PRODUCT GUIDE

September 1999

AT90 Series AVR® (8-bit Microcontrollers)

Part Number	Processor	Description	Availability
AT90S1200	AVR	AVR RISC, In-System Programmable Microcontroller with 1K Byte Flash and 64 Bytes EEPROM, 20-pin PDIP, 20-pin SOIC and 20-pin SSOP Packages	Now
AT90S2313	AVR	AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash,128 Bytes SRAM, 128 Bytes EEPROM and UART, 20-pin PDIP and 20-pin SOIC Packages	Now
AT90S2323	AVR	AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash,128 Bytes SRAM and 128 Bytes EEPROM, 8-pin PDIP and 8-pin SOIC Packages	Now
AT90LS2323	AVR	Low-voltage, AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM and 128 Bytes EEPROM, 8-pin PDIP and 8-pin SOIC Packages	Now
AT90S2343	AVR	AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM and 128 Bytes EEPROM, 8-pin PDIP and 8-pin SOIC Packages	Now
AT90LS2343	AVR	Low-voltage, AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM and 128 Bytes EEPROM, 8-pin PDIP and 8-pin SOIC Packages	Now
AT90S2333	AVR	AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM, 128 Bytes EEPROM, UART, 6 Channel 10-bit ADC, 28-pin PDIP, 32-pin TQFP Packages	4Q99
AT90LS2333	AVR	Low-voltage, AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM, 128 Bytes EEPROM, UART, 6 Channel, 10-bit ADC, 28-pin PDIP, 32-pin TQFP Packages	4Q99
AT90S4414	AVR	AVR RISC, In-System Programmable Microcontroller with 4K Bytes Flash, 256 Bytes SRAM, 256 Bytes EEPROM, UART, 40-pin PDIP, 44-pin PLCC and 44-pin TQFP Packages	Now
AT90S4433	AVR	AVR RISC, In-System Programmable Microcontroller with 4K Bytes Flash, 128 Bytes SRAM, 256 Bytes EEPROM, UART, 6 Channel, 10-bit ADC, 28-pin PDIP Packages. 32-pin TQFP Packages	Now
AT90LS4433	AVR	Low-voltage, AVR RISC, In-System Programmable Microcontroller with 4K Bytes Flash, 128 Bytes SRAM, 256 Bytes EEPROM, UART, 6 Channel, 10-bit ADC, 28-pin PDIP, 32-pin TQFP Packages	Now
AT90S4434	AVR	AVR RISC, In-System Programmable Microcontroller with 4K Bytes Flash, 256 Bytes SRAM, 256 Bytes EEPROM, UART, 8 Channel, 10-bit ADC, 40-pin PDIP, 44-pin PLCC and 44-pin TQFP Packages	4Q99
AT90LS4434	AVR	Low-voltage, AVR RISC, In-System Programmable Microcontroller with 4K Bytes Flash, 256 Bytes SRAM, 256 Bytes EEPROM, UART, 8 Channel, 10-Bit ADC, 40-pin PDIP, 44-pin PLCC, 44-pin TQFP Packages	4Q99
AT90S8515	AVR	AVR RISC, In-System Programmable Microcontroller with 8K Bytes Flash, 512 Bytes SRAM, 512 Bytes EEPROM, UART, 40-pin PDIP, 44-pin PLCC, 44-pin TQFP Packages	Now
AT90S8535	AVR	AVR RISC, In-System Programmable Microcontroller with 8K Bytes Flash, 512 Bytes SRAM, 512 Bytes EEPROM, UART, 8 Channel, 10-bit ADC, 40-pin PDIP, 44-pin PLCC, 44-pin TQFP Packages	Now
AT90LS8535	AVR	Low-voltage, AVR RISC, In-System Programmable Microcontroller with 8K Bytes Flash 512 Bytes SRAM, 512 Bytes EEPROM, UART, 8 Channel, 10-bit ADC, 40-pin PDIP, 44-pin PLCC, 44-pin TQFP Packages	Now
AT90C8534	AVR	AVR RISC Microcontroller with 8K Bytes Flash, 512 Bytes EEPROM and 256 Bytes SRAM with 6 Channel, 10-bit A/D and 48-pin VQFP Package	Now

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ATtiny Series AVR Flash Microcontroller

Part Number	Processor	Description	Availability
ATtiny 10	AVR	AVR RISC Microcontroller with 1K Byte OTP Flash Memory, 8-pin PDIP and SOIC Packages	1H2000
ATtiny 10L	AVR	2.7-volt, AVR RISC Microcontroller with 1K Byte OTP Flash Memory, 8-pin PDIP and SOIC Packages	1H2000
ATtiny 11	AVR	AVR RISC Microcontroller with 1K Byte Flash Memory, 8-pin PDIP and SOIC Packages	Now
ATtiny 11L	AVR	2.7-volt, AVR RISC Microcontroller with 1K Byte Flash Memory, 8-pin PDIP and SOIC Packages	Now
ATtiny 12	AVR	AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 64 Bytes EEPROM, 8-pin PDIP and SOIC Packages	4Q99
ATtiny 12L	AVR	2.7-volt, AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 64 Bytes EEPROM, 8-pin PDIP and SOIC Packages	4Q99
ATtiny 12V	AVR	1.8-volt, AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 64 Bytes EEPROM, 8-pin PDIP and SOIC Packages	4Q99
ATtiny 15	AVR	AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 64 Bytes EEPROM, 4 Channel, 10-bit ADC, 8-pin PDIP and SOIC Packages	4Q99
ATtiny 15L	AVR	2.7-volt, AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 64 Bytes EEPROM, 4 Channel, 10-bit ADC, 8-pin PDIP and SOIC Packages	4Q99
ATtiny 22	AVR	AVR RISC Microcontroller with 2K Byte In-System Programmable Flash Memory, 128 Bytes EEPROM, 8-pin PDIP and SOIC Packages	Now
ATtiny 22L	AVR	2.7-volt, AVR RISC Microcontroller with 2K Byte In-System Programmable Flash Memory, 128 Bytes EEPROM, 8-pin PDIP and SOIC Packages	Now
ATtiny 28V	AVR	1.8-volt, AVR RISC Microcontroller with 2K Byte Flash Memory, 28-pin PDIP and 32-pin TQFP Packages	4Q99
ATtiny 28L	AVR	2.7-volt, AVR RISC Microcontroller with 2K Byte Flash Memory, 28-pin PDIP and 32-pin TQFP Packages	4Q99

ATmega Series AVR Flash Microcontrollers

Part Number	Processor	Description	Availability
ATmega161	AVR	AVR RISC Microcontroller with 16K Byte In-System and Self Programming Flash Memory, 512 Bytes EEPROM, 1K Bytes SRAM, Dual UART, Hardware Multiplier, 40-pin PDIP, 44-pin PLCC and 44-pin TQFP Packages	1H2000
ATmega161L	AVR	2.7-volt, AVR RISC Microcontroller with 16K Byte In-System and Self Programming Flash Memory, 512 Bytes EEPROM, 1K Bytes SRAM, Dual UART, Hardware Multiplier, 40-pin PDIP, 44-pin PLCC and 44-pin TQFP Packages	1H2000
ATmega163	AVR	AVR RISC Microcontroller with 16K Byte In-System and Self Programming Flash Memory, 1K Bytes EEPROM, 1K Bytes SRAM, UART, 8 Channel, 10-bit ADC, Hardware Multiplier, 40-pin PDIP, 44-pin PLCC and 44-pin TQFP Packages	1H2000
ATmega163L	AVR	2.7-volt, AVR RISC Microcontroller with 16K Byte In-System and Self Programming Flash Memory, 1K Bytes EEPROM, 1K Bytes SRAM, UART, 8 Channel, 10-bit ADC, Hardware Multiplier, 40-pin PDIP, 44-pin PLCC and 44-pin TQFP Packages	1H2000
ATmega603	AVR	AVR RISC, In-System Programmable Microcontroller with 64K Bytes Flash, 4K Bytes SRAM, 2K Bytes EEPROM, UART, RTC, 8 Channel, 10-bit ADC, 64-pin TQFP Package	2H2000
ATmega603L	AVR	Low-voltage, AVR RISC, In-System Programmable Microcontroller with 64K Bytes Flash, 4K Bytes SRAM, 2K Bytes EEPROM, UART, RTC, 8 Channel, 10-bit ADC, 64-pin TQFP Package	2H2000
ATmega103	AVR	AVR RISC, In-System Programmable Microcontroller with 128K Bytes Flash, 4K Bytes SRAM, 2K Bytes EEPROM, UART, RTC, 8 Channel, 10-bit ADC, 64-pin TQFP Package	Now
ATmega103L	AVR	Low-voltage, AVR RISC, In-System Programmable Microcontroller with 128K Bytes Flash, 4K Bytes SRAM, 2K Bytes EEPROM, UART, RTC, 8 Channel, 10-bit ADC, 64-pin TQFP Package	Now

AT90/ATmega Series AVR Development Tools

Part Number	Description	Availability
ATICE200	Low-cost In-circuit Emulator, Supports Same Devices as STK200	Now
ATAVRISP	In-System Programming Cable for the AVR Family, Connects to Serial or Parallel Port of PC	4Q99
ATMCU00100	AT89S/AT90S Flash MCU Starter Kit	Now
ATSTK100	tinyAVR Starter Kit with Programming Support for Tiny Parts, Includes IR Transmitter/Receiver and Piezo Sounder	4Q99
ATSTK200	AT89S/AT90S Flash MCU Starter Kit with A/D Support	Now
ATSTK300	megaAVR™ Starter kit with Application Builder Software	Now
AT90ICEPRO	In-circuit Emulation System for AVR AT90S Microcontrollers	Now
ATmegaICE	In-circuit Emulation System for megaAVR Microcontrollers	Now
ATasicICE	In-circuit Emulation System for Embedded AVR Core Development	Now
AT90ADCPOD	AT90ICEPRO Analog Replacement Kit	Now
ATmegaPOD	ATmegaICE Pod Replacement Kit	Now

AT91 Series (16/32-bit Microcontrollers)

Part Number	Processor	Description	Availability
AT91M40400	ARM7TDMI™	33 MHz, 4K Bytes SRAM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	Now
AT91M40100	ARM7TDMI	40 MHz, 1K Bytes SRAM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	3Q99
AT91M40800	ARM7TDMI	40 MHz, 8K Bytes SRAM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	3Q99
AT91M63200	ARM7TDMI	25 MHz, 2K Bytes SRAM, 6 Timers, 3 USARTs, MPI, SPI, Watchdog, 8-channel PDC, 176-lead TQFP Package	3Q99
AT91M43300	ARM7TDMI	25 MHz, 3K Bytes SRAM, 6 Timers, 3 USARTs, MPI, SPI, Watchdog, 8-channel PDC, 144-lead TQFP Package	3Q99
AT91F40416	ARM7TDMI	25 MHz, 4K Bytes SRAM, 2M Bytes Flash, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 120-lead BGA Package	3Q99
AT91R40807	ARM7TDMI	33 MHz, 8K + 128K Bytes SRAM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	3Q99
AT91M40803	ARM7TDMI	33 MHz, 8K Bytes SRAM, 32K Bytes Mask ROM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	3Q99
AT91M40807	ARM7TDMI	33 MHz, 8K Bytes SRAM, 128K Bytes Mask ROM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	3Q99
AT91M55200	ARM7TDMI	33 MHz, 2K Bytes SRAM, Clock Deactivation, Slow, Standby and Power-down Modes	4Q99
AT91M55800	ARM7TDMI	33 MHz, 8K Bytes SRAM, Clock Deactivation, Slow, Standby and Power-down Modes	4Q99

AT91 Series Development Tools

Part Number	Description	Availability
AT91EB01	AT91 Evaluation Board	Now

AT89 Series (8-bit Microcontrollers)

Part Number	Memory Size	Description	Availability
AT80F51	4K x 8	80C31 Microcontroller with 4K Factory Programmed QuickFlash™	Now
AT80F52	8K x 8	80C32 Microcontroller with 8K Factory Programmed QuickFlash	Now
AT87F51	4K x 8	80C31 Microcontroller with 4K OTP QuickFlash	Now
AT87F52	8K x 8	80C32 Microcontroller with 8K OTP QuickFlash	Now
AT87F55	20K x 8	80C32 Microcontroller with 20K OTP QuickFlash	Now
AT87F51RC	32K x 8	80C31 Microcontroller with 32K OTP QuickFlash	Now
AT89C51	4K x 8	80C31 Microcontroller with 4K bytes Flash	Now
AT89LV51	4K x 8	2.7-volt, 80C31 Microcontroller with 4K Bytes Flash	Now
AT89C52	8K x 8	80C32 Microcontroller with 8K Bytes Flash	Now
AT89LV52	8K x 8	2.7-volt, 80C32 Microcontroller with 8K Bytes Flash	Now
AT89C1051U	1K x 8	80C31 Microcontroller with 1K Bytes Flash, 20-pin Package	Now
AT89C2051	2K x 8	80C31 Microcontroller with 2K Bytes Flash, 20-pin Package	Now
AT89C4051	4K x 8	80C31 Microcontroller with 4K Bytes Flash, 20-pin Package	Now
AT89S8252	8K x 8	In-System Programmable Microcontroller with 8K Bytes Flash and 2K Bytes EEPROM	Now
AT89LS8252	8K x 8	Low-voltage, In-System Programmable Microcontroller with 8K Bytes Flash and 2K Bytes EEPROM	Now
AT89S53	12K x 8	In-System Programmable Microcontroller with 12K Bytes Flash	Now
AT89LS53	12K x 8	Low-voltage, In-System Programmable Microcontroller with 12K Bytes Flash	Now
AT89C55	20K x 8	80C32 Microcontroller with 20K Bytes Flash	Now
AT89LV55	20K x 8	2.7-volt, 80C32 Microcontroller with 20K Bytes Flash	Now
AT89S4D12	128K x 8	80C31 Microcontroller with 4K Bytes Flash Program and 128K Bytes Flash Data Memory	Now

FPGA Serial Configuration EEPROM

Part Number	Memory Size	Description	Availability
Standard Voltage (5.0V)			
AT17C65	65,536 x 1	65K-bit FPGA Configuration EEPROM	Now
AT17C65A	65,536 x 1	65K-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17C128	131,072 x 1	128K-bit FPGA Configuration EEPROM	Now
AT17C256	262,144 x 1	256K-bit FPGA Configuration EEPROM	Now
AT17C256A	262,144 x 1	256K-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17C512	524,288 x 1	512K-bit FPGA Configuration EEPROM	Now
AT17C512A	524,288 x 1	512K-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17C010	1,048,576 x 1	1M-bit FPGA Configuration EEPROM	Now
AT17C010A	1,048,576 x 1	1M-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17C020	2,097,152 x 1	2M-bit FPGA Configuration EEPROM	Now
AT17C020A	2,097,152 x 1	2M-bit FPGA Configuration EEPROM, Altera Pinout	Now
Low-voltage (3.3V)			
AT17LV65	65,536 x 1	65K-bit FPGA Configuration EEPROM, 3.3-volt	Now
AT17LV65A	65,536 x 1	65K-bit FPGA Configuration EEPROM, 3.3-volt, Altera Pinout	Now
AT17LV128	131,072 x 1	128K-bit FPGA Configuration EEPROM, 3.3-volt	Now
AT17LV256	262,144 x 1	256K-bit FPGA Configuration EEPROM, 3.3-volt	Now
AT17LV256A	262,144 x 1	256K-bit FPGA Configuration EEPROM, 3.3-volt, Altera Pinout	Now
AT17LV512	524,288 x 1	512K-bit FPGA Configuration EEPROM, 3.3-volt	Now
AT17LV512A	524,288 x 1	512K-bit FPGA Configuration EEPROM, 3.3-volt, Altera Pinout	Now
AT17LV010	1,048,576 x 1	1M-bit FPGA Configuration EEPROM, 3.3-volt	Now
AT17LV010A	1,048,576 x 1	1M-bit FPGA Configuration EEPROM, 3.3-volt, Altera Pinout	Now
AT17LV020	2,097,152 x 1	2M-bit FPGA Configuration EEPROM, 3.3-volt	Now
AT17LV020A	2,097,152 x 1	2M-bit FPGA Configuration EEPROM, Altera Pinout	Now

FPGAs – AT6000

Part Number	Registers	Usable Gates	Frequency	Description	Availability
Standard Voltage (5.0V)					
AT6002	1,024	6K	350 MHz	96 I/O Pins, 5-volt, Very Low Power	Now
AT6003	1,600	9K	350 MHz	120 I/O Pins, 5-volt, Very Low Power	Now
AT6005	3,136	15K	350 MHz	140 I/O Pins, 5-volt, Very Low Power	Now
AT6010	6,400	30K	350 MHz	204 I/O Pins, 5-volt, Very Low Power	Now
Low-voltage (3.3V)					
AT6002LV	1,024	6K	250 MHz	96 I/O Pins, 3.3-volt, Very Low Power	Now
AT6003LV	1,600	9K	250 MHz	120 I/O Pins, 3.3-volt, Very Low Power	Now
AT6005LV	3,136	15K	250 MHz	140 I/O Pins, 3.3-volt, Very Low Power	Now
AT6010LV	6,400	30K	250 MHz	204 I/O Pins, 3.3-volt, Very Low Power	Now

FPGAs – AT40K

Part Number	Registers	Usable Gates	Frequency	RAM	Description	Availability
Standard Voltage (5.0V)						
AT40K05	256	5K - 10K	250 MHz	2,048 Bits	128 I/O Pins, 5-volt, Very Low Power	Now
AT40K10	576	10K - 20K	250 MHz	4,096 Bits	192 I/O Pins, 5-volt, Very Low Power	Now
AT40K20	1,024	20K - 30K	250 MHz	8,192 Bits	256 I/O Pins, 5-volt, Very Low Power	Now
AT40K40	2,304	40K - 50K	250 MHz	18,432 Bits	384 I/O Pins, 5-volt, Very Low Power	Now
Low-voltage (3.3V)						
AT40K05LV	256	5K - 10K	250 MHz	2,048 Bits	128 I/O Pins, 3.3-volt, Very Low Power	Now
AT40K10LV	576	10K - 20K	250 MHz	4,096 Bits	192 I/O Pins, 3.3-volt, Very Low Power	Now
AT40K20LV	1,024	20K - 30K	250 MHz	8,192 Bits	256 I/O Pins, 3.3-volt, Very Low Power	Now
AT40K40LV	2,304	40K - 50K	250 MHz	18,432 Bits	384 I/O Pins, 3.3-volt, Very Low Power	Now
Low-voltage Enhanced Performance (3.3 to 2.5V)						
AT40K05AL	512	5K - 10K	250 MHz	2,048 Bits	128 I/O Pins, 3.3-volt, Very Low Power	4Q99
AT40K10AL	896	10K - 20K	250 MHz	4,096 Bits	192 I/O Pins, 3.3-volt, Very Low Power	4Q99
AT40K20AL	1,440	20K - 30K	250 MHz	8,192 Bits	256 I/O Pins, 3.3-volt, Very Low Power	4Q99
AT40K40AL	2,690	40K - 50K	250 MHz	18,432 Bits	384 I/O Pins, 3.3-volt, Very Low Power	4Q99
AT40K80AL	5,120	80K - 100K	250 MHz	32,768 Bits	512 I/O Pins, 3.3-volt, Very Low Power	4Q99
AT40K125AV	7,680	125K - 150K	250 MHz	51,200 Bits	640 I/O Pins, 3.3-volt, Very Low Power	1Q2000

FPGA Design Development Software

FPGA design tools are available across a broad range of CAE tool vendors and PC and workstation platforms. Design methods supported include: schematic capture, logic synthesis (VHDL and Verilog), PLD entry, (ABEL and CUPL), and automatic component generation of hard macros for user-parametrized structured logic (arithmetic elements, counters, registers, encoders, decoders, and other common functions). Refer to current Configurable Logic Data Book.

CAE Tool Support:

Cadence®, Everest, Exemplar, Mentor Graphics, OrCAD®, Synopsys®, Synario, Synplicity®, Veribest, Verilog®, ViewLogic.

Platform Support:

PC (Windows® 95/98, Windows NT®), Sun Workstations, HP Workstations.

ASIC FPSCIC

Atmel can embed 5K - 50K gates of AT40K FPGA into an ASIC. Contact your nearest sales office for more details.

PLDs

Part Number	Packages	Speeds	Description	Availability
5-volt Electrically Erasable				
ATF16V8B	20-pin	10 - 15 ns	8 FFs, 8 I/O Pins, Standard-power	Now
ATF16V8BQ(L)	20-pin	10 - 15 ns	8 FFs, 8 I/O Pins, Quarter-power, Low-power	Now
ATF16V8C	20-pin	5 - 7.5 ns	8 FFs, 8 I/O Pins, Standard-power	Now
ATF16V8CZ	20-pin	12 - 15 ns	8 FFs, 8 I/O Pins, Zero-power	Now
ATF20V8B	24, 28-pin	7.5 - 15 ns	8 FFs, 8 I/O Pins, Standard-power	Now
ATF20V8BQ(L)	24, 28-pin	10 - 15 ns	8 FFs, 8 I/O Pins, Quarter-power, Low-power	Now
ATF20V8C	24, 28-pin	5 - 7 ns	8 FFs, 8 I/O Pins, Standard-power	4Q99
ATF20V8CZ	24, 28-pin	12 - 15 ns	8 FFs, 8 I/O Pins, Zero-power	4Q99
ATF22V10B	24, 28-pin	15 - 15 ns	10 FFs, 10 I/O Pins, Standard-power	Now
ATF22V10BQ(L)	24, 28-pin	15 - 15 ns	10 FFs, 10 I/O Pins, Quarter-power, Low-power	Now
ATF22V10C	24, 28-pin	5 - 10 ns	10 FFs, 10 I/O Pins, Standard-power	Now
ATF22V10CZ	24, 28-pin	12 - 15 ns	10 FFs, 10 I/O Pins, Zero-power	Now
ATF750C(L)	24, 28-pin	7.5 - 15 ns	20 FFs, 10 I/O Pins, Standard and Low-power	Now
ATF750LVC(L)	24, 48-pin	12 - 25 ns	20 FFs, 10 I/O Pins, 3-volt and 3-volt Low-power	Now
ATF2500C(L)	40, 44-pin	20 - 25 ns	48 FFs, 24 I/O Pins, Standard and Low-power	4Q99
ATF2500CQ(L)	40, 44-pin	20 - 25 ns	48 FFs, 24 I/O Pins, Quarter-power, Low-power	4Q99
ATF1500(L)	44-pin	7.5 - 25 ns	32 Macrocell, Standard and Low-power	Now
ATF1500A(L)	44-pin	7.5 - 25 ns	32 Macrocell, Standard and Low-power	Now
ATF1502AS(L)	44-pin	7.5 - 25 ns	32 Macrocell with ISP, Standard and Low-power	3Q99
ATF1504AS(L)	44, 68, 84, 100-pin	7.5 - 25 ns	64 Macrocell with ISP, Standard and Low-power	Now
ATF1508AS(L)	84, 100, 160-pin	7.5 - 25 ns	128 Macrocell with ISP, Standard and Low-power	Now
ATF1516AS(L)	160, 192, 208-pin	7.5 - 25 ns	256 Macrocell with ISP, Standard and Low-power	1Q2000
Low-voltage (3.0V) Electrically Erasable				
ATF16LV8C	20-pin	10 - 15 ns	8 FFs, 8 I/O Pins, Low-voltage	Now
ATF16LV8CZ	20-pin	15 - 25 ns	8 FFs, 8 I/O Pins, Low-voltage, Zero-power	TBA
AT22LV10(L)	24, 28-pin	20 - 30 ns	10 FFs, 10 I/O Pins, Low-voltage and Low-power (EPROM-based)	Now
ATF750LVC(L)	24, 28-pin	10 - 25 ns	20 FFs, 10 I/O Pins, Low-voltage and Low-power	3Q99
ATF1500ABV	44-pin	12 - 15 ns	32 FFs, 32 I/O Pins, Low-voltage	Now
ATF1502ASV(L)	44-pin	12 - 25 ns	32 FFs, 32 I/O Pins, Low-voltage and Low-power	3Q99
ATF1504ASV(L)	44, 68, 84, 100-pin	12 - 25 ns	64 macrocells with ISP, 3-volt and low-power	Now
ATF1508ASV(L)	84, 100, 160-pin	12 - 25 ns	128 macrocells with ISP, 3-volt and low-power	Now
ATF22LV10C	24, 28-pin	10 - 15 ns	10 FFs, 10 I/O Pins, Low-voltage	Now
ATF22LV10CZ	24, 28-pin	25 ns	10 FFs, 10 I/O Pins, Low-voltage, Zero-power	Now
5-volt EPROM-based				
ATV750(L)	24, 28-pin	20 - 25 ns	20 FFs, 10 I/O Pins, Standard and Low-power	Now
ATV750B(L)	24, 28-pin	7.5 - 25 ns	20 FFs, 10 I/O Pins, Standard and Low-power	Now
ATV2500B(L)	44-pin	12 - 20 ns	48 FFs, 24 I/O Pins, Standard and Low-power	Now
ATV2500BQ(L)	40, 44-pin	20 - 25 ns	48 FFs, 24 I/O Pins, Quarter-power, Low-power	Now

PLD Tools – Software and Hardware

Part Number	Description	Availability
ATDS1100PC	Atmel – Synario Entry (Includes ABEL, Schematic Entry, Simulation)	Now
ATDS1120PC	Atmel – Synario Verilog Simulation	Now
ATDS1130PC	Atmel – Synario VHDL Synthesis	Now
ATDS1140PC	Atmel – Synario VHDL Simulation	Now
ATDS1150VPC	Atmel – ISP Kit (3V or 5V)	Now
ATDS1160VPC	Atmel – ISP Programming Board (3V or 5V)	Now
ATDS1161PC	Atmel – 44-pin PLCC Adaptor Board	Now
ATDS1162PC	Atmel – 44-pin TQFP Adaptor Board	Now
ATDS1163PC	Atmel – 68-pin PLCC Adaptor Board	Now
ATDS1164PC	Atmel – 100-pin PQFP Adaptor Board	Now
ATDS1165PC	Atmel – 100-pin TQFP Adaptor Board	Now
ATDS1166PC	Atmel – 160-pin PQFP Adaptor Board	Now

Gate Arrays/Embedded Arrays

Device Name	Gates	Pins	Description	Availability
ATL18 Series	15M	Up to 1400	0.18-micron CMOS Gate Array/Embedded Array, 1.8-volt Operation, 30 Versions with Various Pin and Gate Counts, Memory, Megacells	1H2000
ATL25 Series	Up to 6.9M	Up to 976	0.25-micron CMOS Gate Array/Embedded Array, 1.0 to 2.5-volt Operation, 23 Versions with Various Pin and Gate Counts, Memory, Megacells	Now
ATL25/E^2 Series	Up to 6.9M	Up to 976	0.25-micron CMOS Embedded Array Combining Logic and EEPROM Memory, 2.5-volt Operation, Various Gate Counts, Megacells and Memory Configuration. Up to 4M-bit EEPROM Memory	1H2000
ATL25/Flash Series	Up to 6.9M	Up to 976	0.25-micron CMOS Embedded Array Combining CMOS Logic and Flash Memory, 2.5-volt Operation. Various Gate Counts, Megacells and Memory Configuration. Up to 64M-bit Flash Memory	1H2000
ATL35 Series	Up to 2.7M	Up to 976	0.35-micron CMOS Gate Array/Embedded Array, 1.0-volt to 3.3-volt Operation, 23 Versions with Various Pin and Gate Counts, Memory, Megacells	Now
ATL35/E^2 Series	Up to 2.7M	Up to 976	0.35-micron Embedded Array combining CMOS Logic and EEPROM Memory, 2.5-volt Operation, Various Gate Counts, Megacells, and Memory Configurations. Up to 1M-bit EEPROM Memory	2H99
ATL35/Flash Series	Up to 2.7M	Up to 976	0.35-micron Embedded Array Combining CMOS Logic and Flash Memory, 2.0 and 3.3-volt Operation, Various Gate Counts, Megacells and Memory Configurations. Up to 32M-bit Flash Memory	2H99
ATL50 Series	Up to 590K	Up to 480	0.5-micron CMOS Gate Array/Embedded Array, 2.0-volt and 3.3-volt Voltage Operation, 16 Versions with Various Pin and Gate Counts, Memory, Megacells	Now
ATL50/E^2 Series	Up to 1.9M	Up to 684	0.5-micron Embedded Array Combining CMOS Logic with EEPROM Memory, 2.0 and 3.3-volt Operation, Various Gate Counts, Megacells and Memory Configurations. Up to 256K-bit EEPROM Memory	Now
ATLS60 Series	Up to 88K	Up to 256	0.6-micron CMOS Gate Array/Embedded Array, 3.3-volt and 5.0-volt Operation, Staggered Row Bond Pads, 8 Versions with Various Pin and Gate Counts, Memory, Megacells	Now
ATL60 Series	Up to 590K	Up to 480	0.6-micron CMOS Gate Array/Embedded Array, 3.3-volt and 5.0-volt Operation, 16 Versions with Various Pin and Gate Counts, Memory, Megacells	Now
Megacells			ARM7TDMI™, AVR® (8-bit RISC) 80C51, OakDSPCore™, LodeDSPCore™, Ethernet MAC, USB Cores, PCI Cores, CAN, plus others	Now
Memory			Flash, EEPROM, SRAM, ROM, Dual Port SRAM, FIFO and CAM	Now
I/O Interfaces			CMOS, TTL, LVDS, PCI, USB, SCSI, LVD SCSI, PLL	Now

Cell-based ICs

Part Number	Description	Availability
ATC50	0.5-micron 3-layer Metal CMOS, 3.3-volt Operation, Digital, Memory, MCU/DSP Cores, Peripherals, Analog, Macrocells	Now
ATC50/E^2	0.5-micron 3-layer Metal CMOS with Embedded EEPROM, 3.3-volt Operation	Now
ATC35	0.35-micron 3/5-layer Metal CMOS, 3.3-volt to 1.8-volt Operation, Digital, Memory, MCU/DSP Cores, Peripherals, Analog, Macrocells	Now
ATC35/E^2	0.35-micron 3/5-layer Metal CMOS with Embedded EEPROM, 3.3-volt to 1.8-volt Operation	2H99
ATC35/Flash	0.35-micron 3/5-layer Metal CMOS with Embedded Flash, 3.3-volt to 1.8-volt Operation	2H99
ATC25	0.25-micron 3/5-layer Metal CMOS, 2.5-volt to 0.9-volt Operation, Digital, Memory, MCU/DSP Cores, Peripherals, Analog, Macrocells	Now
ATC25/Flash	0.25-micron 3/5-layer Metal CMOS with Embedded Flash, 2.5-volt to 0.9-volt Operation	2H2000
ATC18	0.18-micron 4/6-layer Metal CMOS, 1.8-volt to 0.9-volt Operation	1H2000
ATC18/Flash	0.18-micron 4/6-layer Metal CMOS with Embedded Flash, 1.8-volt to 0.9-volt Operation	1H2001
Memory Blocks	RAM, Dual-port RAM, ROM, Flash, EEPROM	Now
MCU/DSP Cores	ARM7TDMI™ (ARM® Thumb®), AVR®, OakDSPCore™, mAgic Modular VLIW Computation Core	Now
ARM7TDMI-compatible 32-bit Peripherals	Bus Interface, Arbiter, Advanced Memory Controller, AMBA Bridge, Advanced Interrupt Controller, Real Time Clock, Watchdog Timer, USART, Timer Counter, Serial Peripheral Interface	Now
AVR-compatible 8-bit Peripherals	Real Time Clock, Serial Peripheral Interface, Timer Counter, UART	Now
Analog Cells	A/D, D/A, OpAmp, Comp, PLL, Oscillator	Now
Macrocells	AT40K FPGA, AT8032, AT14818, AT16450, PCI, SPI, USB, CAN 2B, Ethernet MAC, I^2C, Codec	Now

Storage Products

Part Number	Description	Package	Availability
Hard Disk Drive			
AT78C1000	Hard Disk Drive Manager (HDDM/Servo System)	128-lead TQFP	Now
AT78C1001 (Core)	HDDM Core	N/A	N/A
Digital Video Drive			
AT78C1501	DVD-RAM Interface Controller Ultra DMA 33 MB/s	208-lead TQFP	4Q99
AT78C1502	DVD-RAM Servo Controller	128-lead TQFP	4Q99
AT78C1503	DVD-RAM Read Channel 160-M-bits	100-lead TQFP	4Q99
AT78C1504	DVD-RAM Laser Power Controller	48-lead TQFP	4Q99
AT78C1505	DVD-RAM Read Pre-Amp	48-lead TQFP	Now
High-capacity Floppy			
AT78C1201	Full Custom Mixed Signal + Flash	128-lead TFP	Now

Wireless

Part Number	Description	Package	Availability
AT76C501	802.11 MAC Integrated ARM® Thumb® with PCMCIA Bus Interface	144-lead TQFP	Now
AT76C502	802.11B (FAST-VNET) 11-Mbit/second MAC with Integrated ARM with PCMCIA Interface	144-lead TQFP	4Q99
AT76C503	802.11B (FAST-VNET) 11-Mbit/second MAC with Integrated ARM with USB Interface	128-lead PQFP	4Q99
AT76C510	802.11 Access Point (VNET-B) 802.11/802.3	128-lead PQFP	4Q99
AT76C551	Bluetooth Short Range Wireless Connectivity (10m Distance)	Module	4Q99
AT76C901	IP Telephony Chip (Voice-Over-IP) for Business Telephones (Wireless over 802.11)	TBD	2Q2000

Wireline

Part Number	Description	Package	Availability
AT76C701	10/100-Mbit/second Ethernet PHY. IEEE 802.3 and 100 Base-TX Compliant	64-lead TQFP	4Q99
AT76C910	IP Telephony Chip (Voice-Over-IP) for Business Telephones (Includes Two 10/100 MACs)	TBD	1Q2000

Multimedia

Part Number	Description	Package	Availability
AT76C301	H.324 Video Conferencing H.263, G.723 Compliant	208-lead PQFP	Now
AT76C302	H.324, H.320, H.323 Video Conferencing H.22X, H.24X, H.263, G.723 Compliant	208-lead PQFP	4Q99
AT76C202	24-bit DSP for Decoding AC-3, Pro-Logic, MPEG-2 and MPEG-1, Layer 1 and 2 Encoding/Decoding for Super VCD Applications	100-lead TQFP	4Q99
AT76C351	MPEG-2 Video/Audio Decoder (Ikones™)	208-lead PQFP	2Q2000
AT76C110	Digital Camera Single Chip	280-lead Flex BGA	4Q99
AT76C711	USB to UART Bridge/Controller (Integrated AVR)	64-lead TQFP	4Q99

Secure ICs for Smart Cards – Memory

Part Number	Memory Size	Description	Availability
AT88SC101	1024 x 1	1K-bit Serial EEPROM with Security, 1 Memory Zone, 1024 Bits	Now
AT88SC102	1024 x 1	1K-bit Serial EEPROM with Security, 2 Memory Zones, 512 Bits Each	Now
AT88SC153	192 x 8	1.5K-bit Serial EEPROM with Security and Authentication, 3 Memory Zones, 512 Bits Each	Now
AT88SC1601	15,872 x 1	16K-bit Serial EEPROM with Security, 1 Memory Zone, 15,872 Bits	Now
AT88SC1604	15,968 x 1	16K-bit Serial EEPROM with Security, 3 Memory Zones, 4096 Bits Each, and 1 Memory Zone, 3680 Bits	Now
AT88SC1608	2048 x 8	16K-bit Serial EEPROM with Security and Authentication, 8 Memory Zones, 2048 Bits Each, and 1 Configuration Zone, 1024 Bits	Now

Secure ICs for Smart Cards – Microcontrollers

Part Number	Flash	EEPROM	RAM	T = 0 Hardware	Power Supply	Availability
AT89SC168	16K Bytes	8K Bytes	256 Bytes	Yes	5.0V	Now
AT89SC168A	16K Bytes	8K Bytes	512 Bytes	No	2.7 - 5.5V	Now
AT89SC1616A	16K Bytes	16K Bytes	512 Bytes	No	2.7 - 5.5V	Now
AT89SC248A	24K Bytes	8K Bytes	512 Bytes	No	2.7 - 5.5V	3Q99
AT90SC3232	32K Bytes	32K Bytes	1.5K Bytes	No	3.0 - 5.0V	Now

Secure ICs for Smart Cards – Cryptocontrollers

Part Number	Program Memory	User Memory Flash/EEPROM	RAM	Power Supply	Crypto Engine	RF Interface	Availability
AT90SC1616C	16K Flash	16K Bytes	1K Bytes	3.0 - 5.0V	Yes	No	Now
AT90SC3232C	32K Flash	32K Bytes	1K Bytes	3.0 - 5.0V	Yes	No	Now
AT90SC6464C	64K Flash	64K Bytes	2.5K Bytes	3.0 - 5.0V	Yes	No	4Q99

Development Tools

Part Number	Description	Availability
AT89SC SDK	AT89SC Smart Card Development Kit (For all AT89SC Products)	Now
AT90SC SDK	AT90SC Smart Card Development Kit (For all AT90SC Products)	Now

Secure ICs for Smart Cards – Contactless (RFID)

Part Number	EEPROM Memory	Features	Availability
AT88RF256/125	256 x 1	125 kHz Read/Write RFID Transponder with Passwords and Data Locking	4Q99
AT88RF256/13	256 x 1	13.56 MHz ISO 14443 Read/Write RFID Transponder	Now
AT88RF8714	2K x 8	Contactless Card IC with AVR Microprocessor, 8K Bytes ROM, 256 Bytes SRAM	1H2000
AT24RF08	1K x 8	Dual Access EEPROM: RFID and Serial	Now

Secure ROM Microcontrollers

Part Number	Memory Configuration ROM/RAM/EEPROM (Bytes)	Description	Security Features	Operating Voltage 5V	Operating Voltage 3V	Availability
AT05SC2308 (MSC0402)	23K/384/8K	8-bit Smart Chip	Advanced Physical Security, “Out of Bounds” Detectors, Watchdog, RNG, Control Bytes, Accumulator and Index Register Clearing	4.5 - 5.5V	2.7 - 3.3V	Now
AT05SC0901 (MSC0406)	9K/240/1K	8-bit Smart Chip	Advanced Physical Security, “Out of Bounds” Detectors, Watchdog, RNG, Control Bytes	4.5 - 5.5V	2.7 - 3.3V	Now
AT05SC2304 (MSC0407)	23K/384/4K	8-bit Smart Chip	Advanced Physical Security, “Out of Bounds” Detectors, Watchdog, RNG, Control Bytes, Accumulator and Index Register Clearing	4.5 - 5.5V	2.7 - 3.3V	Now
AT05SC2004C (MSC0501)	20K/896/4K	8-bit Smart Chip with Dedicated Encryption Co-processor	Advanced Physical Security, “Out of Bounds” Detectors, Watchdog, RNG, Control Bytes, Accumulator and Index Register Clearing	4.5 - 5.5V	2.7 - 3.3V	Now
AT05SC2004RF (MSC0801)	20K/256/4K	8-bit Smart Chip with Contact/ Contactless Interface	Advanced Physical Security, “Out of Bounds” Detectors, Watchdog, RNG, DES RAM, Control Bytes, Accumulator and Index Register Clearing, 1-32 Byte Program and Erase	4.5 - 5.5V	2.7 - 3.3V	Now

Part Numbers: Please note that as we are now part of Atmel Smart Card ICs, we have taken the opportunity to renumber our chips in line with Atmel’s existing part numbering system. Although the numbers are new, the chip with all its features and capabilities remains exactly the same as the Motorola part number that it replaces.

DataFlash®

Part Number	Speed	Density	Description	Availability
Battery-Voltage **(2.7 to 3.6V)**				
AT45DB011	13 MHz	1M-bit	2.7-volt Only Serial-interface Flash with One 264-byte SRAM Buffer	Now
AT45DB021	5 MHz	2M-bit	2.7-volt Only Serial-interface Flash with Two 264-byte SRAM Buffers	Now
AT45DB041	5 MHz	4M-bit	2.7-volt Only Serial-interface Flash with Two 264-byte SRAM Buffers (Use AT45DB041A for New Designs)	Now
AT45DB041A	15 MHz	4M-bit	2.7-volt Only Serial-interface Flash with Two 264-byte SRAM Buffers	4Q99
AT45DB081	10 MHz	8M-bit	2.7-volt Only Serial-interface Flash with Two 264-byte SRAM Buffers	Now
AT45DB161	13 MHz	16M-bit	2.7-volt Only Serial-interface Flash with Two 528-byte SRAM Buffers	Now
AT45DB321	13 MHz	32M-bit	2.7-volt Only Serial interface Flash with Two 528-byte SRAM Buffers	Now
Standard Voltage (5.0V)				
AT45D011	15 MHz	1M-bit	5.0-volt Only Serial-interface Flash with One 264-byte SRAM Buffer	Now
AT45D021	10 MHz	2M-bit	5.0-volt Only Serial-interface Flash with Two 264-byte SRAM Buffers	Now
AT45D041	5 MHz	4M-bit	5.0-volt Only Serial-interface Flash with Two 264-byte SRAM Buffers (Use AT45D041A for New Designs)	Now
AT45D041A	15 MHz	4M-bit	5.0-volt Only Serial-interface Flash with Two 264-byte SRAM Buffers	4Q99
AT45D081	10 MHz	8M-bit	5.0-volt Only Serial-interface Flash with Two 264-byte SRAM Buffers	Now
AT45D161	15 MHz	16M-bit	5.0-volt Only Serial-interface Flash with Two 528-byte SRAM Buffers	Now

Flash

Part Number	Organization	Speeds	Description	Availability
***Battery-Voltage* (2.7 to 3.6V Single-voltage Read and Write)**				
AT29BV010A	128K x 8	200 - 250 ns	1M-bit, 2.7-volt Small Sectored Flash	Now
AT29BV020	256K x 8	250 ns	2M-bit, 2.7-volt Small Sectored Flash	Now
AT29BV040A	512K x 8	250 ns	4M-bit, 2.7-volt Small Sectored Flash	Now
AT49BV512	64K x 8	90 - 120 ns	512K-bit, 2.7-volt Boot Flash	Now
AT49BV010(1)	128K x 8	120 - 150 ns	1M-bit, 2.7-volt Boot Flash	Now
AT49HBV010(1)	128K x 8	90 - 150 ns	1M-bit, 2.7-volt Boot Flash (High-speed)	Now
AT49BV001(N)(T)	128K x 8	90 - 120 ns	1M-bit, 2.7-volt Parametric Flash (No Reset, Top Boot)	Now
AT49BV020(1)	256K x 8	120 - 150 ns	2M-bit, 2.7-volt Boot Flash	Now
AT49BV002(N)(T)	256K x 8	90 - 120 ns	2M-bit, 2.7-volt Parametric Flash (No Reset, Top Boot)	Now
AT49BV2048A	128K x 16	120 - 150 ns	2M-bit, 2.7-volt Parametric Flash	Now
AT49BV040(T)	512K x 8	150 - 200 ns	4M-bit, 2.7-volt Boot Flash (Top Boot)	Now
AT49BV4096A	256K x 16 / 512K x 8	120 - 200 ns	4M-bit, 2.7-volt Parametric Flash	Now
AT49BV080(T)(1)	1M x 8	120 - 150 ns	8M-bit, 2.7-volt Boot Flash (Top Boot)	Now
AT49BV008A(T)	1M x 8	120 - 150 ns	8M-bit, 2.7-volt Parametric Flash	Now
AT49BV8192A(T)	512K x 16 / 1M x 8	120 - 200 ns	8M-bit, 2.7-volt Parametric Flash (Top Boot)	Now
AT49BV8011	512K x 16 / 1M x 8	90 - 120 ns	8M-bit, 2.7-volt Sectored/Concurrent Flash	Now
AT49BV1604(T)	1M x 16	90 - 120 ns	16M-bit, 2.7-volt Sectored/Concurrent Flash (Top Boot)	Now
AT49BV1614(T)	2M x 8 / 1M x 16	90 - 120 ns	16M-bit, 2.7-volt Sectored/Concurrent Flash (Top Boot)	Now
AT49BV3208	2M x 16	90 - 120 ns	32M-bit, 2.7-volt Sectored/Concurrent Flash	1Q2000
Low-voltage (3.0 to 3.6V Single-voltage Read and Write)				
AT29LV256	32K x 8	150 - 250 ns	256K-bit, 3-volt Small Sectored Flash	Now
AT29LV512	64K x 8	150 - 250 ns	512K-bit, 3-volt Small Sectored Flash	Now
AT29LV010A	128K x 8	150 - 250 ns	1M-bit, 3-volt Small Sectored Flash	Now
AT29LV1024	64K x 16	150 - 250 ns	1M-bit, 3-volt Small Sectored Flash	Now
AT29LV020	256K x 8	200 - 250 ns	2M-bit, 3-volt Small Sectored Flash	Now
AT29LV040A	512K x 8	200 - 250 ns	4M-bit, 3-volt Small Sectored Flash	Now
AT49LV010(1)	128K x 8	120 - 150 ns	1M-bit, 3-volt Boot Flash	Now
AT49HLV010(1)	128K x 8	90 ns	1M-bit, 3-volt Boot Flash (High-speed)	Now
AT49LV001(N)(T)	128K x 8	70 - 120 ns	1M-bit, 3-volt Parametric Flash (No Reset, Top Boot)	Now
AT49LV020(1)	256K x 8	90 - 150 ns	2M-bit, 3-volt Boot Flash	Now
AT49LV002(N)(T)	256K x 8	70 - 120 ns	2M-bit, 3-volt Parametric Flash (No Reset, Top Boot)	Now
AT49LV2048(1)(2)	128K x 16	120 - 150 ns	2M-bit, 3-volt Parametric Flash	Now
AT49LV040(T)	512K x 8	90 - 200 ns	4M-bit, 3-volt Boot Flash (Top Boot)	Now
AT49LV4096(1)(2)	256K x 16	120 - 150 ns	4M-bit, 3-volt Parametric Flash	Now
AT49LV080(T)(1)(2)	1M x 8	120 - 150 ns	8M-bit, 3-volt Boot Flash (Top Boot)	Now
AT49LV008(1)(2)	1M x 8	120 - 150 ns	8M-bit, 3-volt Boot Flash	Now
AT49LV8192(T)(1)(2)	512K x 16	120 - 150 ns	8M-bit, 3-volt Parametric Flash (Top Boot)	Now

Notes: 1. Not recommended for new designs.
2. Please refer to 2.7 - 3.6V *Battery-Voltage* device.

Flash (Continued)

Part Number	Organization	Speeds	Description	Availability
Standard Voltage (4.5 to 5.5V Single-voltage Read and Write)				
AT29C256	32K x 8	70 - 150 ns	256K-bit, 5-volt Small Sectored Flash	Now
AT29C257	32K x 8	70 - 150 ns	256K-bit, 5-volt Small Sectored Flash	Now
AT29C512	64K x 8	70 - 150 ns	512K-bit, 5-volt Small Sectored Flash	Now
AT29C010A	128K x 8	70 - 150 ns	1M-bit, 5-volt Small Sectored Flash	Now
AT29C1024	64K x 16	70 - 150 ns	1M-bit, 5-volt Small Sectored Flash	Now
AT29C020	256K x 8	90 - 150 ns	2M-bit, 5-volt Small Sectored Flash	Now
AT29C040A	512K x 8	100 - 200 ns	4M-bit, 5-volt Small Sectored Flash	Now
AT49F512	64K x 8	70 - 90 ns	512K-bit, 5-volt Boot Flash	Now
AT49F516	32M x 16	55 - 70 ns	512K-bit, 5-volt Boot Flash	Now
AT49F010[(1)]	128K x 8	70 - 120 ns	1M-bit, 5-volt Boot Flash	Now
AT49HF010[(1)]	128K x 8	45 - 55 ns	1M-bit, 5-volt Boot Flash (High-speed)	Now
AT49F001(N)(T)	128K x 8	55 - 120 ns	1M-bit, 5-volt Parametric Flash (No Reset, Top Boot)	Now
AT49F1024	64K x 16	45 - 90 ns	1M-bit, 5-volt Boot Flash	Now
AT49F1025	64K x 16	45 - 90 ns	1M-bit, 5-volt Boot Flash	Now
AT49F020	256K x 8	70 - 120 ns	2M-bit, 5-volt Boot Flash	Now
AT49F002(N)(T)	256K x 8	55 - 120 ns	2M-bit, 5-volt Parametric Flash (No Reset, Top Boot)	Now
AT49F2048A	128K x 16	70 - 120 ns	2M-bit, 5-volt Parametric Flash	Now
AT49F040(T)	512K x 8	70 - 150 ns	4M-bit, 5-volt Boot Flash (Top Boot)	Now
AT49F4096A	256K x 16 / 512K x 8	70 - 120 ns	4M-bit, 5-volt Parametric Flash (Top Boot)	Now
AT49F080(T)	1M x 8	90 - 150 ns	8M-bit, 5-volt Boot Flash (Top Boot)	Now
AT49F008A(T)	1M x 8	90 -150 ns	8M-bit, 5-volt Boot Flash (Top Boot)	Now
AT49F8192A(T)	512K x 16 / 1M x 8	70 - 120 ns	8M-bit, 5-volt Flash (Top Boot)	Now
AT49F8011	512K x 16 / 1M x 8	90 -120 ns	8M-bit, 5-volt Sectored/Concurrent Flash	Now
AT49F1604(T)	1M x 16	70 - 120 ns	16M-bit, 5-volt Sectored/Concurrent Flash (Top Boot)	Now
AT49F1614(T)	2M x 8 / 1M x 16	70 - 120 ns	16M-bit, 5-volt Sectored/Concurrent Flash (Top Boot)	Now

Notes: 1. Not recommended for new designs.
2. Please refer to 2.7 - 3.6V *Battery-Voltage* device.

Serial EEPROMs

Part Number	Organization	V_{CC}	Description	Availability
AT24C01	128 x 8	1.8, 2.5, 2.7, 5.0V	1K-bit, 2-wire Bus Serial EEPROM, Non-Cascadable	Now
AT24C21	128 x 8	2.5V	1K-bit, 2-wire Bus Serial EEPROM, Dual Mode, Plug and Play Operation	Now
AT24C01A	128 x 8	1.8, 2.5, 2.7, 5.0V	1K-bit, 2-wire Bus Serial EEPROM with Full Hardware Write Protection	Now
AT24C02	256 x 8	1.8, 2.5, 2.7, 5.0V	2K-bit, 2-wire Bus Serial EEPROM with Full Hardware Write Protection	Now
AT24C02A	256 x 8	1.8, 2.5, 2.7, 5.0V	2K-bit, 2-wire Bus Serial EEPROM with Half Hardware Write Protection	Now
AT34C02	256 x 8	1.8, 2.7, 5.0V	2K-bit, 2-wire Serial EEPROM with Software Write Protection	Now
AT24C04	512 x 8	1.8, 2.5, 2.7, 5.0V	4K-bit, 2-wire Bus Serial EEPROM with Full Hardware Write Protection	Now
AT24C04A	512 x 8	1.8, 2.5, 2.7, 5.0V	4K-bit, 2-wire Bus Serial EEPROM with Half Hardware Write Protection	Now
AT24C08	1K x 8	1.8, 2.5, 2.7, 5.0V	8K-bit, 2-wire Bus Serial EEPROM	Now
AT24C08A	1K x 8	1.8, 2.5, 2.7, 5.0V	8K-bit, 2-wire Bus Serial EEPROM with Full Hardware Write Protection	Now
AT24C16	2K x 8	1.8, 2.5, 2.7, 5.0V	16K-bit, 2-wire Bus Serial EEPROM with Half Hardware Write Protection	Now
AT24C164	2K x 8	1.8, 2.5, 2.7, 5.0V	16K-bit, 2-wire Bus Serial EEPROM with Cascadable Feature	Now
AT24C32	4K x 8	1.8, 2.5, 2.7, 5.0V	32K-bit, 2-wire Bus Serial EEPROM with Cascadable Feature	Now
AT24C64	8K x 8	1.8, 2.5, 2.7, 5.0V	64K-bit, 2-wire Bus Serial EEPROM with Cascadable Feature	Now
AT24C128	16K x 8	1.8, 2.7, 5.0V	128K-bit, 2-wire Bus Serial EEPROM with Cascadable Feature	Now
AT24CS128	16K x 8	1.8, 2.7, 5.0V	128K-bit, 2-wire Bus Serial EEPROM with Cascadable Feature and Permanent Software Write Protect	Now
AT24C256	32K x 8	1.8, 2.7, 5.0V	256K-bit, 2-wire Bus Serial EEPROM with Cascadable Feature	Now
AT24CS256	32K x 8	1.8, 2.7, 5.0V	256K-bit, 2-wire Bus Serial EEPROM with Cascadable Feature and Permanent Software Write Protect	4Q99
AT24C512	64K x 8	1.8, 2.7, 5.0V	512K-bit, 2-wire Bus Serial EEPROM with Cascadable Feature	Now
AT25010	128 x 8	1.8, 2.7, 5.0V	1K-bit, SPI Bus Serial EEPROM, SPI Mode 0 and 3	Now
AT25020	256 x 8	1.8, 2.7, 5.0V	2K-bit, SPI Bus Serial EEPROM, SPI Mode 0 and 3	Now
AT25040	512 x 8	1.8, 2.7, 5.0V	4K-bit, SPI Bus Serial EEPROM, SPI Mode 0 and 3	Now
AT25080	1K x 8	1.8, 2.7, 5.0V	8K-bit, SPI Bus Serial EEPROM, SPI Mode 0 and 3	Now
AT25160	2K x 8	1.8, 2.7, 5.0V	16K-bit, SPI Bus Serial EEPROM, SPI Mode 0 and 3	Now
AT25320	4K x 8	1.8, 2.7, 5.0V	32K-bit, SPI Bus Serial EEPROM, SPI Mode 0 and 3	Now
AT25640	8K x 8	1.8, 2.7, 5.0V	64K-bit, SPI Bus Serial EEPROM, SPI Mode 0 and 3	Now
AT25128	16K x 8	1.8, 2.7, 5.0V	128K-bit, SPI Bus Serial EEPROM, SPI Mode 0 and 3	Now
AT25256	32K x 8	1.8, 2.7, 5.0V	256K-bit, SPI Bus Serial EEPROM, SPI Mode 0 and 3	Now
AT25HP256	32K x 8	1.8, 2.7, 5.0V	256K-bit, SPI Bus Serial EEPROM, High-speed, Page-write Only, SPI Mode 0 and 3	Now
AT25HP512	64K x 8	1.8, 2.7, 5.0V	512K-bit, SPI Bus Serial EEPROM, High-speed, Page-write Only, SPI Mode 0 and 3	Now
AT25P1024	1M x 8	1.8, 2.7, 5.0V	1M-bit, SPI Bus Serial EEPROM, Page-write Only, SPI Mode 0 and 3	Now
AT93C46	64 x 16 / 128 x 8	1.8, 2.5, 2.7, 5.0V	1K-bit, 3-wire Bus Serial EEPROM	Now
AT93C46A	64 x 16	2.5, 2.7, 5.0V	1K-bit, 3-wire Bus Serial EEPROM	Now
AT93C46C	64 x 16	2.5, 2.7, 5.0V	1K-bit, 3-wire Bus Serial EEPROM with Schmitt Trigger Inputs	Now
AT93C56	128 x 16 / 256 x 8	2.5, 2.7, 5.0V	2K-bit, 3-wire Bus Serial EEPROM	Now
AT93C57	128 x 16 / 256 x 8	2.5, 2.7, 5.0V	2K-bit, 3-wire Bus Serial EEPROM with Special Address	Now
AT93C66	256 x 16 / 512 x 8	2.5, 2.7, 5.0V	4K-bit, 3-wire Bus Serial EEPROM	Now
AT93C86	1024 x 16 / 2048 x 8	2.7, 5.0V	16K-bit, 3-wire Bus Serial EEPROM with Sequential Read and Schmitt Trigger Inputs	Now
AT59C11	64 x 16 / 128 x 8	2.5, 2.7, 5.0V	1K-bit, 4-wire Bus Serial EEPROM	Now
AT59C22	128 x 16 / 256 x 8	2.5, 2.7, 5.0V	2K-bit, 4-wire Bus Serial EEPROM	Now
AT59C13	256 x 16 / 512 x 8	2.5, 2.7, 5.0V	4K-bit, 4-wire Bus Serial EEPROM	Now

Parallel EEPROMs

Part Number	Organization	Speeds	Description	Availability
High-speed				
AT28HC64B	8K x 8	55 - 120 ns	64K-bit EEPROM with 64-byte Page and Software Data Protection	Now
AT28HC256	32K x 8	70 - 120 ns	256K-bit EEPROM with 64-byte Page and Software Data Protection	Now
AT28HC256E	32K x 8	70 - 120 ns	256K-bit EEPROM with Extended Endurance	Now
AT28HC256F	32K x 8	70 - 120 ns	256K-bit EEPROM with Fast Write	Now
Battery-Voltage **(2.7 to 3.6V)**				
AT28BV16	2K x 8	200 - 250 ns	16K-bit EEPROM, 2.7-volt	Now
AT28BV64	8K x 8	200 - 250 ns	64K-bit EEPROM, 2.7-volt	Now
AT28LV010	128K x 8	200 - 250 ns	1M-bit EEPROM with 128-byte Page and Software Data Protection, 3.0-volt	Now
AT28BV64B	8K x 8	200 - 250 ns	64K-bit EEPROM with 64-byte Page and Software Data Protection, 2.7-volt	Now
AT28BV256	32K x 8	200 - 250 ns	256K-bit EEPROM with 64-byte Page and Software Data Protection, 2.7-volt	Now
Standard Voltage (5.0V)				
AT28C16	2K x 8	150 ns	16K-bit EEPROM	Now
AT28C16E	2K x 8	150 ns	16K-bit EEPROM with Extended Endurance and Fast Write	Now
AT28C17	2K x 8	150 ns	16K-bit EEPROM with Ready/Busy	Now
AT28C17E	2K x 8	150 ns	16K-bit EEPROM with Ready/Busy and Extended Endurance and Fast Write	Now
AT28C64	8K x 8	120 - 250 ns	64K-bit EEPROM	Now
AT28C64E	8K x 8	120 - 250 ns	64K-bit EEPROM with Extended Endurance and Fast Write	Now
AT28C64X	8K x 8	120 - 250 ns	64K-bit EEPROM without Ready/Busy	Now
AT28C64B	8K x 8	150 - 250 ns	64K-bit EEPROM with 64-byte Page and Software Data Protection	Now
AT28C256	32K x 8	150 - 250 ns	256K-bit EEPROM with 64-byte Page and Software Data Protection	Now
AT28C256E	32K x 8	150 - 250 ns	256K-bit EEPROM with Extended Endurance	Now
AT28C256F	32K x 8	150 - 250 ns	256K-bit EEPROM with Fast Write	Now
AT28C010	128K x 8	120 - 250 ns	1M-bit EEPROM with 128-byte Page and Software Data Protection	Now
AT28C010E	128K x 8	120 - 250 ns	1M-bit EEPROM with 128-byte Page and Extended Endurance and Software Data Protection	Now
AT28C040	512K x 8	200 - 250 ns	4M-bit EEPROM with 256-byte Page and Software Data Protection	Now

Parallel EEPROM Die Product*

Part Number	V_{CC}	Device T_{AA}	Package Configuration
AT28BV16-W	2.7 - 3.6V	250 ns	Die
AT28BV16-DWF	2.7 - 3.6V	250 ns	Wafer
AT28BV64-W	2.7 - 3.6V	250 ns	Die
AT28BV64-DWF	2.7 - 3.6V	250 ns	Wafer
AT28BV64B-W	2.7 - 3.6V	250 ns	Die
AT28BV64B-DWF	2.7 - 3.6V	250 ns	Wafer
AT28BV256-W	2.7 - 3.6V	250 ns	Die
AT28BV256-DWF	2.7 - 3.6V	250 ns	Wafer
AT28LV010-W	3.0 - 3.6V	250 ns	Die
AT28LV010-DWF	3.0 - 3.6V	250 ns	Wafer
AT28C16-W	4.5 - 5.5V	200 ns	Die
AT28C16-DWF	4.5 - 5.5V	200 ns	Wafer
AT28C64-W	4.5 - 5.5V	200 ns	Die
AT28C64-DWF	4.5 - 5.5V	200 ns	Wafer
AT28C64B-W	4.5 - 5.5V	200 ns	Die
AT28C64B-DWF	4.5 - 5.5V	200 ns	Wafer
AT28HC64B-W	4.5 - 5.5V	120 ns	Die
AT28HC64B-DWF	4.5 - 5.5V	120 ns	Wafer
AT28C256-W	4.5 - 5.5V	200 ns	Die
AT28C256-DWF	4.5 - 5.5V	200 ns	Wafer
AT28HC256-W	4.5 - 5.5V	120 ns	Die
AT28HC256-DWF	4.5 - 5.5V	120 ns	Wafer
AT28C010-W	4.5 - 5.5V	200 ns	Die
AT28C010-DWF	4.5 - 5.5V	200 ns	Wafer

*Performance is guaranteed over commercial temperature range as standard product.

EPROMs

Part Number	Organization	Speeds	Description	Availability
Battery-Voltage™ **(2.7 to 3.6V)**				
AT27BV256	32K x 8	70 - 150 ns	256K-bit, 2.7-volt to 3.6-volt EPROM	Now
AT27BV512	64K x 8	70 - 150 ns	512K-bit, 2.7-volt to 3.6-volt EPROM	Now
AT27BV010	128K x 8	90 - 150 ns	1M-bit, 2.7-volt to 3.6-volt EPROM	Now
AT27BV1024	64K x 16	90 - 150 ns	1M-bit, 2.7-volt to 3.6-volt EPROM	Now
AT27BV020	256K x 8	90 - 150 ns	2M-bit, 2.7-volt to 3.6-volt EPROM	Now
AT27BV040	512K x 8	120 - 150 ns	4M-bit, 2.7-volt to 3.6-volt EPROM	Now
AT27BV4096	256K x 16	120 - 150 ns	4M-bit, 2.7-volt to 3.6-volt EPROM	Now
AT27BV400	512K x 8 / 256K x 16	150 ns	4M-bit, Byte-selectable 2.7-volt to 3.6-volt EPROM	Now
AT27BV800	1M x 8 / 512K x 16	150 ns	8M-bit, Byte-selectable 2.7-volt to 3.6-volt EPROM	Now
Low-voltage (3.0 to 3.6V)				
AT27LV256A	32K x 8	55 - 150 ns	256K-bit, 3-volt EPROM	Now
AT27LV512A	64K x 8	70 - 150 ns	512K-bit, 3-volt EPROM	Now
AT27LV520	64K x 8	90 ns	512K-bit, Latched 3-volt EPROM	Now
AT27LV010A	128K x 8	70 - 150 ns	1M-bit, 3-volt EPROM	Now
AT27LV1026	2 x 32K x 16	35 - 55 ns	1M-bit, Interleaved 3-volt EPROM	Now
AT27LV020A	256K x 8	90 - 150 ns	2M-bit, 3-volt EPROM	Now
AT27LV040A	512K x 8	90 - 150 ns	4M-bit, 3-volt EPROM	Now
Standard Voltage (5.0V)				
AT27C256R	32K x 8	45 - 150 ns	256K-bit, 5-volt EPROM	Now
AT27C512R	64K x 8	45 - 150 ns	512K-bit, 5-volt EPROM	Now
AT27C516	32K x 16	45 - 100 ns	512K-bit, 5-volt EPROM	Now
AT27C520	64K x 8	70 - 90 ns	512K-bit, Latched 5-volt EPROM	Now
AT27C010(L)	128K x 8	45 - 150 ns	1M-bit, 5-volt EPROM Standard and Low-power	Now
AT27C1024	64K x 16	45 - 150 ns	1M-bit, 5-volt EPROM	Now
AT27C020	256K x 8	55 - 150 ns	2M-bit, 5-volt EPROM	Now
AT27C2048	128K x 16	55 - 150 ns	2M-bit, 5-volt EPROM	Now
AT27C040	512K x 8	70 - 150 ns	4M-bit, 5-volt EPROM	Now
AT27C4096	256K x 16	55 - 150 ns	4M-bit, 5-volt EPROM	Now
AT27C400	512K x 8 / 256K x 16	90 - 150 ns	4M-bit, Byte-selectable 5-volt EPROM	Now
AT27C080	1M x 8	90 - 150 ns	8M-bit, 5-volt EPROM	Now
AT27C800	1M x 8 / 512K x 16	100 - 150 ns	8M-bit, Byte-selectable 5-volt EPROM	Now

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