3.6	66	TQFP100	-40°C to +85°C
6	12	Yes	2	2	--	Yes	--	--	--	--	110	3.0 - 3.6	66	LQFP144, TFBGA144	-40°C to +85°C
6	12	Yes	2	2	--	Yes	--	--	--	--	110	3.0 - 3.6	66	LQFP144, TFBGA144	-40°C to +85°C
3	12	Yes	2	2	--	Yes	--	--	--	--	110	3.0 - 3.6	66	LQFP144, TFBGA144	-40°C to +85°C
3	12	Yes	2	2	--	Yes	--	--	Yes	--	110	3.0 - 3.6	66	LQFP144, TFBGA144	-40°C to +85°C
3	12	Yes	2	2	--	Yes	--	--	Yes	--	110	3.0 - 3.6	66	LQFP144, TFBGA144	-40°C to +85°C
3	12	Yes	2	2	--	Yes	--	--	Yes	--	110	3.0 - 3.6	66	LQFP144, TFBGA144	-40°C to +85°C
3	13	Yes	2	2	--	Yes	--	--	--	--	83	3.0 - 3.6	66	VFBGA100	-40°C to +85°C
3	13	Yes	2	2	--	Yes	--	--	--	--	83	3.0 - 3.6	66	VFBGA100	-40°C to +85°C
3	13	Yes	2	2	--	Yes	--	--	--	--	83	3.0 - 3.6	66	VFBGA100	-40°C to +85°C
3	13	Yes	2	2	--	Yes	--	--	Yes	--	83	3.0 - 3.6	66	VFBGA100	-40°C to +85°C
7	13	Yes	2	2	--	Yes	--	--	Yes	--	83	3.0 - 3.6	66	VFBGA100	-40°C to +85°C
7	13	Yes	2	2	--	Yes	--	--	Yes	--	83	3.0 - 3.6	66	VFBGA100	-40°C to +85°C
7	13	Yes	2	2	--	Yes	--	--	--	--	44	3.0 - 3.6	60	TQFP64, QFN64	-40°C to +85°C
7	13	Yes	2	2	--	Yes	--	--	--	--	44	3.0 - 3.6	60	TQFP64, QFN64	-40°C to +85°C
7	13	Yes	2	2	--	Yes	--	--	--	--	44	3.0 - 3.6	60	TQFP64, QFN64	-40°C to +85°C
7	13	Yes	2	2	--	Yes	--	--	--	--	44	3.0 - 3.6	60	TQFP64, QFN64	-40°C to +85°C
7	13	Yes	1	2	--	Yes	--	--	--	--	28	3.0 - 3.6	60	TQFP48, QFN48	-40°C to +85°C
7	13	Yes	1	2	--	Yes	--	--	--	--	28	3.0 - 3.6	60	TQFP48, QFN48	-40°C to +85°C
7	13	Yes	1	2	--	Yes	--	--	--	--	28	3.0 - 3.6	60	TQFP48, QFN48	-40°C to +85°C
7	13	Yes	1	2	--	Yes	--	--	--	--	28	3.0 - 3.6	60	TQFP48, QFN48	-40°C to +85°C
7	20	Yes	2	2	--	Yes	Yes	Yes	--	--	123	3.0 - 5.5(b)	66	LQFP144	-40°C to +85°C
7	20	Yes	2	2	--	Yes	Yes	Yes	--	--	123	3.0 - 5.5(b)	66	LQFP144	-40°C to +85°C
3	20	Yes	2	2	--	Yes	Yes	Yes	--	--	123	3.0 - 5.5(b)	66	LQFP144	-40°C to +85°C
3	20	Yes	2	2	--	Yes	Yes	Yes	--	--	123	3.0 - 5.5(b)	66	LQFP144	-40°C to +85°C
3	20	Yes	2	2	--	Yes	Yes	Yes	--	--	81	3.0 - 5.5(b)	66	TQFP100	-40°C to +85°C
3	20	Yes	2	2	--	Yes	Yes	Yes	--	--	81	3.0 - 5.5(b)	66	TQFP100	-40°C to +85°C
6	20	Yes	2	2	--	Yes	Yes	Yes	--	--	81	3.0 - 5.5(b)	66	TQFP100	-40°C to +85°C
6	20	Yes	2	2	--	Yes	Yes	Yes	--	--	81	3.0 - 5.5(b)	66	TQFP100	-40°C to +85°C
3	20	Yes	2	2	--	Yes	Yes	Yes	--	--	45	3.0 - 5.5(b)	66	TQFP64	-40°C to +85°C
3	20	Yes	2	2	--	Yes	Yes	Yes	--	--	45	3.0 - 5.5(b)	66	TQFP64	-40°C to +85°C
3	20	Yes	2	2	--	Yes	Yes	Yes	--	--	45	3.0 - 5.5(b)	66	TQFP64	-40°C to +85°C
3	20	Yes	2	2	--	Yes	Yes	Yes	--	--	45	3.0 - 5.5(b)	66	TQFP64	-40°C to +85°C
3	7	Yes	1	2	--	--	--	--	--	--	51	3.0 - 3.6	48	TQFP64, VQFN64	-40°C to +85°C
3	7	Yes	1	2	--	--	--	--	--	--	51	3.0 - 3.6	48	TQFP64, VQFN64	-40°C to +85°C
3	7	Yes	1	2	--	--	--	--	--	--	35	3.0 - 3.6	48	TQFP48, VQFN48	-40°C to +85°C
3	7	Yes	1	2	--	--	--	--	--	--	35	3.0 - 3.6	48	TQFP48, VQFN48	-40°C to +85°C

AVR UC3 32-bit Microcontrollers - Continued

Product	Flash (KBytes)	SRAM (Bytes)	USART	SPI (4 Slave CS)	TWI (I^2C)	CAN	Ethernet MAC	SD/MMC	USB Hi-Speed	USB Full Speed	USB Host/OTG	HW capacitive touch	QTouch channels	I^2S	ABDAC (Audio Bitstream DAC)	10-bit A/D (Channels)	12-bit A/D (Channels)	DAC	Analog Comparator
AT32UC3L016	16	8K	4	1	2	--	--	--	--	--	--	Yes	--	--	--	--	8	--	8
AT32UC3L032	32	16K	4	1	2	--	--	--	--	--	--	Yes	--	--	--	--	8	--	8
AT32UC3L064	64	16K	4	1	2	--	--	--	--	--	--	Yes	--	--	--	--	8	--	8
AT32UC3L0128	128	32K	4	1	2	--	--	--	--	--	--	Yes	--	--	--	--	8	--	8
AT32UC3L0256	256	32K	4	1	2	--	--	--	--	--	--	Yes	--	--	--	--	8	--	8
ATUC64L3U	64	16K	4	1	2	--	--	--	--	Yes	--	Yes	25	1	Yes	--	8	--	8
ATUC128L3U	128	32K	4	1	2	--	--	--	--	Yes	--	Yes	25	1	Yes	--	8	--	8
ATUC256L3U	256	32K	4	1	2	--	--	--	--	Yes	--	Yes	25	1	Yes	--	8	--	8
ATUC64L4U	64	16K	4	1	2	--	--	--	--	Yes	--	Yes	17	--	--	--	8	--	8
ATUC128L4U	128	32K	4	1	2	--	--	--	--	Yes	--	Yes	17	--	--	--	8	--	8
ATUC256L4U	256	32K	4	1	2	--	--	--	--	Yes	--	Yes	17	--	--	--	8	--	8

(a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also halide free and fully green.
(b) Voltage supply: 3.0 - 3.6V or 4.5 - 5.5V.

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16-bit Timer/Counters	PWM (Channels)	RTC/ 32 KHz oscillator	Crystal oscillator	PLL	DFLL	Memory Protection Unit	Secure Access Unit	FlashVault™	Crypto (256-bit AES)	picoPower	I/O	Vcc Range (V)	Clock Speed (MHz)	Green Packages (a)	Temp. Range
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	36	1.62 - 3.6	50	TQFP48, QFN48, TLLGA48	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	36	1.62 - 3.6	50	TQFP48, QFN48, TLLGA48	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	36	1.62 - 3.6	50	TQFP48, QFN48, TLLGA48	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	36	1.62 - 3.6	50	TQFP48, QFN48, TLLGA48	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	36	1.62 - 3.6	50	TQFP48, QFN48, TLLGA48	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	51	1.62 - 3.6	50	TQFP64, QFN64	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	51	1.62 - 3.6	50	TQFP64, QFN64	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	51	1.62 - 3.6	50	TQFP64, QFN64	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	36	1.62 - 3.6	50	TQFP48, QFN48, TLLGA48	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	36	1.62 - 3.6	50	TQFP48, QFN48, TLLGA48	-40°C to +85°C
6	36	Yes	1	--	2	Yes	Yes	Yes	--	Yes	36	1.62 - 3.6	50	TQFP48, QFN48, TLLGA48	-40°C to +85°C

Atmel | SMART and AVR Wireless Solutions

Product	Flash (KBytes)	EEPROM (KBytes)	SRAM (KBytes)	ISM Band	Sensitivity (dBm)	Output Power (dBm)	Vcc (V) Range	Clock Speed (MHz)	Green Package	Temp. Range (°C)	Data Rate (kbps)	AES	Antenna Diversity	Application Areas		
														Low Level/ Peer-Peer	ZigBee RF4CE	ZigBee PRO
ATmega128RFA1	128	4	16	2.4 GHz	-100	-17 to +3.5	1.8-3.6	16	QFN64	-40 to +85 -40 to +125	2 Mb	x	x	x	x	x
ATmega64RFR2	64	2	8	2.4 GHz	-100	17 to +3.5	1.8-3.6	16	QFN64	-40 to +85 -40 to +125	2 Mb	x	x	x	x	-
ATmega644RFR2	64	2	8	2.4 GHz	-100	17 to +3.5	1.8-3.6	16	QFN48	-40 to +85 -40 to +125	2 Mb	x	x	x	x	
ATmega128RFR2	128	4	16	2.4 GHz	-100	17 to +3.5	1.8-3.6	16	QFN64	-40 to +85 -40 to +125	2 Mb	x	x	-	-	x
ATmega1284RFR2	128	4	16	2.4 GHz	-100	17 to +3.5	1.8-3.6	16	QFN48	-40 to +85 -40 to +125	2 Mb	x	x	-	-	x
ATmega256RFR2	256	8	32	2.4 GHz	-100	-17 to +3.5	1.8-3.6	16	QFN64	-40 to +85 -40 to +125	2 Mb	x	x	-	-	x
ATmega2564RFR2	256	8	32	2.4 GHz	-100	-17 to +3.5	1.8-3.6	16	QFN48	-40 to +85 -40 to +125	2 Mb	x	x	-	-	x
AT86RF212B	-	-	-	700/800/900 MHz	-110	-10 to +10	1.8-3.6	-	QFN32	-40 to +85	1 Mb	x	x	x	-	x
AT86RF230	-	-	-	2.4 GHz	-101	-17 to +3	1.8-3.6	-	QFN32	-40 to +85	250	-	-	x	-	-
AT86RF231	-	-	-	2.4 GHz	-101	-17 to +3	1.8-3.6	-	QFN32	-40 to +85 -40 to +125	2 Mb	x	x	-	x	x
AT86RF232	-	-	-	2.4 GHz	-100	-17 to +3	1.8-3.6	-	QFN32	0 to +70	250	x	x	x	x	-
AT86RF233	-	-	-	2.4 GHz	-101	-17 to +4	1.8-3.6	-	QFN32	-40 to +85	2 Mb	x	x	-	-	x

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Atmel Tools

Design Software		
Product	Description	
Atmel Studio	Integrated development platform (IDP) for developing and debugging embedded Atmel AVR and Cortex-M based applications	

Debuggers		
Product	Description	
SAM-ICE™	JTAG emulator for Atmel ARM processor-based microcontrollers	
Atmel-ICE	Mid-range in-system debugger for Atmel AVR 8- and 32-bit microcontrollers. 3 feature options available	
AVR ONE!	High-end in-system debugger for Atmel AVR 8- and 32-bit microcontrollers	

Atmel Tools - Continued

Evaluation Kits

Product	Description	
SAM C21 Xplained Pro	For evaluation and prototyping with Atmel SAM C20 and C21 Cortex-M0+ microcontrollers. Ordering code: ATSAMC21-XPRO	
SAM D20 Xplained Pro	For evaluation and prototyping with Atmel SAM D20 Cortex-M0+ microcontrollers. Ordering code: ATSAMD20-XPRO	
SAM D21 Xplained Pro	For evaluation and prototyping with Atmel SAM D21 Cortex-M0+ microcontrollers. Ordering code: ATSAMD21-XPRO	
ATSAM3N-EK	Evaluation kit for Atmel SAM3N Cortex-M3 microcontrollers	
ATSAM3S-EK2	Evaluation kit for Atmel SAM3S and ATSAM3SD Cortex-M3 microcontrollers	
ATSAM3U-EK	Evaluation kit for Atmel SAM3U Cortex-M3 microcontrollers	
ATSAM3X-EK	Evaluation kit for Atmel SAM3X and SAM3A Cortex-M3 microcontrollers	
ATSAM4L-EK	Evaluation kit for Atmel SAM4L Cortex-M4 microcontrollers	
SAM4L Xplained Pro	For evaluation and prototyping with Atmel SAM4L Cortex-M4 microcontrollers. Available as evaluation kit or starter kit.	
SAM L21 Xplained Pro	For evaluation and prototyping with Atmel SAM L21 Cortex-M0+ microcontrollers. Ordering code: ATSAML21-XPRO-B	

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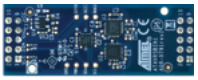
Atmel Tools - Continued

Evaluation Kits		
Product	Description	
SAM L22 Xplained Pro	For evaluation and prototyping with Atmel SAM L22 Cortex-M0+ microcontrollers. Ordering code: ATSAML22-XPRO	
SAM G55 Xplained Pro	For evaluation and prototyping with Atmel SAM G55 Cortex-M4F microcontrollers. Ordering code: ATSAMG55-XPRO	
ATSAM4E-EK	Evaluation kit for Atmel SAM4E Cortex-M4 microcontrollers	
SAM V71 Xplained Ultra Evaluation Kit	For evaluation and prototyping with Atmel SAM V71, SAM V70, SAM S70 and SAM E70 ARM Cortex-M7 microcontrollers. Ordering code: ATSAMV71-XULT.	
ATSAM4S-EK2	Evaluation kit for Atmel SAM4S Cortex-M4 microcontrollers	
SAM4S Wireless PIR Camera Reference Design Kit	Reference design kit for a low-cost, powerful passive infrared motion detector camera solution based on Atmel SAM4S Cortex-M4 microcontrollers	
SAM4S Xplained	Evaluation platform for Atmel SAM4S Cortex-M4 microcontrollers featuring a SAM4S16C and additional components demonstrating the features of the device	
SAM4S Xplained Pro	For evaluation and prototyping with Atmel SAM4S Cortex-M4 microcontrollers. Available as evaluation kit or starter kit.	
SAM4N Xplained Pro	For evaluation and protoyping with Atmel SAM4N Cortex-M4 microcontrollers. Available as evaluation kit or starter kit.	
ATMEGA-1284P Xplained	MCU board for Atmel megaAVR featuring an ATmega1284P and additional components demonstrating the features of the device	

Atmel Tools - Continued

Evaluation Kits

Product	Description	
XMEGA-A1 Xplained	MCU board for Atmel AVR XMEGA featuring an ATxmega128A1 and additional components demonstrating the features of the device	
XMEGA-A3BU Xplained	MCU board for Atmel AVR XMEGA featuring an ATxmega256A3BU and additional components demonstrating the features of the device	
XMEGA-B1 Xplained	MCU board for Atmel AVR XMEGA featuring an ATxmega128B1 and additional components demonstrating the features of the device	
UC3-L0 Xplained	MCU board for AVR UC3L featuring an AT32UC3L064 and additional components demonstrating the features of the device	
UC3-A3 Xplained	MCU board for Atmel AVR UC3A3 featuring an AT32UC3A3256 and additional components demonstrating the features of the device	
AVRSBIN1	Inertial One sensor board. Add-on board for Atmel AVR Xplained Kits	
AVRSBIN2	Inertial Two sensor board. Add-on board for Atmel AVR Xplained Kits	
AVRSBPR1	Pressure One sensor board. Add-on board for Atmel AVR Xplained Kits	
AVRSBLP1	Light and proximity sensor board. Add-on board for Atmel AVR Xplained Kits	

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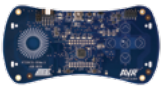
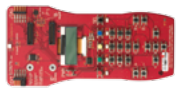
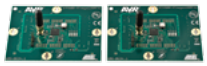
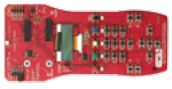
Atmel Tools - Continued

Evaluation Kits

Product	Description	
EVK1101	Evaluation kit for Atmel AVR UC3B 32-bit microcontrollers	
EVK1104	The evaluation kit combines an Atmel 32-bit AVR UC3 microcontroller with a wide selection of communication interfaces, including On-The-Go, SD card and MMC, NAND flash with ECC, and stereo 16-bit DAC.	
EVK1105	The evaluation kit combines an Atmel 32-bit AVR UC3 microcontroller with a wide selection of communication interfaces, including On-The-Go, SD card and MMC, QVGA full color LCD display, light sensor and microphone.	
UC3C-EK	Evaluation kit for the Atmel AVR UC3C 32-bit microcontrollers	
UC3L-EK	Evaluation kit for Atmel AVR UC3L 32-bit microcontrollers	
ATAVRSB200	Battery management development kit for Atmel AVR HVA and HVB devices	
ATAVRSB201	Battery management add-on board for SB200, supporting one or two cell designs based on ATmega16HVA	
ATAVRSB202	Battery management add-on board for SB200, supporting two, three or four cell designs based on ATmega32HVB	
ATBM302-EK	Evaluation kit demonstrating the functionality and performance of the ATBM302 battery management device.	

Atmel Tools - Continued

Evaluation Kits

Product	Description	
RF4CE-EK	Demonstrates Atmel RF4Control - ZigBee RF4CE compliant software stack—in combination with the 2.4GHz single-chip solution ATmega128RFA1	
REB231ED-EK	Evaluation kit and reference design for the Atmel AT86RF231 2.4GHz radio transceiver	
REB231FE2-EK	Evaluation kit and reference design for Atmel AT86RF231 2.4GHz radio transceiver with front end module	
RF231USB-RD	Reference design for the Atmel AT86RF231 and ATSAM3S4BA USB demonstrating RF and USB capabilities	
REB232ED-EK	Evaluation kit and reference design for the Atmel AT86RF232 2.4GHz radio transceiver	
REB233SMAD-EK	Evaluation kit and reference design for the Atmel AT86RF233 2.4GHz radio transceiver	
ATmega128RFA1-EK	Evaluation kit for the Atmel ATmega128RFA1 2.4GHz single-chip solution	
AT256RFR2-EK	Evaluation kit for the ATmega256RFR2 2.4GHz single-ship solution	
RZ600	Evaluation kit for development, debugging, and demonstration of IEEE 802.15.4-compliant wireless applications	

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Atmel Tools - Continued

Starter Kits		
Product	Description	
STK600	Starter kit for Atmel AVR 8- and 32-bit microcontrollers	
AT89STK-05	Starter Kit for the AT89C5130A/AT89C5131A USB microcontrollers	
AT89STK-06	Starter Kit for the AT89C51CC01/AT89C51CC03 CAN microcontrollers	
AT89STK-11	Starter Kit for ISP-standard Flash C51 MCUs: • AT89C51RB2/RC2/IC2 • AT89C51RD2/ED2/ID2 • AT89C51RE2 • AT89LP51RB2/RC2/IC2 • AT89LP51RD2/ED2/ID2	



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