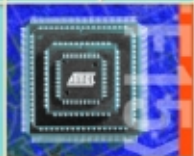


ATMEL PRODUCT GUIDE

APRIL 2002



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APRIL 2002



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Atmel Corporation is a worldwide leader in the design, manufacturing and marketing of advanced semiconductors, including microcontrollers, programmable logic, nonvolatile memory, secure, mixed signal and RF (Radio Frequency) integrated circuits.

Atmel uses its leading-edge technologies, global manufacturing capacity and world class design expertise to combine its core nonvolatile memory competency into unique memory, programmable logic and application specific integrated circuits. By combining these core technologies, Atmel meets the evolving and growing needs of the design engineer through the production of standard and application specific system level integrated circuits. Addressing customer requirements and expectations, Atmel aims to provide all the building blocks necessary to integrate system-on-chip solutions onto the smallest silicon area at the lowest power consumption and price.

Atmel is committed to a customer-oriented approach in serving today's electronics marketplace. By ensuring the timely introduction and continued support of its customers own products, Atmel chips are the very heart of the latest electronic products that help to make transactions more secure, communications more flexible, business more efficient and leisure time more enjoyable.

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Atmel's products are available from any of the Atmel sales offices, franchised sales representative or distributors. To find an Atmel sales office, sales representative or distributor in your area, go to:

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Application Specific Standard Products (ASSPs)

Aerospace & Military

Military & Avionics

Military & Avionics ASICs

Part Number	Description	Availability
MG1	0.6 Micron 500 Kcells Sea of Gates	Now
MG2	0.5 Micron Sea of Gates	Now
MH1	0.35 Micron 1.6M Gates Sea of Gates/Embedded Arrays	Now
MH2	0.25 Micron 5M Gates Cell-based	June 2002

Space

Space Radiation Tolerant ASICs

Part Number	Description	Availability
MG1RT	Rad Tolerant 0.6 Micron – 500 Kcells Sea of Gates	Now
MG2RT	Rad Tolerant 0.5 Micron Sea of Gates	Now
MG2RTP	Rad Hard 0.5 Micron Sea of Gates	Now
MH1RT	Rad Hard 0.35 Micron 1.6M Used Gates Sea of Gates/Embedded Gates	Now
MH2RT	Rad Hard 0.25 Micron 5M Gates Cell-based	4Q2002
DMILL	Mixed Analog/Digital Technology Hardened to Tolerate More than 10 Mrad and 10^{14} Neutrons/cm ²	Now

Space Radiation Tolerant Memories

Part Number	Description	Availability
T61162E	Radiation Hard 2M-bit x 8 SRAM Cube	June 2002
T60142E	Rad Tolerant 512K x 8 Very Low Power CMOS SRAM	June 2002
M65608E	Rad Tolerant 5V 128K x 8 Very Low Power CMOS SRAM	Now
M65609E	Rad Hard 3.3V 128K x 8 Very Low Power CMOS SRAM	Now
M65656G	Rad Tolerant 32K x 8 Very Low Power CMOS SRAM	Now
M67025E	Rad Tolerant High Speed 8K x 16 Dual Port RAM	Now
M67206F	Rad Tolerant High Speed 16K x 9 Parallel FIFO	Now
M672061F	Rad Tolerant High Speed 16K x 9 Parallel FIFO with Programmable Flag	Now
M67204F	Rad Tolerant High Speed 4K x 9 CMOS Parallel FIFO	Now

Space (Continued)

Space Radiation Tolerant Standard ASICs

Part Number	Description	Availability
29C516E	16-bit Flow through EDAC Error Detection and Correction Unit	Now
29C532E	32-bit Bus-Watch EDAC Error Detection and Correction Unit	Now
T7904E	Radiation Tolerant DSP Peripheral Controller	Now
T7906E	Single Point-to-Point IEEE 1355 High Speed Controller	Now
TSS901E	Triple Point-to-Point IEEE1355 High Speed Controller	Now
TSS902E	Viterbi and Reed-Solomon FEC Decoder	Now

Space Radiation Tolerant Processors and DSP

Part Number	Description	Availability
80C32E	80C51, Radiation Tolerant 8-bit Microcontroller ROMless	Now
TSC21020F	ADI21020, Radiation and SEU Hardened 32-bit Floating Point DSP	Now
TSC691E	Radiation Tolerant SPARC Integer Unit	Now
TSC692F	Radiation Tolerant SPARC Floating Point Unit	Now
TSC693E	Radiation Tolerant SPARC Memory Controller	Now
TSC695F	Radiation Tolerant SPARC Single-chip Processor	Now

High-reliability Microprocessors

PowerPC® Family

Part Number	Description	Availability
PC107A	32-bit RISC, PCI Bridge/Memory Controller, 66, 83 and 100 MHz, 503-ball PBGA Package	Now
PC745B/755B	32-bit RISC Microprocessor 300 and 400 MHz, 255-ball PBGA (for 745B) and 360-ball PBGA, 360-ball CBGA (for 755B) Packages	Now
PC7400	32-bit RISC Microprocessor with AltiVec 350 and 400, 360-ball CBGA, 360-ball CI-CGA Packages	Now
PC7410	32-bit RISC Microprocessor with AltiVec 400, 450 MHz, 360-ball CBGA, 360-ball CI-CGA Packages	Now
PC7455/7555	32-bit RISC Microprocessor with AltiVec 600 MHz, 360-ball CBGA Package (for 7445), 484 CBGA Package (for 7555)	4Q2002
PC8240	32-bit RISC Integrated Processor, 200 MHz, 352-ball TBGA Package	Now
PC8245	32-bit RISC Integrated Processor, 300 MHz, 352-ball TBGA Package	June 2002
PC8540	32-bit RISC Integrated Processor with Rapid IO, 600-800 MHz, 575 PBGA Package	1H2003
TSPC603R	32-bit RISC, PowerPC 603e RISC Microprocessor 166, 200 and 300 MHz, 255-ball CBGA, 255-ball CI-CBGA, 240-lead MQUAD Packages	Now
TSPC106A	32-bit RISC, PCI Bus Bridge/Memory Controller, 66 and 83 MHz, 303-ball CBGA and 303-ball CI-CBGA with Solder Column Interposer (SCI) Packages	Now
TSPC740A/750A	32-bit RISC Microprocessor 200 and 266 MHz, 255-ball CBGA (for 740A) and 360-ball CBGA (for 750A) and CI-CBGA with Solder Column Interposer (SCI) Packages	Now

68000 Family

Part Number	Description	Availability
TS68C429A	CMOS ARINC 429 Multichannel Receiver/Transmitter, 84-pin PGA and 132-lead CQFP Packages	Now
TS68020	HCMOS 32-bit Virtual Memory Microprocessors, 114-pin PGA and 132-lead CQFP Packages	Now
TS68040	Third-generation 32-bit Microprocessor, 179-pin PGA and 196-lead CQFP Packages	Now
TS68882	CMOS 32-bit Enhanced Floating-point Coprocessor, 68-pin PGA and 68-lead CQFP Packages	Now

High-reliability Microprocessors (Continued)

ARINC Controller Family

Part Number	Description	Availability
EF4442	ARINC 429 Multichannel Buffer Receiver (RTA), 28-pin DIL and 28-pin DIP Packages	Now

High-reliability MCU and Clock Drivers

Part Number	Family	Description	Availability
TS68302	MCU	Integrated Multiprotocol Processor (IMP), 132-pin PGA and 132-lead CQFP Packages	Now
TS68332	MCU	High-performance 32-bit Integrated Microcontroller, 132-pin PGA and 132-lead CQFP Packages	Now
TS68EN360	MCU	32-bit QUAD Integrated Communication Controller, 241-pin PGA and 240-lead CQFP Packages	Now
TSPC860SR	MCU	PowerQUICC Communication Controller 66 MHz, ATM Support, 357-ball PBGA Package	Now
PC8260	MCU	PowerQUICC Integrated PowerPC Processor, 480-ball TBGA Package	Now
TS88915T	Clock Drivers	Low Skew CMOS PLL Clock Driver 3-state 70 and 100 MHz Versions, 29-pin PGA and 28-lead LDCC Packages	Now
TSPC932	Clock Drivers	Low-voltage PLL Clock Driver, 32-lead TQFP Package	Now

Automotive

Automotive Control

Dashboard Dimmer ICs

Part Number	Package	Description	Availability
U6083B	DIP8	PWM High-side Driver, $f < 2000$ Hz, 18 to 100% Duty Cycle, Minimum External Components	Now
U6084B	SO16	PWM High-side Driver, $f < 2000$ Hz, 0 to 100% Duty Cycle Continuously for High-performance Applications	Now

Driver ICs

Part Number	Package	Description	Availability
T6801B	SO8	Single-channel Driver, 25 mA Output with Thermal Monitoring, Thermal Shutdown, Short-circuit Protection	Now
U6803B	SO8	Triple Driver, 3 x 25 mA Output with Thermal Monitoring, Common Thermal Shutdown, Short-circuit Protection	Now
U6805B	SO14	Hex Driver, 6 x 25 mA Output with Thermal Monitoring, Common Thermal Shutdown, Short-circuit Protection	Now
U6815BM	SO28	Dual Hexdriver with Serial Input Control, 6 High-side and 6 Low-side Drivers, 600 mA Current Limitation	Now
U6820BM	SO16	Dual Quad Driver with Serial Input Control, 4 High-side Output Stages, 4 Low-side Output Stages, 50 mA Capability, Current Limitation	Now
T6816	SO28	40V Dual Hexdriver with Serial Input Control, 6 High-side and 6 Low-side Drivers, 600 mA Current Limitation	Now
T6817	SSO20	Dual Triple Driver with Serial Input Control, 3 High-side and 3 Low-side Drivers, 600 mA Current Limitation	Now
T6818	SO14	Triple Half-bridge Driver with Serial Input Control, 3 High-side and 3 Low-side Drivers, 1500 mA Current Limitation	Now
T6828	SO14 Heat Slug	Triple Half-bridge Driver with Serial Input Control, 3 High-side and 3 Low-side Drivers, 1500 mA Current Limitation	Now
T6819	SO16	Dual Triple Driver with Serial Input Control and PWM Input, 3 High-side and 3 Low-side Drivers, 1500 mA Current Limitation	Now
T6829	SO16 Heat Slug	Dual Triple Driver with Serial Input Control and PWM Input, 3 High-side and 3 Low-side Drivers, 1500 mA Current Limitation	Now
T6822	SO20	Dual Half-bridge Driver with Parallel Input, 2 High-side and 2 Low-side Drivers, 1300 mA Current Limitation	June 2002

Automotive Control (Continued)

Flasher ICs

Part Number	Package	Description	Availability
U643B	DIP8, SO8	Lamp Load > 1W, 30 mΩ Shunt, Improved EMC, Load-dump Protected	Now
U2043B	DIP8, SO8	Lamp Load > 10W, 30 mΩ Shunt, Improved EMC, Pilot Lamp	Now
U2044B	DIP14, SO14	Lamp Load > 10W, 30 mΩ Shunt, Standby Current < 10 μA, Twin Relay Flasher	Now
U6043B	DIP8, SO8	Lamp Load > 1W, 18 mΩ Shunt, Improved EMC, Load-dump Protected	Now
U6432B	SO8	Lamp Load > 1W, 18 mΩ Shunt, Low Current Consumption in Standby Mode < 10 μA	Now
U6433B	SO8	Lamp Load > 1W, 18 mΩ Shunt, Improved EMC, Load-dump Protected	Now

Lamp-Outage Monitoring ICs

Part Number	Package	Description	Availability
U479B	DIP8	2 Comparators, 8 mV Threshold, Single-lamp Application, ESD Protection up to 2 kV	Now
U4790B	DIP8, SO8	2 Comparators, 8 mV Threshold, Single-lamp Application, ESD Protection up to 10 kV	Now
U4791B	DIP8, SO8	2 Comparators, 53 mV Threshold, Parallel-lamp Application, ESD Protection up to 10 kV	Now
U4793B	DIP8, SO8	2 Comparators, 44 mV Threshold, Glow-plug Application, ESD Protection up to 10 kV	Now

Long-Time Timer ICs

Part Number	Package	Description	Availability
U6032B	DIP8, SO8	Toggle IC for Switch-over Function, Defined Status after POR	Now
U6046B U6047B	DIP8, SO8	Adjustable Delay Time 4s to 20h, Delay Adjustable with RC Oscillator, R < 650 kΩ, C < 4700 pF, Input Signal HIGH → U6046B, Input Signal LOW → U6047B	Now
U6049B	DIP8, SO8	Cooling-off Timer, Thermo Switch Input, 4s to 20h Delay Time, Delay Adjustable with RC Oscillator, R < 650 kΩ, C < 4700 pF	Now

Automotive Control (Continued)

Remote Keyless Entry/Tire Pressure Monitoring⁽¹⁾⁽²⁾

Part Number	Package	Description	Availability
T5743N	SO20	UHF Remote Control Receiver, High FSK Sensitivity, 5 to 20V Automotive Compatible Data Interface, Data Clock Available for Manchester and Biphase Coded Signals	Now
T5744	SO20, SSO20	UHF Remote Control Receiver for ASK Systems/PWM Mode	Now
T5753	TSSOP8	UHF ASK/FSK Transmitter, Frequency Range 310 to 330 MHz, High Output Power	Now
T5754	TSSOP8	UHF ASK/FSK Transmitter, Frequency Range 429 to 439 MHz, High Output Power	Now
T5750	TSSOP8	UHF ASK/FSK Transmitter, Frequency Range 868 to 928 MHz, High Output Power	Now
T5760	SO20	UHF ASK/FSK Receiver, Frequency Receiving Range 868 to 870 MHz, Highest Integration Level in Market	Now
T48C862M-R3-TN	SSO24	Complete UHF Transmitter, Flash Microcontroller and Transmitter PLL T5753 in One IC, Temperature Range -40°C to 125°C	June 2002
T48C862M-R4-TN	SSO24	Complete UHF Transmitter, Flash Microcontroller and Transmitter PLL T5754 in One IC, Temperature Range -40°C to 125°C	June 2002
T48C862M-R8-TN	SSO24	Complete UHF Transmitter, Flash Microcontroller and Transmitter PLL T5750 in One IC, Temperature Range -40°C to 125°C	June 2002
T44C862M-xxxR3-TN	SSO24	Complete UHF Transmitter, ROM Microcontroller and Transmitter PLL T5753 in One IC, Temperature Range -40°C to 125°C	June 2002
T44C862M-xxxR4-TN	SSO24	Complete UHF Transmitter, ROM Microcontroller and Transmitter PLL T5754 in One IC, Temperature Range -40°C to 125°C	June 2002
T44C862M-xxxR8-TN	SSO24	Complete UHF Transmitter, ROM Microcontroller and Transmitter PLL T5750 in One IC, Temperature Range -40°C to 125°C	June 2002

- Notes: 1. For dedicated microcontrollers for Remote Keyless Entry/Tire Pressure Monitoring Applications, please see “4-bit Microcontrollers/MARC4 Family” on pages 65-66.
 2. For dedicated car access products, please see “RF Remote Control ICs” on pages 19-20 and “RF-Identification/Immobilization ICs” on pages 30-31.

Watchdog ICs

Part Number	Package	Description	Availability
U5020M	SO16	Watchdog Timer, Active and Sleep Mode, 6 Wake-up Inputs, Enable Output	Now
U5021M	SO8	Watchdog Timer, Active and Sleep Mode, 1 Wake-up Input, Enable Output	Now
T6020M	SO20	Watchdog IC, µP Based, Programmable via Metal Mask (Based on Microcontroller T44C080N)	Now

Automotive Control (Continued)

Wiper and Wash Control ICs

Part Number	Package	Description	Availability
U641B	DIP8, SO8	Wipe/Wash Control with Prewash Delay, INT/WIWA Switches to V _{BATT}	Now
U642B	DIP8, SO8	Wipe/Wash Control without Prewash Delay, INT/WIWA Switches to V _{BATT}	Now
U842B	DIP8, SO8	Universal Wiper Control with Prewash Delay, Variable INT Pause, INT/WIWA Switches to GND	Now

Networking/Multiplexing ICs

Part Number	Package	Description	Availability
B10011S	SO16	Low-speed CAN Transceiver for High Transmission Levels, Two-wire Bus Interface, Point-to-point Interface between Trucks and Trailers, Interface between Dashboard and Engine, etc., High Reliability, 27V Operation, Hardware Fault Recognition, Immunity against Electromagnetic Interference, High Noise Immunity, According to ISO WD 11992-1	Now
U6812B	SO16	Single-ended Bus Transceiver (ISO 9141) with Triple Buffer, Wide Operating-voltage Range, K-interface According to ISO 9141, 250K Baud Rate, 3 x 40 mA Integrated Buffers	Now
TSS461C		Vehicle Area Network (VAN) Data Link Controller	Now
TSS463B		Vehicle Area Network (VAN) Data Link Controller with Serial Interface	Now
TSSIO16E		Vehicle Area Network (VAN) Peripheral Circuit – 16 I/Os	Now
TSS461C		Vehicle Area Network (VAN) Data Link Controller	Now

Safety ICs

Part Number	Package	Description	Availability
Fail-Safe ICs			
U6808B	SO8	Fail-safe IC, Watchdog Timer and Relay Driver	Now
U6809B	SO20	Fail-safe IC, Watchdog Timer, Relay Driver and Lamp Driver	Now
U6813B	SO16	Fail-Safe IC, Watchdog Timer, Relay Driver, Lamp Driver and Charge Pump	Now
Airbag ICs			
U6268B	SO16	Side Airbag Sensor Dual Interface (Satellite Interface), 50 mA Sensor Supply, Data Transfer by Current Modulation	Now

Communications

Bluetooth™ Solutions

Wireless

Part Number	Description	Availability
T7023	Bluetooth/ISM 2.4 GHz Power Amplifier, P _{OUT} = 23 dBm, MLF16 Package	Now
T7024	Bluetooth/ISM 2.4 GHz TX/RX Front End, P _{OUT} = 23 dBm, NF = 2 dB, PSSO20 and MLF20 Packages and Flipchip	Now
AT76C551-0T176	Bluetooth Baseband and MAC (0.35 Microns), PCMCIA, UART	Now
AT76C552-1-0Z176/ AT76C552-1-0L176	Bluetooth Baseband and MAC (0.21 Microns), PCMCIA	June 2002
AT76C553-1-0Z144/ AT76C553-2-0Z082/ AT76C553-3-0Z082 (MCM)	Bluetooth Baseband and MAC (0.21 Microns), USB Interface	June 2002
AT76C554-3-0Z144/ AT76C554-2-0Z082/ AT76C554-1-0Z082 (MCM)	Bluetooth Baseband and MAC (0.21 Microns), UART Interface	June 2002
Evaluation/Development Kits (Available for Prequalified Customers)		
AT76C551-EK	Kit Includes: Two PCMCIA Cards, Software Utilities, Firmware, Drivers, Software Manual (Silicon Wave Radio), Documentation	Now ⁽¹⁾
AT76C55X-DK	Kit Includes: Two Boards with BB and RF, Three Physical Interfaces to Host (PCMCIA, USB, UART), Two Power Supplies, Two Serial Cables, Two PCMCIA Cables, Speakers, Microphone, Firmware Up through HCI Transport, Software Up Through L2CAP, Software Manual, Documentation	Now ⁽¹⁾

Note: 1. Call Atmel for Availability.

Broadband Communications

Broadband Data Converters

Part Number	Description	Evaluation Board	Availability
TS8388BF	8-bit Resolution, 1000 Msps Sampling Rate, 1500 MHz Input Bandwidth, 1 GSPS 8-bit A/D Converter in 68-lead CQFP Package	TSEV8388BF	Now
TS8388BG	8-bit Resolution, 1000 Msps Sampling Rate, 1800 MHz Input Bandwidth, 1 GSPS A/D Converter in 72-ball CBGA Package	TSEV8388BG	Now
TS83102GOGL	10-bit Resolution, 2 Gsps Sampling Rate, 3.4 GHz Input Bandwidth, 2 Gsps 10-bit A/D Converter in 148-ball CBGA Package	TSXEV83102GOGL	Now
AT76C610	6-bit Resolution, 1 Gsps Sampling Rate, 250 MHz Input Bandwidth Dual-1 Gsps 6-bit A/D Converter in 80-lead TQFP Package	AT76C610-EB	Now
TS84081G0	8-bit Resolution, 1 Gsps Sampling Rate, 250 MHz Input Bandwidth Dual-1 Gsps 8-bit A/D Converter in 144-lead TQFP Package	TSEV84081G0	4Q2002
TS8308500	8-bit Resolution, 500 Msps Sampling Rate, 1GHz Input Bandwidth A/D Converter in 72-Ball CBGA Package	TSEV8308500G	Now
TSX86101G2	10-bit Resolution, 1.2 Gsps Sampling Rate, with integrated MUX 1:4 (speed ratio) in 225-Ball Ci-CGA Package	TSEV86101G2GS	Samples

DMUX for Broadband ADC

Part Number	Description	Evaluation Board	Availability
TS81102G0	8 to 10-bit Resolution, 2 Gsps Maximum Input Sampling Rate, 1:8/1:4 Speed Ratio, $\pm 5V$ Power Supply, 8 to 10-bit 2 GSPS DEMUX	TSEV81102G0TP	Now

Cellular Phones

CDMA

Part Number	Package	Description	Availability
T0360	MLF16 (4 x 4 mm)	3V HBT SiGe Power Amplifier for AMPS/Cell Band CDMA Handhelds, High Efficiency, Excellent ACP and ALT, Low Quiescent Current	Now
T0370	6 x 6 mm Module	3V Power Amplifier Module for AMPS/Cell Band CDMA Handhelds, High Power Added Efficiency, Three Quiescent Current States, CMOS Compatible Control Logic Inputs	Now
T0371	6 x 6 mm Module	3V Power Amplifier Module for AMPS/Cell Band CDMA Handhelds, High Power Added Efficiency, Two Quiescent Current States, CMOS Compatible Control Logic Inputs	Now
T0372	4 x 4 mm Module	3V Power Amplifier Module for AMPS/Cell Band CDMA Handhelds, High Power Added Efficiency, Two Quiescent Current States, CMOS Compatible Control Logic Inputs	Now
T0375	6 x 6 mm Module	3V Power Amplifier Module for PCS Band CDMA Handhelds, High Power Added Efficiency, Three Quiescent Current States, CMOS Compatible Control Logic Inputs	Now
T0376	6 x 6 mm Module	3V Power Amplifier Module for PCS Band CDMA Handhelds, High Power Added Efficiency, Two Quiescent Current States, CMOS Compatible Control Logic Inputs	Now
T0377	4 x 4 mm Module	3V Power Amplifier Module for PCS Band CDMA Handhelds, High Power Added Efficiency, Two Quiescent Current States, CMOS Compatible Control Logic Inputs	Now
T0345	MLF32 (5 x 5 mm)	Dual-band CDMA/AMPS Transmitter for Both Cellular Band and PSC Band Handhelds, 100 dB Control Range, Low Current Consumption, Individual Block Power-down Capability, On-chip IF PLL, Simple 3-wire/4-bit Programming, Very High Output Power	Now
T0350	MLF32 (5 x 5 mm)	Dual-band/Tri-mode Receiver Front End for Cellular and PCS Band Handhelds, Excellent Noise and Linearity Performance of the LNAs and Mixers, Very Good RF, LO and Half-IF Suppression Performance of the Double-balanced Mixers, Buffered LO Outputs with High Output Power for the TX Up-converter, Simple Mode and Band Selection by CMOS Compatible Inputs	Now
T0351	MLF24 (4 x 4 mm)	CDMA/AMPS Single Band/Dual-mode Receiver Front End for Handhelds, Excellent Noise and Linearity Performance of the LNAs and Mixers, Very Good RF, LO and Half-IF Suppression Performance of the Double-balanced Mixers, Buffered LO Outputs with High Output Power for the TX Up-converter, Simple Mode and Band Selection by CMOS Compatible Inputs	Now
T0352	MLF24 (4 x 4 mm)	CDMA/GPS Dual-band/Dual-mode Receiver Front End for PCS Band Handhelds, Excellent Noise and Linearity Performance of the LNAs and Mixers, Very Good RF, LO and Half-IF Suppression Performance of the Double-balanced Mixers, Buffered LO Outputs with High Output Power for the TX Up-converter, Simple Mode and Band Selection by CMOS Compatible Inputs	Now
T0353	MLF32 (5 x 5 mm)	Tri-band/Quad Mode Receiver Front End for Cellular and PCS Band Handhelds, Excellent Noise and Linearity Performance of the LNAs and Mixers, Very Good RF, LO and Half-IF Suppression Performance of the Double-balanced Mixers, Buffered LO Outputs with High Output Power for the TX Up-converter, Simple Mode and Band Selection by CMOS Compatible Inputs	Now

Cellular Phones (Continued)

Front End ICs

Part Number	Package	Description	Availability
TST0950	TSSO8	SiGe LNA (900 MHz), Low Noise, Gain Switching, Power Down	Now
TST0951	TSSO8	SiGe LNA for GSM Phones (1800/1900 MHz), Low Noise, Gain Switching, Power Down	Now
U2790B	SO16	1000 MHz Quadrature Modulator for Digital Cellular Radio Systems, Very Low Power Consumption (typ. 150 mW), 0 dBm O/P Level	Now
U2793B	SSO20	30 to 300 MHz Quadrature Modulator for Digital Cellular Radio Systems and Hybrid Fibre Coax Applications, Current Consumption 15 mA @ 5V	Now
U2794B	SSO20	1000 MHz Quadrature Demodulator for Cellular Phones and Hybrid Fibre Coax Applications, Low DC Offset $f_{IN} = 70 - 1000$ MHz	Now
U2795B	SO8	2500 MHz Up- and Down-conversion Mixer for DECT, PCN and WLAN Applications, Supply Voltage 2.7 to 5.5V, Single-ended Output, no Balun Required, Input and Output Impedance Programmable, IP3 Programmable	Now
U2796B	SO8	2000 MHz Down-conversion Mixer, Supply Voltage 2.7 to 5.5V, Very Good Isolation Characteristics, Current Consumption 3.2 mA	Now
U2891B	SSO24	Converter for Wireless Applications such as GSM, DCS1800, PCS1900, PDC, I/Q Modulator and Mixer, Low Current Consumption: 15 mA @ 3V, Few External Components	Now
U2893B	SSO20	Transmitter (GSM900/1800/1900), Modulation Loop Concept	Now
U2894B	SSO28	Transmitter (GSM900/1800/1900), Modulation Loop Concept, Modified Divider Ratio	Now
U2895B	SSO28	GSM, DCS, PCS Transmitter, Modulation Loop Concept, Higher Modulator LO Frequency	Now
U2896B	SSO36	GSM, DCS, PCS Transmitter, Modulation Loop Concept, Symmetrical Inputs/Outputs, Variable Charge-pump Current	Now

Power Amplifier ICs

Part Number	Package	Description	Availability
TST0911	PSSOP28	SiGe Power Amplifier for Dual-band GSM Phones (GSM/DCS or GSM/PCS), Single Supply Voltage +3V, Output Power 35/32 dBm	Now
TST0912	PSSOP16	SiGe Power Amplifier for GSM Phones (GSM900), Single Supply Voltage +3V, $P_{OUT} = 35$ dBm	Now
T0921	Flipchip	SiGe Power Amplifier for Dual- and Triple-band Cellular Phones (GSM/DCS/PCS), Single Supply Voltage +3V, $P_{OUT} = 35/32$ dBm, PAE 55/45%	June 2002
T0930	PSSOP16	2W CW Power Amplifier, 2.4V Single Supply Voltage, 47% PAE	Now
T0931	Flipchip	2W CW Power Amplifier, 2.4V Single Supply Voltage, 47% PAE	Now

Cellular Phones (Continued)

Standard RF (Cellular Infrastructure) ICs

Part Number	Package	Description	Availability
U2790B	SO16	1000 MHz Quadrature Modulator for Digital Cellular Radio Systems, Very Low Power Consumption (typ. 150 mW), 0 dBm O/P Level	Now
U2793B	SSO20	30 to 300 MHz Quadrature Modulator for Digital Cellular Radio Systems and Hybrid Fibre Coax Applications, Current Consumption 15 mA @ 5V	Now
U2794B	SSO20	1000 MHz Quadrature Demodulator for Cellular Phones and Hybrid Fibre Coax Applications, Low DC Offset $f_{IN} = 70 - 1000$ MHz	Now
U2795B	SO8	2500 MHz Up- and Down-conversion Mixer for DECT, PCN and WLAN Applications, Supply Voltage 2.7 to 5.5V, Single-ended Output, no Balun Required, Input and Output Impedance Programmable, IP3 Programmable	Now
U2796B	SO8	2000 MHz Down-conversion Mixer, Supply Voltage 2.7 to 5.5V, Very Good Isolation Characteristics, Current Consumption 3.2 mA	Now
U2891B	SSO24	Converter for Wireless Applications such as GSM, DCS1800, PCS1900, PDC, I/Q Modulator and Mixer, Low Current Consumption: 15 mA @ 3V, few External Components	Now
T0790	TSSOP16	Direct Quadrature Modulator, 800 to 2500 MHz for Infrastructure Digital Communication Systems, Very Good Carrier and Side Band Suppression, Supports Wide Band Base Input, Very Low Noise Floor Performance	Now
T0797	TSSOP16	IF Receiver/Demodulator, 65 to 300 MHz for Infrastructure Digital Communication Systems, Gain Control in 20-dB Steps, Very Low I/Q Amplitude and Phase Error, High Linearity	Now
T0780	TSSOP16	800 to 100 MHz High Linearity Active Receive Mixer for Infrastructure Digital Communication Systems, Broadband Resistance of 50 Ohm on All I/O Ports, High LO to RF Isolation, Active Mixer with Conversion Gain	Now
T0781	TSSOP16	1700 to 2000 MHz High Linearity Active Receive Mixer for Infrastructure Digital Communication Systems, Broadband Resistance of 50 Ohm on All I/O Ports, High LO to RF Isolation, Active Mixer with Conversion Gain	Now
T0782	TSSOP16	2200 to 2700 MHz High Linearity Active Receive Mixer for Infrastructure Digital Communication Systems, Broadband Resistance of 50 Ohm on All I/O Ports, High LO to RF Isolation, Active Mixer with Conversion Gain	Now

Corded Phones

Low-end Telephone ICs

Part Number	Package	Description	Availability
U3759B-N	SSO28	Low-voltage Speech Circuit and Ringer IC	Now
U3761MB-T	SSO44	One-chip Telephone, Low-voltage Speech Circuit, Dialer 3 + 10 Memories	Now

High-end Telephone ICs

Part Number	Package	Description	Availability
U3900BM	SSO44	Multi-standard Feature Phone IC, Bus Controlled, DTMF, Voice Switch, CLASS, Interface to Cordless Phones and Answering Machines	Now
U4089B	SSO44	Multi-standard Feature Phone Circuit with Voice Switch, Speech Circuit, Speaker Amplifier	Now
U4090B	SSO44	Multi-standard Feature Phone Circuit with Voice Switch, Speech Circuit, DC/DC Converter, Speaker Amplifier	Now
U4091BM	SSO44	Multi-standard Feature Phone IC, Bus Controlled, DTMF, Voice Switch, Interface to Cordless Phones and Answering Machines	Now

Modular Telephone ICs

Part Number	Package	Description	Availability
U4037B-N	SO24	Microcontroller-controlled Speech and Ringer IC, Double Power Supply for Ringer and Speech Function	Now
U4082B	SO28	Voice-switched Circuit, Fast Channel Switching for Quasi Duplex Operation	Now
U4083B	SO8	Low-power Audio Amplifier, Low Current Consumption	Now

Cordless Phones

CT0/900 MHz

Part Number	Package	Description	Availability
U3600BM	SSO44	CT0 Programmable Transceiver, One-chip RF, IF and CT0, Programmable PLL, Adjustment Free	Now
U7001BG	SSO20	GaAs Front End, LNA, Switch and PA Integrated	Now

DECT Front End ICs

Part Number	Package	Description	Availability
U2761B	SSO28	DECT RX/IF IC, Integrated Receive Path, 2.7 to 4.6V	Now
U2785B	SSO28	DECT TX/PLL, PLL, and Closed Loop Modulation, 2.7 to 4.6V	Now
U2786B	SSO28	DECT TX/PLL, PLL, and Closed Loop Modulation, 2.7 to 4.6V, $f_{(CLOCK)} = 13.8$ MHz	Now
U2801B	MLP48	Transceiver for DECT Application, Non-blind-slot Solution, VCO and Voltage Regulator Integrated, Few External Components	Now
U7004B	SSO20	SiGe DECT Front End, Power Amplifier and LNA, 2.7 to 4.6V	Now
U7006B	PSSOP16	High Efficiency SiGe PA/LNA with Control Management of Antenna Switch, Power Amplifier and LNA, 2.7 to 4.6V	Now

Cordless Phones (Continued)

ISM Front End ICs

Part Number	Package	Description	Availability
U2781B	SSO20	1.1 GHz Single PLL, Low Current Consumption: 5 mA @ 3V	Now
T0930	PSSOP16	2W CW Power Amplifier, 2.4V Single Supply Voltage, 47% PAE	Now
T0931	Flipchip	2W CW Power Amplifier, 2.4V Single Supply Voltage, 47% PAE	Now
T0980	PSSOP16	SiGe Front End for FRS Family Radio, Power Amplifier and LNA (300 to 500 MHz)	Now
T7024	PSSO20, MLF, Flipchip	Bluetooth/ISM 2.4-GHz TX/RX Front End, P _{OUT} = 23 dBm, NF = 2 dB	Now
U2766B	SSO28	900 MHz ISM Band Receiver, Single Conversion, 10.7 MHz IF, PLL Demodulator	Now

ISM 2.4 GHz

Part Number	Package	Description	Availability
T2802	MLP48	2.4 GHz Transceiver, Non-blind-slot Operation, VCO and Voltage Regulator On-chip, Only Few External Components Needed	Now

Internet Appliances & VoIP

Smart Internet Appliance Processors (SIAP™)

Part Number	Description	Availability
AT75C220	Smart Internet Appliance Processor – Ethernet, 208-lead PQFP	Now
AT75C310	Smart Internet Appliance Processor, 160-lead PQFP	Now
AT75C320	Smart Internet Appliance Processor 2, 160-lead PQFP	2H2002
AT76C901-0G208	IP Telephony Chip (VoIP) for Business Telephones (Wireless Over 802.11b) Includes Two ARM7's, an Oak DSP and Voice Codec	June 2002

Development Tools

AT75C310DEV	Development Kit for AT75C310	Now
AT75C220-DK-SMEC	Development Kit for AT75C220	Now
AT76C901-DK	Kit Includes: Main Board, Memory Board, Software Manual, Documentation	June 2002

Wireless Data Communications

SmartRF™

Part Number	Description	Availability
AT86RF211	Single Chip FSK Transceiver for ISM Applications from 400 to 930 MHz (Includes Frequency Hopping), Output Power > 12 dBm, Fast and Accurate Synthesizer Simple 100% Digital Interface, 48-lead TQFP	Now
AT86RF401	RF Wireless Data Transmitter, 264 to 456 MHz, OOK/ASK, PLL-based RF Transmitter and 8-bit AVR Microcontroller Core on Single Die, 2-volt Operation, 2K Bytes Flash Program, 128 Bytes EEPROM, 20-lead TSSOP	June 2002
AT86RF401U	RF Wireless Data Transmitter, 315 MHz, OOK/ASK, PLL-based RF Transmitter and 8-bit AVR Microcontroller Core on Single Die, 2-volt Operation, 2K Bytes Flash Program, 128 Bytes EEPROM, 20-lead TSSOP	June 2002
AT86RF401E	RF Wireless Data Transmitter, 433 MHz, OOK/ASK, PLL-based RF Transmitter and 8-bit AVR Microcontroller Core on Single Die, 2-volt Operation, 2K Bytes Flash Program, 128 Bytes EEPROM, 20-lead TSSOP	June 2002
AT86RF401X	RF Wireless Data Transmitter, 280 to 450 MHz, OOK/ASK, PLL-based RF Transmitter and 8-bit AVR Microcontroller Core on Single Die, 2-volt Operation, 2K Bytes Flash Program, 128 Bytes EEPROM, 20-lead TSSOP	June 2002

Development/Evaluation Kits and Tools

AT86RF211-DK433107	433 MHz Frequency, 2 AVR Boards (Each of Them with Daughter Board), Embedded Demos for Immediate Use, In-System Programming Possibility	Now
AT86RF211-DK868107	868 MHz Frequency, 2 AVR Boards (Each of Them with Daughter Board), Embedded Demos for Immediate Use, In-System Programming Possibility	Now
AT86RF211-DK915107	915 MHz Frequency, 2 AVR Boards (Each of Them with Daughter Board), Embedded Demos for Immediate Use, In-System Programming Possibility	Now
AT86RF211DB-BIBAND	Daughter Board Including Printed Antenna, Compatible with DK AVR Mother Board, 868 or 915 MHz	Now
AT86RF211DB-868LNA	Daughter Board Including Printed Antenna, Compatible with DK AVR Mother Board, Enhanced at 868 MHz	Now
AT86RF211DB-915LNA	Daughter Board Including Printed Antenna, Compatible with DK AVR Mother Board, Enhanced at 915 MHz	Now
AT86RF401U-EK1	315 MHz Evaluation Kit for AT86RF401U	June 2002
AT86RF401E-EK1	433.92 MHz Evaluation Kit for AT86RF401E	June 2002
AT86RF401X-EK1	264 to 456 MHz Evaluation Kit for AT86RF401X	June 2002

Wireless Data Communications (Continued)

Wireless – Data Comm

Part Number	Description	Availability
AT76C502A-0T144	11M-bit WLAN Media Access Controller, IEEE 802.11b Standard, Provides All Processing and Functionality Needed for the MAC Protocol of Wireless LANs, Auto Fallback to 5.5, 2, 1, PCMCIA Interface	Now
AT76C503A-0T128	11M-bit WLAN Media Access Controller, IEEE 802.11b Standard, Provides All Processing and Functionality Needed for the MAC Protocol of Wireless LANs, Auto Fallback to 5.5, 2, 1, USB Interface	Now
AT76C504-0Z160	11M-bit WLAN Media Access Controller + Baseband, IEEE 802.11b Standard, Provides All Processing and Functionality Needed for the Integrated MAC + BB Chip with PCMCIA Interface	June 2002
AT76C505-0Z128	11M-bit WLAN Media Access Controller + Baseband, IEEE 802.11b Standard, Provides All Processing and Functionality Needed for the Integrated MAC + BB Chip	June 2002
AT76C506-0Z160	11M-bit WLAN Media Access Controller + Baseband, IEEE 802.11b Standard, Provides All Processing and Functionality Needed for the Integrated MAC + BB Chip with PCI/Mini-PCI Interface	June 2002
AT76C507	11M Bits/second MAC Chip with a USB Host Controller Interface (Package to be Announced)	4Q2002
AT76C510-0Q128/ AT76C510-0T128	Single Chip that Bridges Wireless (802.11b) to 10/100 Ethernet (802.3)	Now
AT76C511-0L208	AT76C510 with Further Integration (Additional 10/100, UART, 32-bit EMI to SDRAM, SPI)	June 2002
Evaluation/Development Kits (Available for Prequalified Customers)		
AT76C502A-EK-RFMD	Kit Includes: Two 11M-bit PCMCIA Cards with Integrated Radio Based on RF Microdevices Radio Front-end, Firmware, Drivers, Software Manual, Documentation and Software Utilities	Now
AT76C502A-DK-RFMD	Kit Includes: One Development Board, Firmware, Drivers, Software Utilities, Software Manual, Documentation and Macless Card	Now ⁽¹⁾
AT76C503A-EK-RFMD	Kit Includes: Two 11M-bit USB Dongle Cards with Integrated Radio Based on RF Microdevices Radio Front-end, Two USB Cables, Software Utilities, Firmware, Drivers, Software Manual, Documentation	Now
AT76C503A-DK-RFMD	Kit Includes: One Development Board, USB Cable, Software Utilities, Firmware, Drivers, Software Manual, Documentation and Macless Card	Now ⁽¹⁾
AT76C510-EK	Kit Includes: Bridge Access PT Board with Integrated Intersil Radio, Two Antennas, USB Cable, Firmware, Software Manual (Does not Include any Client Cards)	Now
AT76C510-DK	Kit Includes: Bridge Board, USB Cable, Firmware, Macless Card, Software Manual, Documentation	Now ⁽¹⁾

Note: 1. Call Atmel for Availability.

Wireless Data Communications (Continued)

RF Remote Control ICs

Part Number	Package	Description	Availability
U2741B	SSO16	UHF Remote Control Transmitter for ASK and FSK Systems. One-chip PLL Transmitter with Integrated VCO	Now
U2745B	SSO16	UHF ASK Transmitter, Frequency Range 310 to 440 MHz, Supply Voltage 2.2 to 4.0V, Temperature Range -40 to +85°C	Now
U3741BM	SO20	UHF Remote Control Receiver for ASK and FSK Systems. All RF Components Integrated	Now
U3742BM	SO20	UHF Remote Control Receiver, RSSI Output for ASK and FSK Systems	Now
U3745BM	SO20	UHF ASK Receiver, Frequency Range 310 to 440 MHz, Supply Voltage 4.5 to 5.5V, Temperature Range -40 to 85°C	Now
U4311B-FS	SSO20 (0.65)	RF Receiver, 10.7 MHz, IF Amplifier, AM + FM Demodulator, Non-inverting Clamping Comparator, Low Power Consumption, Typically 1.0 mA, 105°C	Now
T5743N	SO20	UHF Remote Control Receiver, High FSK Sensitivity, 5 to 20V Automotive Compatible Data Interface, Data Clock Available for Manchester and Biphase Coded Signals	Now
T5744	SO20, SSO20	UHF Remote Control Receiver for ASK Systems/PWM Mode	Now
T5753	TSSOP8	UHF ASK/FSK Transmitter, Frequency Range 310 to 330 MHz, High Output Power	Now
T5754	TSSOP8	UHF ASK/FSK Transmitter, Frequency Range 429 to 439 MHz, High Output Power	Now
T5750	TSSOP8	UHF ASK/FSK Transmitter, Frequency Range 868 to 928 MHz, High Output Power	Now
T5760	SO20	UHF ASK/FSK Receiver, Frequency Receiving Range 868 to 870 MHz, Highest Integration Level in Market	Now
T5761	SO20	UHF ASK/FSK Receiver, Frequency Receiving Range 902 to 928 MHz, Highest Integration Level in Market	Now

Wireless Data Communications (Continued)

RF Remote Control ICs (Continued)⁽¹⁾

Part Number	Package	Description	Availability
T48C862M-R3-TN	SSO24	Complete UHF Transmitter, Flash Microcontroller and Transmitter PLL T5753 in One IC, Temperature Range -40°C to 125°C	June 2002
T48C862M-R4-TN	SSO24	Complete UHF Transmitter, Flash Microcontroller and Transmitter PLL T5754 in One IC, Temperature Range -40°C to 125°C	June 2002
T48C862M-R8-TN	SSO24	Complete UHF Transmitter, Flash Microcontroller and Transmitter PLL T5750 in One IC, Temperature Range -40°C to 125°C	June 2002
T44C862M-xxxR3-TN	SSO24	Complete UHF Transmitter, ROM Microcontroller and Transmitter PLL T5753 in One IC, Temperature Range -40°C to 125°C	June 2002
T44C862M-xxxR4-TN	SSO24	Complete UHF Transmitter, ROM Microcontroller and Transmitter PLL T5754 in One IC, Temperature Range -40°C to 125°C	June 2002
T44C862M-xxxR8-TN	SSO24	Complete UHF Transmitter, ROM Microcontroller and Transmitter PLL T5750 in One IC, Temperature Range -40°C to 125°C	June 2002

Evaluation Kits and Tools

TMEBX741A	Design Kit 433.92 MHz, 300 kHz Bandwidth, ASK Transmitter for U2741B and U3741BM	Now
TMEBX741B	Design Kit 433.92 MHz, 600 kHz Bandwidth, ASK and FSK Transmitter for U2741B and U3741BM	Now
TMEBX741C	Design Kit 315 MHz, 300 kHz Bandwidth, ASK	Now
TMEBX741D	Design Kit 315 MHz, 600 kHz Bandwidth, ASK and FSK	Now
TMEBX745A	Design Kit 433.92 MHz, 600 kHz Bandwidth, ASK, for U2745B/U3745BM	Now
TMEBX745B	Design Kit 315 MHz, 600 kHz Bandwidth, ASK, for U2745B/U3745BM	Now
TMEB57X0	Design Kit 868 MHz for T5750 and T5760	Now
TMEB57X1	Design Kit 915 MHz for T5750 and T5761	Now
TMEB5744N3	Receiver Board T5744, 315 MHz, no SAW Filter	Now
TMEB5744S3	Receiver Board T5744, 315 MHz, with SAW Filter	Now
TMEB5744N4	Receiver Board T5744, 433 MHz, no SAW Filter	Now
TMEB5744S4	Receiver Board T5744, 433 MHz, with SAW Filter	Now

Note: 1. For dedicated microcontrollers for RF Remote Control Applications, please see "4-bit Microcontrollers/MARC4 Family" on pages 65-66.

Imaging

Imaging Multimedia and Digital Broadcasting

Part Number	Description	Availability
AT76C110-0C280	Highly Integrated Solution for Digital Cameras, Supports Either CCD or CMOS Imagers, Image Display, Processing, Compression and Storage, Overall Camera Management, Based on ARM7, 30 Frame/sec Video, 15 Frame/sec Capture Mode, Supports ≤ 16 Megapixel Imagers, Interface to 16-256 SDRAM	Now
AT76C111-0C280	Digital Camera Single-chip (SD Support, 32K Bytes of Internal RAM), Shrink of AT76C110-0C280 – 0.21 Microns, Not Pin-to-pin Compatible with AT76C110-0C280	Now
AT76C112-0C208	Flash Card Playback Device, Supports Compact Flash, MMC/SD/SSFPC/Memory Stick, JPEG Compression	Now
AT76C113-0C208	Digital Camera Single-chip Low-end DSC Product, Greater Processing Power, Mini-host USB, 64 MHz ARM Subsystem with Full Cache Support, DMA Engines to Transfer Data to/from All Peripherals 1.8V Core and 3.3V I/O	Samples June 2002
AT76C114-0C208	Digital Camera Single-chip Low-end DSC Product, Greater Processing Power, Mini-host USB, 120 MHz ARM9 Subsystem with MPEG4 Hardware Support (I & P Frames) at 30 pps SVGA Resolution, DMA Engines to Transfer Data to/from All Peripherals 1.8V Core and 3.3V I/O	Samples August 2002

Evaluation Kits (Available for Prequalified Customers)

AT76C111-EK	Kit Includes: Sensor with Lens Assembly, SDRAM, Parallel Flash, LCD Viewfinder, JTAG/USB/RS232/Video Out/Audio Connector, Flash Card, Software Manual	Now
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Cameras

AVIIVA Linescan Cameras

Part Number	Description	Availability
AVIIVA M2 LV 0514	Monochrome Camera, 2 Taps Sensor, LVDS, 512 Pixels, 14 μ Pixel Size	Now
AVIIVA M2 LV 1010	Monochrome Camera, 2 Taps Sensor, LVDS, 1024 Pixels, 10 μ Pixel Size	Now
AVIIVA M2 LV 1014	Monochrome Camera, 2 Taps Sensor, LVDS, 1024 Pixels, 14 μ Pixel Size	Now
AVIIVA M2 LV 2010	Monochrome Camera, 2 Taps Sensor, LVDS, 2048 Pixels, 10 μ Pixel Size	Now
AVIIVA M2 LV 2014	Monochrome Camera, 2 Taps Sensor, LVDS, 2048 Pixels, 14 μ Pixel Size	Now
AVIIVA M2 LV 4010	Monochrome Camera, 2 Taps Sensor, LVDS, 4096 Pixels, 10 μ Pixel Size	Now
AVIIVA M2 CL 0514	Monochrome Camera, 2 Taps Sensor, Camera Link, 512 Pixels, 14 μ Pixel Size	Now
AVIIVA M2 CL 1010	Monochrome Camera, 2 Taps Sensor, Camera Link, 1024 Pixels, 10 μ Pixel Size	Now
AVIIVA M2 CL 1014	Monochrome Camera, 2 Taps Sensor, Camera Link, 1024 Pixels, 14 μ Pixel Size	Now
AVIIVA M2 CL 2010	Monochrome Camera, 2 Taps Sensor, Camera Link, 2048 Pixels, 10 μ Pixel Size	Now
AVIIVA M2 CL 2014	Monochrome Camera, 2 Taps Sensor, Camera Link, 2048 Pixels, 14 μ Pixel Size	Now
AVIIVA M2 CL 4010	Monochrome Camera, 2 Taps Sensor, Camera Link, 4096 Pixels, 10 μ Pixel Size	Now

Cameras (Continued)

40 MHz Linescan Cameras

Part Number	Rate Line/Sec	Description	Availability
TH78CA14	19000	Digital RS422 Output, $\pm 5V/+15V$ Power Supplies, High-speed 8/12-bit Linescan Cameras, 1024 x 2048 Pixels (2048 Active Pixels)	Now
TH78CD14	19000	Digital RS644 Output, 5V/+15V Power Supplies, High-speed 8/12-bit Linescan Cameras, 1024 x 2048 Pixels (2048 Active Pixels)	Now
TH78CA15	9500	Digital RS422 Output, 5V/+15V Power Supplies, High-speed 8/12-bit Linescan Cameras, 4096 Pixels (4096 Active Pixels)	Now
TH78CD15	9500	Digital RS644 Output, 5V/+15V Power Supplies, High-speed 8/12-bit Linescan Cameras, 4096 Pixels (4096 Active Pixels)	Now
TH78CE13	38000	Digital RS422 Output, +24V Power Supply, High-speed 8/12-bit Linescan Cameras, 1024 x 2048 Pixels (1024 Active Pixels)	Now
TH78CH13	38000	Digital RS644 Output, +24V Power Supply, High-speed 8/12-bit Linescan Cameras, 1024 x 2048 Pixels (1024 Active Pixels)	Now
TH78CE14	19000	Digital RS422 Output, +24V Power Supply, High-speed 8/12-bit linescan cameras, 1024 x 2048 Pixels (2048 Active Pixels)	Now
TH78CH14	19000	Digital RS644 Output, +24V Power Supply, High-speed 8/12-bit Linescan Cameras, 1024 x 2048 Pixels (2048 Active Pixels)	Now
TH78CE15	9500	Digital RS422 Output, +24V Power Supply, High-speed 8/12-bit Linescan Cameras, 4096 Pixels (4096 Active Pixels)	Now
TH78CH15	9500	Digital RS644 Output, +24V Power Supply, High-speed 8/12-bit Linescan Cameras, 4096 Pixels (4096 Active Pixels)	Now

Full Frame Cameras

Part Number	Frames /Sec	Description	Availability
Camelia™ 1.6M	10	1.6 Megapixel Digital Camera, 12-bit Output, 1536 x 1024 Pixels	Now
Camelia Color 1.6M	10	1.6 Megapixel Digital Color Camera, 3 x 12-bit Output, 1536 x 1024 Pixels	Now
Camelia 2.5M	3	2.5 Megapixel Digital Camera, 12-bit Output, 1840 x 1360 Pixels	Now
Camelia Color 2.5M	3	2.5 Megapixel Digital Color Camera, 3 x 12-bit Output, 1840 x 1360 Pixels	Now
Camelia 4M	4.3	4 Megapixel Digital Camera, 12-bit Output, 2048 x 2048 Pixels	Now
Camelia Color 4M	4.3	4 Megapixel Digital Color Camera, 3 x 12-bit Output, 2048 x 2048 Pixels	Now
Camelia 8M	2.7	8 Megapixel Digital Camera, 12-bit Output, 3500 x 2300 Pixels	Now
Camelia Color 8M	2.7	8 Megapixel Digital Color Camera, 3 x 12-bit Output, 3500 x 2300 Pixels	Now

CCD Image Sensors

CCD Linear Arrays

Part Number	Description	Antiblooming	Availability
TH7804A	1024 Pixels, 13 x 13 Pixel Size, 6000 MHz Dynamic Range, 20 MHz Maximum Data Rate, 2 Outputs	No	Now
TH7813A	1024 Pixels, 10 x 10 Pixel Size, 6600 MHz Dynamic Range, 50 MHz Maximum Data Rate, 2 Outputs	Yes	Now
TH7814A	2048 Pixels, 10 x 10 Pixel Size, 6600 MHz Dynamic Range, 50 MHz Maximum Data Rate, 2 Outputs	Yes	Now
TH7834C	12000 Pixels, 6.5 x 6.5 Pixel Size, 10000 MHz Dynamic Range, 20 MHz Maximum Data Rate, 4 Outputs	Yes	Now
TH7841A	2048 Pixels, 13 x 11 Pixel Size, 6000 MHz Dynamic Range, 20 MHz Maximum Data Rate, 2 Outputs	No	Now

CCD Area Arrays: Frame Transfer Image Sensors

Part Number	TV Standard	Description	Antiblooming	Availability
TH7868B	CCIR	2/3 Image Format, 4:3 Image Ratio, 2 x 288 Lines, 768 Pixels per Line, 4500 MHz Dynamic Range, 15 MHz Maximum Data Rate, 2 Outputs	Yes	Now
TH7887A	Progressive	1:1 Image Ratio, 1024 Lines, 1024 Pixels per Line, 10000 MHz Dynamic Range, 20 MHz Maximum Data Rate, 4 Outputs	Yes	Now
TH7888A	Progressive	1:1 Image Ratio, 1024 Lines, 1024 Pixels per Line, 1000 MHz Dynamic Range, 20 MHz Maximum Data Rate, 1 or 2 Outputs	Yes	Now

CCD Area Arrays: Full Frame Image Sensors

Part Number	Description	Availability
TH7899M	2048 x 2048 Pixels, 14 x 14 mm ² Pixel Size, 8.5V μ J/cm ² , 4 x 20 MHz Maximum Data Rate	Now

Industrial

Industrial Control

Battery Charge IC

Part Number	Package	Description	Availability
U2403B	DIP8, SO8	Current Source and Smart Timer for Slow Charge, Cost-minimized Charge Concepts for Car Adapter, Cordless Phone, Low-cost Charger	Now

Clock and Watch ICs

Part Number	Package	Description	Availability
e1217X	Dice	Standard Low-cost CMOS Watch IC, 32 kHz Crystal, Mask Options Available, High Oscillator Stability	Now
e1466D	Dice, DIP8	Clock IC with Digital Trimming, 32 kHz Crystal, Integrated Capacitors, Mask Options 1.1V to 2.2V Supply	Now
e1467D	Dice	Clock IC with Digital Trimming, 32 kHz Crystal, Same as e1466, but with Alarm Function	Now
e5130A	Dice	Low Voltage CMOS Driver Circuit, Supply Voltage 1.1 to 3.6V, Non-inverting Tri-stable Drivers	Now

DC Control IC

Part Number	Package	Description	Availability
U2352B	DIP8, SO8	PWM Control with Load-current Monitoring and Supply-voltage Monitoring, up to 50 kHz Clock Frequency, 100 mA Push-pull Output Stage for MOSFETs and IGBTs	Now

Phase Control ICs

Part Number	Package	Description	Availability
U209B	DIP14, SO16	Tacho Control IC, As U2008B + f/V Converter, Reference Voltage – Applications: All Tacho Control AC Motors	Now
U211B	DIP18, SO16	The Worldwide Standard IC for Tacho AC Motor Control, As U209B + Foldback	Now
U2008B	DIP8, SO8	Phase Control + Retrigger, Softstart or Shunt Regulation, Line-voltage Compensation, Minimal External Components	Now
U2010B	DIP16, SO16	As U2008B + Softstart, Shunt Regulation, Overload Compensation, Overload Indication, Line-voltage Compensation, Programmable Load-current Limitation	Now
U490B	DIP8, SO8	One-shot Power Control for Electric Staplers, Mains Sync. and Phase-controlled Thyristor Ignition	Now

Industrial Control (Continued)

Sensor-Controlled Timer ICs

Part Number	Package	Description	Availability
U2100B	DIP8, SO8	Timer for AC Line Applications: Motion Sensors, Fans, Hand Dryer, Stair Light, 2 and 3-wire Applications, Triac and Relay Switching on AC Line	Now
U2102B	DIP16, SO16	IGBT/FET Control Timer for Advanced Dimmer and Motion Sensor Applications, Programmable Trigger Window, Reverse Phase Control and Electronic Fuse	Now

Zero Crossing Switching IC

Part Number	Package	Description	Availability
T2117	DIP8, SO8	Standard Zero Crossing Switch, Low-cost Application, Adjustable Ramp	Now

Power Metering

Digital Power Metering

Part Number	Description	Availability
AT73C500	DSP for 3-phase kWh Meters	Now
AT73C501	6-channel ADC (Single Ended)	Now
AT73C502	6-channel ADC (Diff. Ended)	Now
AT73C540	kWh Meter Engine for 1-phase Meters	3Q2002
AT73C550	kWh Meter Engine for Advanced 1-phase Meters	3Q2002

Evaluation Kits

ATEK500	Evaluation Kit for AT73C500 and AT73C501 Chip Set	Now
ATEK550	Evaluation Kit for AT73C550	Now

Multimedia

Audio

Audio ICs

Part Number	Description	Availability
AT76C202-0T100	Dolby Digital AC-3 is a Perpetual Digital Audio Coding Technique, Capable of Producing Up to Six Channels (5.1) of Sound. It May Be Implemented as the Audio Format for MPEG-2-based Systems. The AC-3 Standard Allows for a Variable Number of Audio Channels.	Now
AT76C210-0C128	Highly Integrated Audio Processor for Hand-held Devices Running MP3, WMA, AAC, Including USB, DACs and Voice Codecs, 128-ball BGA Package	Now
AT76C210-0C208	Highly Integrated Audio Processor for Hand-held Devices Running MP3, WMA, AAC, Including USB, DACs and Voice Codecs, 208-ball BGA Package	Now
Development Kits (Available for Prequalified Customers)		
AT76C210-DK	Kit Includes: Main Board, Software Manual and Schematics	June 2002

Audio Receiver ICs

Part Number	Package	Description	Availability
U4065B	SO24	High-performance FM Front End without RF Preamplifier, Unique Interference Sensor, New AGC Concept with 3 Loops	Now
TDA1083	DIP16	AM/FM Receiver and Audio Amplifier, 0.7W AF Output Power, High AM Sensitivity, FM/IF Amplifier	Now
U2510B	SDIP28	All-band AM/FM Receiver and Audio Amplifier, 1W AF Output Power, DC Mode Control for AM, FM, and Tape, Superior Strong-signal Behavior	Now
U4254BM	SO16	Low-noise AM/FM Antenna Amplifier, Excellent FM Low-noise Performance, FM Amplifier Overload Protection (AGC), AM Low-noise Output Voltage, High Intercept Point 2nd-order for AM	Now
U4255BM	SSO44	AM/FM Car Radio Receiver with Digital Tuning and Electronic Filter Adjustment, Receiving Condition Analyzer and Adjacent Channel/Multipath Noise Cancellation, Superior Noise Suppression by Software-controlled Filter Adjustment, Completely Integrated FM Demodulator. A Variable Bandfilter Replaces Expensive External Ceramic Filter.	Now
T4258	SSO44	AM/FM Car Radio Receiver for a Global Reception Concept with Digital Tuning and Electronic Filter Adjustment, Pin Compatible to U4255BM, Receiving Condition Analyzer and Adjacent Channel/Multipath Noise Cancellation, Superior Noise Suppression by Software-controlled Filter Adjustment, Completely Integrated FM Demodulator. A Variable Bandfilter Replaces Expensive External Ceramic Filter.	Now
T4260	SSO44	AM/FM Tuner Front End for Digital Radio Solutions. Integrated Fast Fractional PLL, Up-/Down-conversion System, IF Frequencies up to 25 MHz, DACs for Automatic Tuner Alignment, High S/N Ratio, Compatible for 3/5V Microcontrollers.	Now

Audio (Continued)

Audio Receiver ICs (Continued)

Part Number	Package	Description	Availability
U4256BM	SSO20	Frequency Synthesizer for Radio Receivers, Three DACs for Automatic Tuner Adjust, e.g., with U4255BM	Now
U4285BM	SSO20	AM/FM PLL (for RDS Application), High Signal-to-noise Ratio, 4 Switching Outputs, Integrated Push-pull Stage, Fast Response Time (for RDS)	Now
U4289BM	SO16	AM/FM PLL (for RDS Application), Reference Oscillator up to 15 MHz, High Signal-to-noise Ratio, 1 Switching Output, Integrated Loop-push-pull Stage	Now

Digital Audio Broadcasting (DAB) ICs

Part Number	Package	Description	Availability
U2731B	SSO44	DAB One-chip Front-end Receiver with High Integration Level	Now
U2730B	SSO28	L-band Down-converter Inclusive PLL for DAB Receivers, High Linear Amplifier, AGC Dynamic Range >30 dB, VCO, 4 Reference Divide Factors Selectable, Mixer, Tri-state Phase Detector with Programmable Charge Pump	Now
U2739M	TQFP100	DAB One-chip Channel and Source Decoder, Supports Mode I, II, III and IV According to ETS 300401; User-defined Synchronization Strategy; Power Supply 3.3 V	Now

MP3 Decoder

Part Number	Description	Availability
AT89C51SND1	Microcontroller with 64K Bytes Flash and 4K Bytes Bootloader, 2304 Bytes RAM, MP3 Decoder, TWI, USB, SPI, I2S, Man Machine Interface, 10-bit ADC	Now
AT83C51SND1	Microcontroller with 64K Bytes ROM and 2304 Bytes RAM, MP3 Decoder, TWI, USB, SPI, I2S, Man Machine Interface, 10-bit ADC	Now

Radio-controlled Clock

Time-code Receivers ICs

Part Number	Package	Description	Availability
U4223B	SSO20	Radio-controlled Clock Receiver for 40 to 80 kHz, Extremely Low Power Consumption, Very High Sensitivity, Very High Selectivity by Using 2 Crystals, 4-bit ADC Output	Now
T4227	Die, SSO16	Radio-controlled Clock Receiver for 40 to 80 kHz, Extremely Low Power Consumption, Very High Sensitivity, Very High Selectivity	Now

Video

Video

Part Number	Description	Availability
AT76C301-0Q208	Core Only	IP Core Only

Digital Video Broadcast (DVB®)

Part Number	Description	Availability
T90FJR	Dual Common Interface Hardware Controller – CIMaX™	Now
AT76C651B-0T144	Integrated DVB-compliant QAM Demodulator with Integrated ADC (Annex A, C Support)	Now
AT76C652-0T128	Integrated DVB-compliant QAM Demodulator with Integrated ADC (Annex A, B, C Support)	3Q2002

Evaluation Kits (Available for Prequalified Customers)

AT76C651B-EK	Kit Includes: Board, Parallel Printer Cable, Software Manual, Documentation	Now
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TV/VCR ICs

Part Number	Package	Description	Availability
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Sound IF ICs

U2860B	DIP14, SO14	Double FM Demodulator (Stereo), $V_S = 5V$, Completely Alignment-free	Now
U2861B	DIP14, SO14	FM Demodulator (Mono), $V_S = 5V$, Completely Alignment-free	Now
U4467B	DIP16	AM Demodulator, $V_S = 5V$, Alignment-free	Now
U4468B	DIP16	QSS + AM Demodulator, $V_S = 5V$, PLL-controlled QSS Mixer	Now
U4488B	DIP16	QSS + AM Demodulator, $V_S = 5V$, PLL-controlled QSS Mixer, Two IF Inputs	Now

Video and Sound IF ICs

TDA4470	SDIP28, SO28	Multi-standard Video IF (Neg/Pos) and Quasi Parallel Sound Processing (FM, NICAM, AM), $V_S = 5V$, FPLL Detection, AFC, Alignment-free AM Demodulator, Three IF Inputs, Pin Compatible with TDA4472	Now
TDA4472	SDIP28, SO28	Video IF (Neg) and Quasi Parallel Sound Processing (FM, NICAM), $V_S = 5V$, FPLL Detection, AFC, Three IF Inputs, Pin Compatible with TDA4470	Now
TDA4474	SDIP30	Multi-standard Video IF (Neg/Pos) and Quasi Parallel Sound Processing (FM, NICAM, AM), $V_S = 5V$, FPLL Detection, AFC, Alignment-free AM Demodulator, Four IF Inputs	Now

PLL ICs

U6224B	SO16	1.3 GHz PLL for TV, Two-wire Bus Interface and 3-wire Bus (UNI-BUS), 5-level ADC, Read/Write Mode	Now
U6239B	SO16	2.9 GHz PLL for SAT-TV Tuner and Receiver, Two-wire Bus Interface and 3-wire Bus (UNI-BUS), 5-level ADC, Read/Write Mode	Now

Baseband ICs

U3665M	DIP16, SO16	TV Baseband Delay Line, Alignment-free, Integrated 64 ms Delay	Now
U3666M	DIP16, SO16	TV Baseband Processor Delay Line, Improved Version of U3665M (Latch-up)	Now

Dream[®] Sound Synthesis

Dream Sound Synthesis ICs

Part Number	Package	Description	Availability
SAM9703	TQFP100	Professional Integrated Synthesizer	Now
SAM9707	TQFP144	Integrated Sound Studio	Now
SAM9708	TQFP144	128-voice Integrated Sound Synthesizer	Now
SAM9713	TQFP80	Low-cost Integrated Synthesis with Effects	Now
SAM9723	TQFP144	ADPCM and MIDI Player	Now
SAM9733	PQFP100	Integrated Synthesizer with Effects	Now
SAM9743	PQFP100	Single-chip Music System	Now
SAM9753	TQFP144	Integrated Digital Musical Instrument	Now
SAM9755	CBGA100	Mobile Phone Sound Synthesizer	Now
SAM9773	TQFP80	Single-chip Synthesizer with Effects, Serial Interface	Now
SAM9777	PQFP100 or TQFP100	Single-chip Multimedia Sound System, PCI Bus	Now
SAM9793	PQFP100	Single-chip Synthesizer with Effects, Parallel Interface	Now

IR Control

IR Receiver ICs

Part Number	Package	Description	Availability
U2535B	SO8	IR Preamplifier, Typically 0.26 mA Standby Current, 20 to 100 kHz, Low Power Consumption	Now
U2538B	SO8	IR Preamplifier, Typically 0.55 mA Standby Current, 20 to 60 kHz, Only 3 External Components Required	Now
T2525N	Wafer, SO8	IR Receiver Circuit, 5V, no External Components Required, High Noise Suppression, High Sensitivity	Now
T2526N	Wafer, SO8	IR Receiver Circuit, 2.7 to 5.5V, no External Components Required, High Noise Suppression, High Sensitivity	Now
T2527N	Wafer, SO8	IR Receiver Circuit, 2.7 to 3.6V, High Bandpass Accuracy, High ESD Capability, no External Components Required, High Noise Suppression, High Sensitivity	June 2002

Security and Smart Card ICs

RF Identification

Secure ICs for Smart Cards – Contactless (RFID)

Part Number	EEPROM Memory	Features	Availability
AT88RF020	2K Bits	ISO 14443-2B/-3 Compliant	Now
AT88RF256-12	256 Bits	125 kHz Read/Write RFID Transponder with Passwords and Data Locking	Now
AT88RF256-13	256 Bits	13.56 MHz Read/Write RFID Transponder	Now
AT24RF08C	8K Bits	Read/Write Multi-tag, Asset Identification Transponder with Serial Interface	Now
AT88RF001	256 Bits	13.56 MHz RFID External Memory Interface Chip	Now
Evaluation Kits			
AT24RF08-EK	Evaluation Kit for AT24RF08C		Now
AT88RF256-13-EK	Evaluation Kit for AT88RF256-13		Now

RF-Identification/Immobilization ICs

Part Number	Package	Description	Availability
<i>Transponder ICs 125 kHz (100 to 150 kHz)</i>			
e5530	DOW Noncutted, DIT, SO8	RFID Read-only IDIC™, up to 128-bit ROM, Different Codings/Modulations and Bitrates FDX-B, ISO 11784/11785 Compatible	Now
e5551	DOW Noncutted, DIT, SO8, Micromodule	RFID Read/Write IDIC, 264 Bits, Different Codings/Modulations and Bitrates Configurable, Multi-tag Use, Memory Protection against Unauthorized Access, OTP Functionality	Now
T5554	Die on Stick, Tape	RFID Read/Write IDIC – Suited for Direct Coil Connection, Compatible to e5551, Capacitance on Chip (up to 220 pF), Au-Mega Pads for Thermo Compression Bonding Method	Now
T5557	DOW Noncutted, DIT, SO8, Micromodule	RFID Read/Write IDIC for Contactless Identification, Backward Compatible to e5551 (330-bit R/W Memory), 64-bit Unique TAG ID, Improved Operating Performance, High Temperature Data Retention, Optional 75 pF Capacitor on Chip, ISO 11784/11785 Programmable	Now
e5561	DOW Noncutted	RFID Read/Write IDIC for Highly Sophisticated Security Demands, “Copy Protection”, 256-bit R/W Memory, up to 128-bit Secret Key for Authentication, Password Protection, Different Codings and Bitrates	Now

RF Identification (Continued)

RF-Identification/Immobilization ICs (Continued)

Part Number	Package	Description	Availability
Reader IC			
U2270B	SO16	Read/Write Base Station IC, 100 to 150 kHz Carrier Frequency, Amplitude Modulation Typically up to 5K Baud, Manchester/Biphase RF/32, RF/64, RF/128	Now
Transponders			
TK5530	Plastic Package (PP)	Read-only Transponder, 125 kHz, Low-power/Low-voltage CMOS, no Battery Supply, Small Size, 128-bit ROM, RF/32, Manchester, Defined Header	Now
TK5551	Plastic Package (PP)	Read/Write Transponder, Option Configurable, 125 kHz, AOR Feature for Multi-tag Access	Now
TK5552	Plastic Package (PP)	125 kHz Read/Write Transponder, Manchester RF/16, RF/32, 1K-bit EEPROM	Now
TK5561	Plastic Package (PP)	Read/Write Transponder for Highly Sophisticated Security Applications, 125 kHz Carrier Frequency, Encryption Algorithm, 9 x 32-bit EEPROM, Low-power/Low-voltage CMOS, no Battery Supply, Small Size, Manchester/Biphase, RF/32, RF/64	Now
U3280M	SSO16	Transponder Interface for Microcontroller, Contactless Power Supply and Communication Interface, 32 x 16-bit EEPROM, Serial Interface, Field Clock Extractor, Field and Gap Detection for Wake-up and Data	Now
U9280M	SSO20	4-bit Microcontroller Plus Transponder Front End for Combination of Remote Control and Immobilizer Functions, ROM Mask Version for >200 kpcs/a, Maximum Flexibility for Algorithm/Protocol of Data Transfer, well Suitable in Combination with the U2741B, Integrated Power Management (Battery or RF-field Power Supply)	Now
Transponder Module			
T5551	Module	Read/Write Transponder Module, Function Equal to e5551, Integrated Capacitor with 330/435 pF	Now
T5552	Module	Read/Write Transponder Module with 1K-bit Memory, Options Configurable, 435 pF Capacitor Integrated	Now
Development/Evaluation Kits and Tools			
TMEB8704	Design Kit for 125 kHz, Supports the x55xx RFID Product Family		Now

PC Security

Embedded Security Processors

Part Number	I/O Interface	Description	Availability
AT90SP0801	SMBus	Embedded Security Processor for PCs, Secure Key Storage (2 Keys), 1024/RSA Sign-in 700 ms	Now
AT97SC3201	LPC	Fully TCPA Compliant Security Processor, Secure Key Storage (10+ Keys), RNG, SHA-1, Software Auditing, 1024/RSA Sign-in 100 ms	Now

Secure Memories

Smart Card ICs – CryptoMemory™ (Asynchronous Secure Memory)

Part Number	Organization	Voltage	Description	Availability
AT88SC0104C	4 (32 x 8)	2.7 - 5.5V	1K-bit User Memory with Authentication and Encryption	Now
AT88SC0204C	4 (64 x 8)	2.7 - 5.5V	2K-bit User Memory with Authentication and Encryption	Now
AT88SC0404C	4 (128 x 8)	2.7 - 5.5V	4K-bit User Memory with Authentication and Encryption	Now
AT88SC0808C	8 (128 x 8)	2.7 - 5.5V	8K-bit User Memory with Authentication and Encryption	Now
AT88SC1616C	16 (128 x 8)	2.7 - 5.5V	16K-bit User Memory with Authentication and Encryption	Now
AT88SC3216C	16 (256 x 8)	2.7V - 5.5V	32K-bit User Memory with Authentication and Encryption	3Q2002
AT88SC6416C	16 (512 x 8)	2.7 - 5.5V	64K-bit User Memory with Authentication and Encryption	3Q2002
AT88SC12816C	16 (1,024 x 8)	2.7 - 5.5V	128K-bit User Memory with Authentication and Encryption	3Q2002
AT88SC25616C	16 (2,048 x 8)	2.7 - 5.5V	256K-bit User Memory with Authentication and Encryption	3Q2002

Evaluation/Development Kits

AT88SC1616C-EK	1K to 16K CryptoMemory Evaluation Kit	Now
AT88SC1616C-DK	1K to 16K CryptoMemory Development Kit Including Source Code	Now

Smart Card ICs – Vocal Authentication

Part Number	Organization	Voltage	Description	Availability
AT88SCV002	256 x 1	2.4 - 5.5V	2-wire, 256-bit EEPROM with Security for Online Authentication	Now

Secure Memories (Continued)

Smart Card ICs – Secure Memory

Part Number	Organization	Voltage	Description	Availability
Secure Memory ICs with Password				
AT88SC101	1,024 x 1	2.7 - 5.5V	1K EEPROM with Password Security, One 1,024-bit Zone	Now
AT88SC102	2 (512 x 1)	2.7 - 5.5V	1K EEPROM with Password Security, Two 512-bit Zones	Now
AT88SC1003	2 (256 x 1) + 512 x 1	4.5 - 5.5V	1K EEPROM with Password Security, Three Zones	Now
Secure Memory ICs with Password and Authentication				
AT88SC153	3 (512 x 1)	2.7 - 5.5V	1.5K EEPROM with Authentication, Three 512-bit Zones	Now
AT88SC1608	8 (2K x 1)	2.7 - 5.5V	16K EEPROM with Authentication, Eight 2K-bit Zones	Now
Evaluation/Development Kits				
AT88SC153-EK	AT88SC153 Evaluation Kit and Application Examples			Now
AT88SC153-DK	AT88SC153 Development Kit Including Secure Function			Now
AT88SC1608-EK	AT88SC1608 Evaluation Kit and Application Examples			Now
AT88SC1608-DK	AT88SC1608 Development Kit Including Secure Function			Now

Secure Memories (Continued)

Smart Card ICs – Serial Memory

Part Number	Organization	Voltage	Description	Availability
Serial EEPROMs (2-wire)				
AT24C01ASC	128 x 8	2.7 - 5.5V	2-wire, 1K-bit Serial EEPROM	Now
AT24C02SC	256 x 8	2.7 - 5.5V	2-wire, 2K-bit Serial EEPROM	Now
AT24C04SC	512 x 8	2.7 - 5.5V	2-wire, 4K-bit Serial EEPROM	Now
AT24C08SC	1,024 x 8	2.7 - 5.5V	2-wire, 8K-bit Serial EEPROM	Now
AT24C16SC	2,048 x 8	2.7 - 5.5V	2-wire, 16K-bit Serial EEPROM	Now
AT24C32SC	4,096 x 8	2.7 - 5.5V	2-wire, 32K-bit Serial EEPROM	Now
AT24C64SC	8,192 x 8	2.7 - 5.5V	2-wire, 64K-bit Serial EEPROM	Now
AT24C128SC	16,384 x 8	2.7 - 5.5V	2-wire, 128K-bit Serial EEPROM	Now
AT24C256SC	32,768 x 8	2.7 - 5.5V	2-wire, 256K-bit Serial EEPROM	Now
AT24C512SC	65,536 x 8	2.7 - 5.5V	2-wire, 512K-bit Serial EEPROM	Now
AT24C1024SC	131,072 x 8	2.7 - 5.5V	2-wire, 1,024K-bit Serial EEPROM	Now
Serial EEPROMs (3-wire)				
AT93C46SC	128 x 8/64 x 16	2.7 - 5.5V	3-wire, 1K-bit Serial EEPROM	Now
Serial DataFlash				
AT45DB041BSC	2,048 x 264 x 8	2.7 - 3.6V	SPI, 4M-bit, Serial DataFlash	Now
Evaluation/Development Kits				
AT45DB041BSC-EK	Evaluation Kit and Application Examples			June 2002
AT45DB041BSC-DK	Development Kit Including Source Code			June 2002

Secure Microcontrollers

Secure Microcontrollers for Smart Card Applications – AT90SC Family⁽¹⁾

Part Number	RAM	ROM	FLASH	EEPROM	Power Supply	Crypto Engine	Other Features	Availability
AT90SC4816R	1.5K	48K	0	16K	3V - 5V	No		Now
AT90SC9616RC	3K	96K	0	16K	3V - 5V	Yes	Hardware DES, CRC, C.C. EAL4+ Target	June 2002
AT90SC3232	1.5K	0	32K	32K	3V - 5V	No		Now
AT90SC3232C	3K	0	32K	32K	3V - 5V	Yes	RSA 1024-bit, C.C. EAL4+ Target	Now ⁽²⁾
AT90SC6432R	2K	64K	0	32K	3V - 5V	No	Cyclic Redundancy Check (CRC)	Now
AT90SC320856	1.5K	32K	8K	56K	3V - 5V	No		Now
AT90SC6464C	3K	0	64K	64K	3V - 5V	Yes	Hardware 3DES, CRC, RSA 1956-bit, C.C. EAL1+ and VL3 Awarded ⁽³⁾	Now
AT90SC19264RC	6K	192K	0	64K	3V - 5V	Yes	Hardware 3DES, CRC, RSA 3856-bit, ECC, C.C. EAL4+ Target	June 2002
AT90SC6464C-USB	3K	0	64K	64K	3V - 5V	Yes	On-chip USB Full-Speed Interface, CRC, DES, RSA 1956-bit, C.C. EAL4+ Target	Now

Development Tools

AT90SC Family Emulation Platform Support

ATV1-xxxx	Voyager Development Tool Base Platform for All AT05SC, AT90SC, AT91SC Families Microprocessors							Now
AT90SC-TEM	Voyager Platform Customization Board for the AT90SC6464C, -320856, -19264RC, and -6464C-USB							Now
AT90SCSDK	Software Development Kit for AT90SC3232, AT90SC3232C, AT90SC4816R and AT90SC6432R							Now

AT90SC Family Simulation Platform Support

AT90SCSIM	AT90SC Family Simulator							Now
AT90SCSPBR	Serial Peripheral Board for use with All AT90SC Family Software Simulators							Now

- Notes:
1. All AT90SC family products have OTP (One Time Programmable) EEPROM area, out of bounds detectors and RNG (Random Number Generator).
 2. The AT90SC3232C product available now is a 0.5 micron device with 1K of RAM and is not a Common Criteria EAL4+ Target. EAL4+ version available in 3Q2002.
 3. VL3: Visa Level 3.

Secure Microcontrollers (Continued)

Secure Microcontrollers for Smart Card AT91SC Family

Part Number	RAM	ROM	FLASH	EEPROM	Power Supply	Crypto Engine	Other Features	Availability
AT91SC25672RC ⁽¹⁾	8K	256K	0	72K	3V - 5V	Yes	Hardware DES, CRC, RSA 3856-bit, ECC, Common Criteria EAL4+ Target	3Q2002

Note: 1. ARM's SecureCore Family-based product (32-bit RISC).

High-end Security Products – ARM-based

Part Number	Program Memory ROM	User Memory Flash/EEPROM	SRAM	Power Supply	Crypto Engine	I/O	Availability
AT91SC321RC	96K Bytes	64K Bytes	5K Bytes	3.3V - 5V	DES, PKI Skipjack	USB, ISO7816, SMBUS, SPI	June 2002

Development Tools

ATV1-xxxx	Voyager Development Tool Base Platform for All AT05SC, AT90SC, AT91SC Families Microprocessors						Now
AT91SC321SDT	Software Development Toolkit for AT91SC321RC						Now

Secure Microcontrollers (Continued)

Secure Microcontrollers for Smart Card Applications – AT05SC Family

Part Number	RAM	ROM	FLASH	EEPROM	Power Supply	Crypto Engine	Other Features	Availability
AT05SC1604R	1K	16K	0	4K	3V - 5V	No	OTP EEPROM area, VL3 + C.C. EAL4+ Target ⁽¹⁾	Now
AT05SC2408R	512	24K	0	8K	3V - 5V	No	OTP EEPROM area	Now
AT05SC3208R	1K	32K	0	8K	3V - 5V	No	OTP EEPROM Area, Hardware DES, Common Criteria EAL4+ Target	Now
AT05SC4808RF	1K	48K	0	8K	3V - 5V	No	Dual Interface: Contact (ISO7816) and Contactless (ISO14443-B) DES, C.C. EAL4+ Target	June 2002

Development Tools

AT05SC Family Emulation Platform Support

AT05SC3208R-EM3-E	AT05SCEM3R Emulation Platform Support for the AT05SC3208R	Now
AT05SC2408R-EM3	AT05SCEM3R Emulation Platform Support for the AT05SC2408R	Now
AT05SC1604R-EM3	AT05SCEM3R Emulation Platform Support for the AT05SC1604R	Now

AT05SC Family Simulation Platform Support

AT05SCSPBR	Serial Peripheral Board for use with All AT05SC Family Software Simulators	Now
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Note: 1. VL3: Visa Level 3 awarded.

Biometrics

FingerChip™

Part Number	Voltage	Description	Evaluation Board	Availability
FCD4B14C	3.3 to 5.0V	500 dpi, 0.4 mm x 14.0 mm Digital Fingerprint Linear Sensor, 2240 Pixels (8 x 280) Image Array, Digital Output (On-chip ADC) 20-pin DIL Package	"Sweepie" USB Scanner	Now
AT77C101B-CB01C	3.3 to 5.0V	500 dpi, 0.4 mm x 14.0 mm Digital Fingerprint Linear Sensor, 2240 Pixels (8 x 280) Image Array, Digital Output (On-chip ADC)	"Bioki" USB Scanner	Now
AT77C101B-CB02C	3.3 to 5.0V	500 dpi, 0.4 mm x 14.0 mm Digital Fingerprint Linear Sensor, 2240 Pixels (8 x 280) Image Array, Digital Output (On-chip ADC) with Board to Flex Connector		Now

Other ASSPs

Power Management

Regulators

Part Number	Description	Availability
RE023	2.7V/160 mA LDO Voltage Regulator	Now
RE024	2.8V/160 mA Dual-mode LDO Voltage Regulator	Now
RE025	Programmable 2.9V or 2.9V/30 mA Low-noise LDO Voltage Regulator	Now
RE027	2.8V/130 mA Low-noise LDO Voltage Regulator	Now

Storage Products

Storage Products – Digital Versatile Disk

Part Number	Description	Package	Availability
AT78C1501	DVD/CD Interface Controller Ultra DMA 66 Mb/s	208-lead LQFP	Now
AT78C1502	DVD/CD Servo Controller	128-lead LQFP	Now
AT78C1503	DVD/CD Read Channel 160 Mb/s	100-lead LQFP	Now
AT78C1504	DVD/CD Laser Power Controller	48-lead LQFP	Now
AT78C1505	DVD/CD Read Pre-Amp	48-lead LQFP	Now

DVD and CD-RW Laser Driver ICs

Part Number	Description	Package	Availability
T0800	Five Channel Laser Driver with RF Oscillator and Two Optional Outputs, Total Output Current to 300 mA, Rise Time 1.0 ns, Fall Time 1.1 ns, Control of Frequency and Swing by Use of 4 External Resistors, Gain = 100	SSO24, MLF28	Now
T0806	Three Channel Laser Driver with RF Oscillator and Two Optional Outputs, Total Output Current to 300 mA, Rise Time 1.0 ns, Fall Time 1.1 ns, Control of Frequency and Swing by Use of 3 External Resistors, Gain = 100	SSO16, MLF16	Now
T0810	Three Channel Laser Driver with RF Oscillator and APC Amplifier, Total Output Current to 200 mA, Rise Time 1.0 ns, Fall Time 1.1 ns, Control of Frequency and Swing by Use of 2 External Resistors, Gain = 400	SSO16	Now
T0815	Three Channel Laser Driver with RF Oscillator and APC Amplifier, Total Output Current to 300 mA, Rise Time 1.0 ns, Fall Time 1.1 ns, Control of Frequency and Swing by Use of 2 External Resistors, Gain = 400	SSO16	Now
T0816	Three Channel Laser Driver with RF Oscillator, Total Output Current to 300 mA, Rise Time 1.0 ns, Fall Time 1.1 ns, Control of Frequency and Swing by Use of 2 External Resistors, Gain = 100 to 250	SSO16	Now
T0820	Four Channel Laser Driver with RF Oscillator, Total Output Current to 300 mA, Rise Time 1.0 ns, Fall Time 1.1 ns, Control of Frequency and Swing by Use of 2 External Resistors, Gain = 100	SSO16	Now

USB Controllers

AT43/AT76 Series AVR USB Microcontrollers and USB Hubs

Part Number	Description	Availability
AT43301	Low-cost USB Hub Controller, 24-lead SOIC or 32-lead LQFP	Now
AT43312A	Full Function USB Hub Controller, 32-pin PDIP, 32-lead SOIC or 32-lead LQFP	Now
AT43USB320A	AVR Microcontroller with USB Hub and Embedded Function Controller, 100-lead LQFP	Now
AT43USB325E	USB Keyboard Controller with Embedded 4 Port Hub, 64-lead LQFP	Now
AT43USB326	USB Keyboard Controller with Embedded 2 Port Hub, 48-lead LQFP or 48-pin PDIP	Now
AT43USB355E	USB Microcontroller with ADC, PWM, Embedded 2 Port Hub and 24K Bytes of Program RAM	Now
AT43USB355M	USB Microcontroller with ADC, PWM, Embedded 2 Port Hub and 24K Bytes of ROM	Now
AT76C711-0T64/ AT76C711-0Z64	Full-speed USB to Fast Serial Asynchronous Bridge-based on a High-Speed AVR Microcontroller	Now
Evaluation/Development Kits		
AT43DK301	Evaluation Kit for AT43301	Now
AT43DK312A	Evaluation Kit for AT43312A	Now
AT76C711-EK	Evaluation Kit Includes: Board, Firmware, Drivers, Schematics, Demo Software and Manual	Now
AT43DK320A	Development Kit for AT43USB320A/AT43USB321	Now
AT43DK326	Development Kit for AT43USB324	Now
AT43DK355	Development Kit for AT43USB355E/AT43USB355M	Now

ASICs

Cell-based ASICs

Part Number	Description	Availability
ATC13	0.13-micron 4/8-layer Metal CMOS, 1.2-volt Operation	2H2002
ATC18	0.18-micron 4/6-layer Metal CMOS, 1.8-volt to 0.9-volt Operation	Now
ATC18/EE	0.18-micron 4/6-layer Metal CMOS with Embedded EEPROM, 1.8-volt to 0.9-volt Operation	2H2002
ATC20	0.21-micron 3/5-layer Metal CMOS, 1.95-volt to 1.65-volt Operation	Now
ATC20/Flash	0.21-micron 3/5-layer Metal Flash with Embedded CMOS, 1.45-volt to 1.65-volt Operation	Now
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/EE	0.25-micron 3/5-layer Metal CMOS with Embedded EEPROM, 2.5-volt to 0.9-volt Operation	Now
ATC35/EE	0.35-micron 3/4-layer Metal CMOS with Embedded EEPROM, 3.3-volt to 1.8-volt Operation	Now
ATC35/Flash	0.35-micron 3/4-layer Metal Flash with Embedded CMOS, 3.3-volt to 1.8-volt Operation	Now

Complex ASIC Cores

Part Number	Description	Availability
Memory Blocks	RAM, Dual-port RAM, ROM, Flash, EEPROM	Now
MCU/DSP Cores	ARM920T™, ARM946E-S™, ARM7TDMI™ (ARM® Thumb®), MIPS64™, AVR®, OakDSPCore®, PalmDSPCore®, TeakDSPCore®, mAgic Modular VLIW Computation Core	Now
ARM System Peripherals	Bus Interface, Arbiter, Bridge, Cache Memory and Bus Interface Unit, Debug Unit	Now
ARM Peripherals	Advanced Interrupt Controller, Advanced Power Management Controller, Burst Flash Controller, Data Encryption Standard, Ethernet MAC, External Bus Interface, Multimedia Card Interface, Parallel Input/Output, Peripheral Data Controller, Real-time Clock, SDRAM Controller, Serial Peripheral Interface, Static Memory Controller, Synchronous Serial Controller, System Timer, Timer/Counter, Triple DES, Two-wire Interface, USART, USB V1.1 Device, Watchdog Timer	Now
AVR-compatible 8-bit Peripherals	Real-time Clock, Serial Peripheral Interface, Timer/Counter, UART, USB V1.1 Device, Watchdog Timer	Now
Analog Cells	ADC, Bandgap Reference, Comparator, DAC, LCD Driver, OpAmp, Oscillator, PLL	Now
Wireless Baseband	ASF01 GSM Voice Codec	Now
Macrocells	AT40K FPGA, AT8032 MCU, AT146818 RTC, AT16C450 UART, CAN 2B, Ethernet MAC	Now

ASICs (Continued)

FPGA/CPLD Conversion: ULCs

Part Number	Technology	Max. Kgates	Max. I/Os	Supply (Volts)			Availability
				Core	I/O Tolerant	Other	
UG2	0.5 μm	360	420	5	5		Now
UA1	0.35 μm	1400	700	3.3	5		Now
UA1E	0.35 μm	780	976	3.3	5	Embedded DPRAM up to 390K-bit	Now
UA2	0.25 μm	3800	976	2.5	3.3		June 2002
	0.18 μm	10000	1020	1.8	2.5		1Q2003

Gate Arrays/Embedded Arrays

Part Number	Gates	Pins	Description	Availability
ATL13 Series	40M	Up to 2500	0.13-micron CMOS Gate Array/Embedded Array, 1.2-volt Operation, 35 Versions with Various Pin and Gate Counts	2H2002
ATL18/EE	22M	Up to 2000	0.18-micron CMOS Embedded Array Combining Logic and EEPROM Memory, 1.8-volt Operation, Various Gate Counts, Up to 16M-bit EEPROM Memory	2H2002
ATL18/Flash	22M	Up to 2000	0.18-micron CMOS Embedded Array Combining Logic and Flash Memory, 1.8-volt Operation, Various Gate Counts, Up to 64M-bit Flash Memory	2H2002
ATL18 Series	22M	Up to 2000	0.18-micron CMOS Gate Array/Embedded Array, 1.8-volt Operation, 30 Versions with Various Pin and Gate Counts	Now
ATL25 Series	Up to 6.9M	Up to 976	0.25-micron CMOS Gate Array/Embedded Array, 2.5-volt Operation, 23 Versions with Various Pin and Gate Counts	Now
ATL25/EE 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, Up to 4M-bit EEPROM Memory	June 2002
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, Up to 32M-bit Flash Memory	June 2002

ASICs (Continued)

Gate Arrays/Embedded Arrays (Continued)

Part Number	Gates	Pins	Description	Availability
ATL35 Series	Up to 2.7M	Up to 976	0.35-micron CMOS Gate Array/Embedded Array, 2.5-volt or 3.3-volt Operation, 23 Versions with Various Pin and Gate Counts	Now
ATL35/EE Series	Up to 2.7M	Up to 976	0.35-micron Embedded Array Combining CMOS Logic and EEPROM Memory, 2.5-volt or 3.3-volt Operation, Various Gate Counts, Up to 512K-bit EEPROM Memory	Now
ATL35/Flash Series	Up to 2.7M	Up to 976	0.35-micron Embedded Array Combining CMOS Logic and Flash Memory, 2.5-volt or 3.3-volt Operation, Various Gate Counts, Up to 4M-bit Flash Memory	Now
ATLS60 Series	Up to 88K	Up to 256	0.6-micron CMOS Gate Array/Embedded Array, 2.0-volt, 3.3-volt and 5.0-volt Operation, Staggered Row Bond Pads, 8 Versions with Various Pin and Gate Counts	Now
ATL60 Series	Up to 590K	Up to 480	0.6-micron CMOS Gate Array/Embedded Array, 2.0-volt, 3.3-volt and 5.0-volt Operation, 16 Versions with Various Pin and Gate Counts	Now
Processor Cores			ARM7TDMI, ARM946E-S™, ARM920T™, AVR RISC, MIPS64™, 5Kf™, 8051, TeakDSPCore®, OakDSPCore® and PalmDSPCore®	Now
Application-Specific Functions			10T/100 Ethernet MAC, SDRAM Controller, 1394 (Firewire), CAN 2.0 A/B, USB 1.1 (Function and Hub), 32/64-bit PCI, 8-bit and 16-bit Timer, USART, SPI, 2-wire, Watchdog and AMBA™-compliant Peripherals, 16C550 UART, AVR Peripherals	Now
Memory			Flash, EE, SRAM, DPSRAM, ROM, FIFO	Now
Analog			10-bit ADC, 10-bit DAC, PLL, POR, Comparator, Op-amp, Analog Mux, Brown-out Detector, R-C Oscillator, 16-bit Voice Codec, 10T/100 Ethernet PHY	Now
I/O Interfaces			CMOS, LVTTTL, PCI, USB, LVDS	Now

High-reliability Mixed Signal ASIC

Part number	Description	Availability
TSME4 Alliance	0.8 μm 2ML/2Poly, EEPROM, 1400 Gates/mm ² Digital Cells, Up to 4K-bit EEPROM, Enhanced 0,8 μm CMOS Mixed Signal ASIC	Now

Memory

DataFlash®

Part Number	Speed	Density	Description	Availability
Battery-Voltage™ (2.7 to 3.6V)				
AT45DB011B	20 MHz	1M-bit	2.7-volt Only Serial Interface Flash with One 264-byte SRAM Buffer	Now
AT45DB021B	20 MHz	2M-bit	2.7-volt Only Serial Interface Flash with Two 264-byte SRAM Buffers	Now
AT45DB041B	20 MHz	4M-bit	2.7-volt Only Serial Interface Flash with Two 264-byte SRAM Buffers	Now
AT45DB081B	20 MHz	8M-bit	2.7-volt Only Serial Interface Flash with Two 264-byte SRAM Buffers	Now
AT45DB161B	20 MHz	16M-bit	2.7-volt Only Serial Interface Flash with Two 528-byte SRAM Buffers	Now
AT45DB321B	20 MHz	32M-bit	2.7-volt Only Serial Interface Flash with Two 528-byte SRAM Buffers	Now
AT45DB642	20/5 MHz	64M-bit	2.7-volt Only Dual-interface Flash with Two 1,056-byte SRAM Buffers	Now
AT45DB1282	50/40 MHz	128M-bit	2.7-volt/1.8-volt Dual-interface Flash with Two 1,056-byte SRAM Buffers	Samples 3Q2002
AT45DB2562	50/40 MHz	256M-bit	2.7-volt/1.8-volt Dual-interface Flash with Two 2,112-byte SRAM Buffers	Samples June 2002
Low Battery-Voltage (2.5V to 3.6V)				
AT45DB041B-2.5	15 MHz	4M-bit	2.5-volt Only Serial Interface Flash with Two 264-byte SRAM Buffers	Now
AT45DB081B-2.5	15 MHz	8M-bit	2.5-volt Only Serial Interface Flash with Two 264-byte SRAM Buffers	Now
AT45DB161B-2.5	15 MHz	16M-bit	2.5-volt Only Serial Interface Flash with Two 512-byte SRAM Buffers	Now
DataFlash Cards				
AT45DCB002	20 MHz	2M-byte	2.7-volt Only Serial Interface DataFlash Card	Now
AT45DCB004	20 MHz	4M-byte	2.7-volt Only Serial Interface DataFlash Card	Now
AT45DCB008	20 MHz	8M-byte	2.7-volt Only Serial Interface DataFlash Card	Now

Memory (Continued)

Flash Memory

Part Number	Organization	Speeds	Description	Availability
1.8V Flash (1.65V to 1.9V Single-voltage Read and Write)				
AT49SN6416(T)	4M x 16	54 MHz/90 ns, 20 ns Page Mode	64M-bit, 1.8-volt Sected/Concurrent Flash (Top Boot) with Burst and Page Mode	Now
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 Sected Flash	Now
AT29BV020	256K x 8	110 - 250 ns	2M-bit, 2.7-volt Small Sected Flash	Now
AT29BV040A	512K x 8	250 ns	4M-bit, 2.7-volt Small Sected Flash	Now
AT49BV512	64K x 8	90 - 120 ns	512K-bit, 2.7-volt Boot Flash	Now
AT49BV001(N)(T)	128K x 8	70 - 90 ns	1M-bit, 2.7-volt Parametric Flash (No Reset, Top Boot)	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/ 256K x 8	70 - 120 ns	2M-bit, 2.7-volt Parametric Flash	Now
AT49BV040	512K x 8	70 - 90 ns	4M-bit, 2.7-volt Boot Flash	Now
AT49BV4096A	256K x 16/ 512K x 8	70 - 120 ns	4M-bit, 2.7-volt Parametric Flash	Now
AT49BV008A(T)	1M x 8	100 - 110 ns	8M-bit, 2.7-volt Parametric Flash	Now
AT49BV8192A(T)	512K x 16/ 1M x 8	100 - 110 ns	8M-bit, 2.7-volt Parametric Flash (Top Boot)	Now
AT49BV8011(T)	512K x 16/ 1M x 8	110 ns	8M-bit, 2.7-volt Sected/Concurrent Flash (Top Boot)	Now
AT49BV160(T)	1M x 16	70 - 90 ns	16M-bit, 3.0-volt Sected Flash (Top Boot)	Now
AT49BV161(T)	1M x 16/ 2M x 8	70 - 90 ns	16M-bit, 3.0-volt Sected Flash (Top Boot)	Now
AT49BV1604A(T)	1M x 16	70 - 90 ns	16M-bit, 2.7-volt Sected/Concurrent Flash (Top Boot)	Now
AT49BV1614A(T)	1M x 16/ 2M x 8	70 - 90 ns	16M-bit, 2.7-volt Sected/Concurrent Flash (Top Boot)	Now
AT49BV320(T)	2M x 16	85 - 110 ns	32M-bit, 2.7-volt Sected (Top Boot)	Now
AT49BV321(T)	2M x 16/ 4M x 8	85 - 110 ns	32M-bit, 2.7-volt Sected (Top Boot)	Now
AT49BV3218(T)	2M x 16/ 4M x 8	85 - 110 ns	32M-bit, 2.7-volt Sected/Concurrent Flash (Top Boot)	Now

Memory (Continued)

Flash Memory (Continued)

Part Number	Organization	Speeds	Description	Availability
AT49LD3200(B)	1M x 32/ 2M x 16	100/75/50 MHz	SFlash™ 32M-bit, Synchronous Flash with SDRAM Interface	Now
AT49BN6408(T)	4M x 16	66 MHz/70 ns, 20 ns Page Mode	64M-bit, 2.7-volt Sected/Concurrent Flash (Top Boot) with Burst and Page Mode	Now
AT49BN6416(T)	4M x 16	66 MHz/70 ns, 20 ns Page Mode	64M-bit, 2.7-volt Sected/Concurrent Flash (Top Boot) with Burst and Page Mode	Now
AT49BV641(T)	4M x 16	70 - 90 ns	64M-bit, 2.7-volt Sected/Concurrent Flash (Top Boot) with Page Mode	Now
Low-voltage (3.0 to 3.6V Single-voltage Read and Write)				
AT29LV256	32K x 8	150 - 250 ns	256K-bit, 3.0-volt Small Sected Flash	Now
AT29LV512	64K x 8	150 - 250 ns	512K-bit, 3.0-volt Small Sected Flash	Now
AT29LV010A	128K x 8	150 - 250 ns	1M-bit, 3.0-volt Small Sected Flash	Now
AT29LV1024	64K x 16	150 - 250 ns	1M-bit, 3.0-volt Small Sected Flash	Now
AT29LV020	256K x 8	100 - 250 ns	2M-bit, 3.0-volt Small Sected Flash	Now
AT29LV040A	512K x 8	200 - 250 ns	4M-bit, 3.0-volt Small Sected Flash	Now
AT49LV001(N)(T)	128K x 8	70 - 120 ns	1M-bit, 3.0-volt Parametric Flash (No Reset, Top Boot)	Now
AT49LV002(N)(T)	256K x 8	70 - 120 ns	2M-bit, 3.0-volt Parametric Flash (No Reset, Top Boot)	Now
AT49LV2048A	128K x 16/ 256 x 8	70 - 120 ns	2M-bit, 3.0-volt Parametric Flash	Now
AT49LV040	512K x 8	70 - 120 ns	4M-bit, 3.0-volt Boot Flash	Now
AT49LV4096A	256K x 16/ 512K x 8	70 - 120 ns	4M-bit, 3.0-volt Parametric Flash	Now
AT49LV008A(T)	1M x 8	90 - 120 ns	8M-bit, 3.0-volt Flash (Top Boot)	Now
AT49LV8192A(T)	512K x 16/ 1M x 8	90 - 120 ns	8M-bit, 3.0-volt Flash (Top Boot)	Now
AT49LV161(T)	1M x 16/ 2M x 8	70 ns	16M-bit, 3.0-volt Sected Flash (Top Boot)	Now
AT49LV1614A(T)	1M x 16/ 2M x 8	70 ns	16M-bit, 3.0-volt Sected/Concurrent Flash (Top Boot)	Now
AT49LV320(T)	2M x 16	90 ns	32M-bit, 3.0-volt Sected (Top Boot)	Now
AT49LV321(T)	2M x 16/ 4M x 8	90 ns	32M-bit, 3.0-volt Sected (Top Boot)	Now

Memory (Continued)

Flash Memory (Continued)

Part Number	Organization	Speeds	Description	Availability
<i>Standard Voltage (4.5 to 5.5V Single-voltage Read and Write)</i>				
AT29C256	32K x 8	70 - 120 ns	256K-bit, 5.0-volt Small Sectored Flash	Now
AT29C257	32K x 8	70 - 120 ns	256K-bit, 5.0-volt Small Sectored Flash	Now
AT29C512	64K x 8	70 - 120 ns	512K-bit, 5.0-volt Small Sectored Flash	Now
AT29C010A	128K x 8	70 - 120 ns	1M-bit, 5.0-volt Small Sectored Flash	Now
AT29C1024	64K x 16	70 - 120 ns	1M-bit, 5.0-volt Small Sectored Flash	Now
AT29C020	256K x 8	90 - 120 ns	2M-bit, 5.0-volt Small Sectored Flash	Now
AT29C040A	512K x 8	90 - 150 ns	4M-bit, 5.0-volt Small Sectored Flash	Now
AT49F512	64K x 8	55 - 90 ns	512K-bit, 5.0-volt Boot Flash	Now
AT49F001(N)(T)	128K x 8	55 - 90 ns	1M-bit, 5.0-volt Parametric Flash (No Reset, Top Boot)	Now
AT49F1024	64K x 16	45 - 70 ns	1M-bit, 5.0-volt Boot Flash	Now
AT49F1025	64K x 16	45 - 70 ns	1M-bit, 5.0-volt Boot Flash	Now
AT49F002(N)(T)	256K x 8	55 - 90 ns	2M-bit, 5.0-volt Parametric Flash (No Reset, Top Boot)	Now
AT49F2048A	128K x 16/ 256K x 8	70 - 40 ns	2M-bit, 5.0-volt Parametric Flash	Now
AT49F040	512K x 8	55 - 90 ns	4M-bit, 5.0-volt Boot Flash (Top Boot)	Now
AT49F4096A	256K x 16/ 512K x 8	70 - 90 ns	4M-bit, 5.0-volt Parametric Flash	Now
AT49F008A(T)	1M x 8	90 - 120 ns	8M-bit, 5.0-volt Boot Flash (Top Boot)	Now
AT49F8192A(T)	512K x 16/ 1M x 8	90 - 120 ns	8M-bit, 5.0-volt Flash (Top Boot)	Now
AT49F8011(T)	512K x 16/ 1M x 8	90 - 120 ns	8M-bit, 5.0-volt Sectored/Concurrent Flash (Top Boot)	Now

Memory (Continued)

Serial EEPROM

Part Number	Organization	Density	V _{CC}	Interface Type	Package Options	Other	Availability
AT24C01	128 x 8	1K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Non-Cascadable	Now
AT24C01A	128 x 8	1K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Full Array Write Protection	Now
AT24C02	256 x 8	2K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Full Array Write Protection	Now
AT24C02A	256 x 8	2K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Upper Half Array Write Protection	Now
AT24C04	512 x 8	4K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Full Array Write Protection	Now
AT24C04A	512 x 8	4K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Upper Half Array Write Protection	Now
AT24C08	1024 x 8	8K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Normal Read/Write Operation	Now
AT24C08A	1024 x 8	8K	1.8, 2.7	2-wire	PDIP, SOIC	Full Array Write Protection	Now
AT24C128	16384 x 8	128K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP, LAP, dBGA	Full Array Write Protection	Now
AT24C16	2048 x 8	16K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Upper Half Array Write Protection	Now
AT24C16A	2048 x 8	16K	1.8, 2.7	2-wire	PDIP, SOIC TSSOP	Full Array Write Protection	Now
AT24C164	2048 x 8	16K	1.8, 2.7	2-wire	PDIP, SOIC	Cascadable Feature	Now
AT24C21	128 x 8	1K	2.5	2-wire	PDIP, SOIC	Dual Mode, Plug and Play Operation	Now

Memory (Continued)

Serial EEPROM (Continued)

Part Number	Organization	Density	V _{CC}	Interface Type	Package Options	Other	Availability
AT24C256	32768 x 8	256K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP, LAP, dBGA	Full Array Write Protection	Now
AT24C32	4096 x 8	32K	1.8, 2.7	2-wire	PDIP, SOIC	Cascadable Feature	Now
AT24C32A	4096 x 8	32K	1.8, 2.7	2-wire	PDIP, SOIC	Full Array Write Protection	Now
AT24C512	65536 x 8	512K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP, LAP, dBGA	Cascadable Feature	Now
AT24C64	8192 x 8	64K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Cascadable Feature	Now
AT24C64A	8192 x 8	64K	1.8, 2.7	2-wire	PDIP, SOIC	Full Array Write Protection	Now
AT24CS128	16384 x 8	128K	1.8, 2.7	2-wire	PDIP, SOIC	Cascadable Feature, Permanent Software Write Protection	Now
AT25010	128 x 8	1K	2.7	SPI	PDIP, SOIC	Supports SPI Mode 0 and 3	Now
AT25020	256 x 8	2K	2.7	SPI	PDIP, SOIC	Supports SPI Mode 0 and 3	Now
AT25040	512 x 8	4K	2.7	SPI	PDIP, SOIC	Supports SPI Mode 0 and 3	Now
AT25080	1024 x 8	8K	1.8, 2.7	SPI	PDIP, SOIC, TSSOP	Supports SPI Mode 0 and 3	Now
AT25128	16384 x 8	128K	1.8, 2.7	SPI	PDIP, SOIC, TSSOP, LAP, dBGA	Supports SPI Mode 0 and 3	Now
AT25160	2048 x 8	16K	1.8, 2.7	SPI	PDIP, SOIC, TSSOP	Supports SPI Mode 0 and 3	Now
AT25256	32768 x 8	256K	1.8, 2.7	SPI	PDIP, SOIC, TSSOP, LAP, dBGA	Supports SPI Mode 0 and 3	Now
AT25HP256	32768 x 8	256K	1.8, 2.7	SPI	PDIP, SOIC, LAP, dBGA	Supports SPI Mode 0 and 3, High Speed, Page Write Only	Now

Memory (Continued)

Serial EEPROM (Continued)

Part Number	Organization	Density	V _{CC}	Interface Type	Package Options	Other	Availability
AT25320	4096 x 8	32K	2.7	SPI	PDIP, SOIC, TSSOP	Supports SPI Mode 0 and 3	Now
AT25640	8192 x 8	64K	1.8, 2.7	SPI	PDIP, SOIC, TSSOP	Supports SPI Mode 0 and 3	Now
AT25HP512	65536 x 8	512K	1.8, 2.7	SPI	PDIP, SOIC, LAP, dBGA	Supports SPI Mode 0 and 3, High Speed, Page Write Only	Now
AT25F512	65536 x 8	512K	2.7	SPI	SOIC	Supports SPI Mode 0 and 3, High Speed, Byte Writable	Now
AT25F1024	131072 x 8	1M	2.7	SPI	SOIC	Supports SPI Mode 0 and 3, High Speed, Byte Writable	Now
AT25P1024	131072 x 8	1M	1.8, 2.7	SPI	SOIC, LAP	Supports SPI Mode 0 and 3, Page Write Only	Now
AT34C02	256 x 8	2K	1.8, 2.7	2-wire	PDIP, SOIC, TSSOP	Lower Half Permanent Software Write Protect	Now
AT93C46	64 x 16/ 128 x 8	1K	1.8, 2.7	3-wire	PDIP, SOIC, TSSOP	x8 or x16 Organization	Now
AT93C46A	64 x 16	1K	2.5, 2.7	3-wire	PDIP, SOIC, TSSOP	x16 Organization	Now
AT93C46C	64 x 16	1K	2.5, 2.7	3-wire	PDIP, SOIC	x16 Organization, Schmitt Trigger	Now
AT93C56	128 x 16/ 256 x 8	2K	2.5, 2.7	3-wire	PDIP, SOIC		Now
AT93C66	256 x 16/ 512 x 8	4K	1.8, 2.7	3-wire	PDIP, SOIC, TSSOP		Now
AT93C86	1024 x 16/ 2048 x 8	16K	2.7	3-wire	PDIP, SOIC, TSSOP	Schmitt Trigger and Sequential Read	Now
AT24C1024	131072 x 8	1M	2.7	2-wire	PDIP, SOIC, LAP, dBGA	Cascadable Feature	Now

Memory (Continued)

Parallel EEPROMs

Part Number	Organization	Speeds	Description	Availability
High-speed				
AT28HC64B	8K x 8	70 - 120 ns	64K-bit EEPROM with 64-byte Page and Software Data Protection, Commercial/Industrial/Automotive	Now
AT28HC256	32K x 8	70 - 120 ns	256K-bit EEPROM with 64-byte Page and Software Data Protection, Commercial/Industrial/Military/Automotive	Now
AT28HC256E	32K x 8	70 - 120 ns	256K-bit EEPROM with Extended Endurance, Commercial/Industrial/Military	Now
AT28HC256F	32K x 8	70 - 120 ns	256K-bit EEPROM with Fast Write, Commercial/Industrial/Military/Automotive	Now
Battery-Voltage (2.7 to 3.6V)				
AT28LV010	128K x 8	200 - 250 ns	1M-bit EEPROM with 128-byte Page and Software Data Protection, 3.0-volt, Commercial/Industrial/Automotive	Now
AT28BV64B	8K x 8	200 - 250 ns	64K-bit EEPROM with 64-byte Page and Software Data Protection, 2.7-volt, Commercial/Industrial/Automotive	Now
AT28BV256	32K x 8	200 - 250 ns	256K-bit EEPROM with 64-byte Page and Software Data Protection, 2.7-volt, Commercial/Industrial/Automotive	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 (Use AT28C64B for New Designs)	Now
AT28C256F	32K x 8	150 - 250 ns	256K-bit EEPROM with Fast Write, Commercial/Industrial/Military/Automotive	Now

Memory (Continued)

Parallel EEPROMs (Continued)

Part Number	Organization	Speeds	Description	Availability
AT28C64E	8K x 8	120 - 250 ns	64K-bit EEPROM with Extended Endurance and Fast Write (Use AT28C64B for New Designs)	Now
AT28C64X	8K x 8	120 - 250 ns	64K-bit EEPROM without Ready/Busy (Use AT28C64B for New Designs)	Now
AT28C64B	8K x 8	150 - 250 ns	64K-bit EEPROM with 64-byte Page and Software Data Protection, Commercial/Industrial/Automotive	Now
AT28C256	32K x 8	150 - 250 ns	256K-bit EEPROM with 64-byte Page and Software Data Protection, Commercial/Industrial/Military/Automotive	Now
AT28C256E	32K x 8	150 - 250 ns	256K-bit EEPROM with Extended Endurance, Commercial/Industrial/Military	Now
AT28C010	128K x 8	120 - 250 ns	1M-bit EEPROM with 128-byte Page and Software Data Protection, Commercial/Industrial/Military/Automotive	Now
AT28C010E	128K x 8	120 - 250 ns	1M-bit EEPROM with 128-byte Page, Extended Endurance and Software Data Protection, Commercial/Industrial/Military/Automotive	Now
AT28C040	512K x 8	200 - 250 ns	4M-bit EEPROM with 256-byte Page and Software Data Protection	Now
Standard Military Drawing Products				
5962-88525	32K x 8	Reference SMD	Reference SMD	Now
5962-88634	32K x 8	Reference SMD	Reference SMD	Now
5962-38267	128K x 8	Reference SMD	Reference SMD	Now

Memory (Continued)

Parallel EEPROM Die Product⁽¹⁾

Part Number	V _{CC}	Device T _{AA}	Package Configuration
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
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

Note: 1. 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

Memory (Continued)

EPROMs (Continued)

Part Number	Organization	Speeds	Description	Availability
Low-voltage (3.0 to 3.6V)				
AT27LV256A	32K x 8	55 - 150 ns	256K-bit, 3.0-volt EPROM	Now
AT27LV512A	64K x 8	70 - 150 ns	512K-bit, 3.0-volt EPROM	Now
AT27LV520	64K x 8	70 - 90 ns	512K-bit, Latched 3.0-volt EPROM	Now
AT27LV010A	128K x 8	70 - 150 ns	1M-bit, 3.0-volt EPROM	Now
AT27LV020A	256K x 8	90 - 150 ns	2M-bit, 3.0-volt EPROM	Now
AT27LV040A	512K x 8	90 - 150 ns	4M-bit, 3.0-volt EPROM	Now
Standard Voltage (5.0V)				
AT27C256R	32K x 8	45 - 150 ns	256K-bit, 5.0-volt EPROM	Now
AT27C512R	64K x 8	45 - 150 ns	512K-bit, 5.0-volt EPROM	Now
AT27C516	32K x 16	45 - 100 ns	512K-bit, 5.0-volt EPROM	Now
AT27C010(L)	128K x 8	45 - 150 ns	1M-bit, 5.0-volt EPROM Standard and Low-power	Now
AT27C1024	64K x 16	45 - 150 ns	1M-bit, 5.0-volt EPROM	Now
AT27C020	256K x 8	55 - 150 ns	2M-bit, 5.0-volt EPROM	Now
AT27C2048	128K x 16	55 - 150 ns	2M-bit, 5.0-volt EPROM	Now
AT27C040	512K x 8	70 - 150 ns	4M-bit, 5.0-volt EPROM	Now
AT27C4096	256K x 16	55 - 150 ns	4M-bit, 5.0-volt EPROM	Now
AT27C080	1M x 8	90 - 150 ns	8M-bit, 5.0-volt EPROM	Now
Automotive Grade (-40°C to +125°C)				
AT27C256R	32K x 8	70 - 150 ns	256K-bit, 5.0-volt EPROM	Now
AT27C512R	64K x 8	70 - 150 ns	512K-bit, 5.0-volt EPROM	Now
AT27C010	128K x 8	90 - 150 ns	1M-bit, 5.0-volt EPROM	Now
AT27C1024	64K x 16	90 - 150 ns	1M-bit, 5.0-volt EPROM	Now
AT27C020	256K x 8	90 - 150 ns	2M-bit, 5.0-volt EPROM	Now

Microcontrollers

80C51 8-bit Microcontrollers

In-System Programmable (ISP) Flash

Part Number	Memory Size	Description	Availability
AT89S51	4K x 8	In-System Programmable Microcontroller with 4K Bytes Flash	Now
AT89S52	8K x 8	In-System Programmable Microcontroller with 8K Bytes Flash	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
T89C51RB2	16K x 8	In-System Programmable Microcontroller with 16K Bytes Flash and 1280 Bytes RAM, SPI, PCA	Now
T89C5115	16K x 8	Low-pin Count, In-System Programmable Microcontroller with 16K Bytes Flash and 2K Bytes EEPROM, 512 Bytes RAM, 10-bit ADC, PCA	Now
T89C51RC2	32K x 8	In-System Programmable Microcontroller with 32K Bytes Flash and 1280 Bytes RAM, SPI, PCA	Now
T89C51IC2	32K x 8	In-System Programmable Microcontroller with 32K Bytes Flash and 1280 Bytes RAM, SPI, TWI, PCA	Now
T89C51AC2	32K x 8	In-System Programmable Microcontroller with 32K Bytes Flash and 1280 Bytes RAM, 2K Bytes EEPROM, 10-bit ADC, PCA	Now
T89C51RD2	64K x 8	In-System Programmable Microcontroller with 64K Bytes Flash and 1280 Bytes RAM, PCA	Now

80C51 8-bit Microcontrollers (Continued)
Flash

Part Number	Memory Size	Description	Availability
AT89C1051U	1K x 8	Microcontroller with 1K Byte Flash, 20-lead Package	Now
AT89C2051	2K x 8	Microcontroller with 2K Bytes Flash, 20-lead Package	Now
AT89C4051	4K x 8	Microcontroller with 4K Bytes Flash, 20-lead Package	Now
AT89C51	4K x 8	Microcontroller with 4K Bytes Flash	Now
AT89LV51	4K x 8	2.7-volt, Microcontroller with 4K Bytes Flash	Now
AT89C52	8K x 8	Microcontroller with 8K Bytes Flash	Now
AT89LV52	8K x 8	2.7-volt, Microcontroller with 8K Bytes Flash	Now
AT89C55WD	20K x 8	Microcontroller with 20K Bytes Flash	Now
AT89LV55WD	20K x 8	2.7-volt, Microcontroller with 20K Bytes Flash	Now
AT89C51RC	32K x 8	Microcontroller with 32K Bytes Flash and 512 Bytes RAM	Now
AT89LV51RC	32K x 8	2.7-volt, Microcontroller with 32K Bytes Flash and 512 Bytes RAM	Now

One Time Programmable (OTP)

Part Number	Memory Size	Description	Availability
T87C5111	4K x 8	Low-pin Count Microcontroller with 4K Bytes OTP and A/D, SPI, PCA	Now
T87C5112	8K x 8	Microcontroller with 8K Bytes OTP and A/D, SPI, PCA	Now
TS87C52X2	8K x 8	Microcontroller with 8K Bytes OTP	Now
T87C5103	12K x 8	Low-pin Count Microcontroller with 12K Bytes OTP, 512 Bytes RAM, SPI, PCA	Now
TS87C54X2	16K x 8	Microcontroller with 16K Bytes OTP	Now
TS87C51U2	16K x 8	Microcontroller with 16K Bytes ROM with 2 UARTs	Now
T87C5101	16K x 8	Low-pin Count Microcontroller with 16K Bytes OTP and 512 Bytes RAM	Now
TS87C51RB2	16K x 8	Microcontroller with 16K Bytes Flash and 512 Bytes RAM, PCA	Now
AT87F55WD	20K x 8	Microcontroller with 20K Bytes OTP QuickFlash®	Now
TS87C58X2	32K x 8	Microcontroller with 32K Bytes OTP	Now
AT87F51RC	32K x 8	Microcontroller with 32K Bytes OTP QuickFlash and 512 Bytes RAM	Now
TS87C51RC2	32K x 8	Microcontroller with 32K Bytes OTP and 512 Bytes RAM, PCA	Now
TSC87251G2D	32K x 8	C251 Microcontroller with 32K Bytes OTP, 1024 Bytes RAM, SPI, TWI, EWC	Now
TS87C51RD2	64K x 8	Microcontroller with 64K Bytes OTP and 1024 Bytes RAM, PCA	Now

80C51 8-bit Microcontrollers (Continued)

ROM

Part Number	Memory Size	Description	Availability
T83C5111	4K x 8	Low-pin Count, Microcontroller with 4K Bytes ROM and A/D, PCA	Now
T83C5112	8K x 8	Microcontroller with 8K Bytes ROM and A/D, PCA	Now
TS80C52X2	8K x 8	Microcontroller with 8K Bytes ROM	Now
T83C5102	8K x 8	Low-pin Count, Microcontroller with 8K Bytes ROM and 512 Bytes RAM	Now
AT83C5103	12K x 8	Low-pin Count, Microcontroller with 12K Bytes ROM, 512 Bytes RAM, SPI, PCA	Now
TS80C54X2	16K x 8	Microcontroller with 16K Bytes ROM	Now
TS83C51U2	16K x 8	Microcontroller with 16K Bytes ROM with 2 UARTS	Now
T83C5101	16K x 8	Low-pin Count Microcontroller with 16K Bytes ROM	Now
TS83C51RB2	16K x 8	Microcontroller with 20K Bytes ROM and 512 Bytes of RAM	Now
T83C51RB2	16K x 8	Microcontroller with 20K Bytes ROM and 1280 Bytes of RAM, SPI	Now
T83C51B2	16K x 8	Microcontroller with 16K Bytes ROM and 1280 Bytes RAM, TWI	Now
TSC83251G1D	16K x 8	C251 Microcontroller with 16K Bytes ROM, 1024 Bytes RAM, SPI, TWI, EWC	Now
TS80C58X2	32K x 8	Microcontroller with 32K Bytes ROM	Now
TS83C51RC2	32K x 8	Microcontroller with 32K Bytes ROM and 512 Bytes of RAM	Now
T83C51RC2	32K x 8	Microcontroller with 32K Bytes ROM and 1280 Bytes of RAM, SPI	Now
T83C51IC2	32K x 8	Microcontroller with 32K Bytes ROM and 1280 Byte RAM, TWI	Now
TSC83251G2D	32K x 8	C251 Microcontroller with 32K Bytes ROM, 1024 Bytes RAM, SPI, TWI, EWC	Now
TS83C51RD2	64K x 8	Microcontroller with 64K Bytes ROM and 1024 Bytes of RAM	Now

80C51 8-bit Microcontrollers (Continued)

ROMless

Part Number	Description	Availability
TS80C31X2	Microcontroller with 128 Bytes of RAM	Now
TS80C32X2	Microcontroller with 256 Bytes of RAM	Now
TS80C51U2	Microcontroller with 256 Bytes RAM with 2 UARTs	Now
T80C5112	Microcontroller with 256 Bytes RAM and SPI, PCA	Now
T80C51RA2	Microcontroller with 512 Bytes RAM and PCA	Now
T80C51RD2	Microcontroller with 1024 Bytes RAM and PCA	Now
TSC80251G2D	C251 Microcontroller with 1024 Bytes RAM and SPI, TWI, EWC	Now
T80C51ID2	Microcontroller with 1280 Bytes RAM and SPI, TWI, PCA	Now

Application Specific

Part Number	Program Memory	Description	Availability
MP3 Decoder			
AT89C51SND1	64K Bytes Flash, 4K Bytes Bootloader	Microcontroller with 2304 Bytes RAM and an MP3 Decoder, TWI, USB, SPI, I2S, Man Machine Interface, 10-bit ADC	Now
AT83C51SND1	64K Bytes ROM	Microcontroller with 2304 Bytes RAM and an MP3 Decoder, TWI, USB, SPI, I2S, Man Machine Interface, 10-bit ADC	Now
Data Acquisition			
AT89S4D12	4K Bytes Flash	Microcontroller with 128K Bytes Flash Data Memory and 256 Bytes RAM, SPI	Now
Card Reader			
T83C5121	16K Bytes ROM,	Microcontroller with Multi-protocol Smart Card Interface, 512 Bytes RAM, ISO7816, DC/DC	June 2002
T85C5121	16K Bytes Code RAM, 16K Bytes Bootloader	Microcontroller with Multi-protocol Smart Card Interface, 512 Bytes RAM, ISO7816, DC/DC	June 2002
T89C5121	16K Bytes Flash, 16K Bytes Bootloader	Microcontroller with Multi-protocol Smart Card Interface, 512 Bytes RAM, ISO7816, DC/DC	June 2002
CAN Multiplexing			
T89C51CC02	16K Bytes Flash	Microcontroller with 4-Channel CAN Controller and 16K Bytes of Flash, 512 Bytes RAM, 10-bit ADC, PCA	Now
T89C51CC01	32K Bytes Flash	8-bit Microcontroller with 15-Channel CAN Controller and 32K Bytes of Flash, 1280 Bytes RAM, 10-bit ADC, PCA	Now

ARM®-based Microcontrollers

AT91 Series

Part Number	Processor	Description	Availability
AT91M40800	ARM7TDMI®	40 MHz, 8K Bytes SRAM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	Now
AT91M40807	ARM7TDMI	40 MHz, 8K Bytes SRAM, 128K Bytes Mask ROM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	Now
AT91R40807	ARM7TDMI	40 MHz, 136K Bytes SRAM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	Now
AT91R40008	ARM7TDMI	66 MHz, 256K Bytes SRAM, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 100-lead TQFP Package	Now
AT91F40816	ARM7TDMI	40 MHz, 8K Bytes SRAM, 2M Bytes Flash, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 120-ball BGA Package	Now
AT91FR4081	ARM7TDMI	40 MHz, 136K Bytes SRAM, 1M Byte Flash, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 120-ball BGA Package	Now
AT91FR40162	ARM7TDMI	40 MHz, 256K Bytes SRAM, 2M Bytes Flash, 3 Timers, 2 USARTs, Watchdog, 4-channel PDC, 121-ball BGA Package	Now
AT91M43300	ARM7TDMI	25 MHz, 3K Bytes SRAM, 6 Timers, 3 USARTs, MPI, SPI, Watchdog, 8-channel PDC, 144-lead TQFP Package	Now
AT91M63200	ARM7TDMI	25 MHz, 2K Bytes SRAM, MPI, Including 1K Byte DPRAM, 6 Timers, 3 USARTs, SPI, Watchdog, 8-channel PDC, 176-lead TQFP Package	Now
AT91M42800A	ARM7TDMI	33 MHz, 8K Bytes SRAM, 6 Timers, 2 USARTs, 2 SPIs, Watchdog, 8-channel PDC, 32 kHz Oscillator + PLL, 144-lead TQFP or 144-ball BGA Package	Now
AT91M55800A	ARM7TDMI	33 MHz, 8K Bytes SRAM, Clock Deactivation, Slow, Standby and Power-down Modes, On-chip Oscillator + PLL, 6 Timers, RTC, 3 USARTs, 1 SPI, Watchdog, 8-channel 10-bit ADC, 2-channel 10-bit DAC, 8-channel PDC, 176-lead TQFP or 176-ball BGA Package	Now

Evaluation Kits and Tools

AT91EB40	AT91M40800, AT91R40807 and AT91M40807	Now
AT91EB40A	AT91R40008	Now
AT91EB40 + AT91MEC01	AT91F40816, AT91FR4081, AT91FR40162	Now
AT91EB42	AT91M42800A	Now
AT91EB55	AT91M55800A	Now
AT91EB63	AT91M63200, AT91M43300	Now
AT91MEC01	Universal Memory Extension Card	Now

AVR® Flash Microcontrollers

AT90 Series

Part Number	Description	Availability
AT90S1200	AVR RISC, In-System Programmable Microcontroller with 1K Byte Flash and 64 Bytes EEPROM, 20-pin PDIP, 20-lead SOIC and 20-lead SSOP Packages, Die	Now
AT90S2313	AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM, 128 Bytes EEPROM, UART, 20-pin PDIP and 20-lead SOIC Packages, Die	Now
AT90S2323	AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM, 128 Bytes EEPROM, 8-pin PDIP and 8-lead SOIC Packages, Die	Now
AT90LS2323	2.7-volt, AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM, 128 Bytes EEPROM, 8-pin PDIP and 8-lead SOIC Packages, Die	Now
AT90S2343	AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM, 128 Bytes EEPROM, 8-pin PDIP and 8-lead SOIC Packages, Die	Now
AT90LS2343	2.7-volt, AVR RISC, In-System Programmable Microcontroller with 2K Bytes Flash, 128 Bytes SRAM, 128 Bytes EEPROM, 8-pin PDIP and 8-lead SOIC Packages, Die	Now
AT90S4433	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 and 32-lead TQFP Packages, Die	Now
AT90LS4433	2.7-volt, 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 and 32-lead TQFP Packages, Die	Now
AT90S8515	AVR RISC, In-System Programmable Microcontroller with 8K Bytes Flash, 512 Bytes SRAM, 512 Bytes EEPROM, UART, 40-pin PDIP, 44-lead PLCC and 44-lead TQFP Packages	Now
AT90S8535	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-lead PLCC and 44-lead TQFP Packages, Die	Now
AT90LS8535	2.7-volt, 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-lead PLCC and 44-lead TQFP Packages, Die	Now
AT90C8534	1.8-volt, AVR RISC Microcontroller with 8K Bytes Flash, 512 Bytes EEPROM, 256 Bytes SRAM with 6-channel 10-bit A/D and 48-lead VQFP Package, Die	Now

AVR Flash Microcontrollers (Continued)

ATtiny Series

Part Number	Description	Availability
ATtiny11	AVR RISC Microcontroller with 1K Byte Flash Memory, 8-pin PDIP and 8-lead SOIC Packages, Die	Now
ATtiny11L	2.7-volt, AVR RISC Microcontroller with 1K Byte Flash Memory, 8-pin PDIP and 8-lead SOIC Packages, Die	Now
ATtiny12	AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 64 Bytes EEPROM, 8-pin PDIP and 8-lead SOIC Packages, Die	Now
ATtiny12L	2.7-volt, AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 64 Bytes EEPROM, 8-pin PDIP and 8-lead SOIC Packages, Die	Now
ATtiny12V	1.8-volt, AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 64 Bytes EEPROM, 8-pin PDIP and 8-lead SOIC Packages, Die	Now
ATtiny15L	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 8-lead SOIC Packages, Die	Now
ATtiny26	AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 128 Bytes EEPROM, 128 Bytes SRAM, 11-Channel 10-bit ADC, 2 High Frequency PWM Channels, 20-Pin PDIP, 20-lead SOIC and 32-lead MLF Packages, Die	June 2002
ATtiny26L	2.7-volt AVR RISC Microcontroller with 1K Byte In-System Programmable Flash Memory, 128 Bytes EEPROM, 128 Bytes SRAM, 11-Channel 10-bit ADC, 2 High Frequency PWM Channels, 20-Pin PDIP, 20-lead SOIC and 32-lead MLF Packages, Die	June 2002
ATtiny28V	1.8-volt, AVR RISC Microcontroller with 2K Bytes Flash Memory, 28-pin PDIP, 32-lead TQFP and 32-lead MLF Packages, Die	Now
ATtiny28L	2.7-volt, AVR RISC Microcontroller with 2K Bytes Flash Memory, 28-pin PDIP, 32-lead TQFP and 32-lead MLF Packages, Die	Now

AVR Flash Microcontrollers (Continued)

ATmega Series

Part Number	Description	Availability
ATmega8	AVR RISC Microcontroller with 8K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 1K Byte SRAM, USART, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, 28-pin PDIP, 32-pad MLF and 32-lead TQFP Packages, Die	Now
ATmega8L	2.7-volt, AVR RISC Microcontroller with 8K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 1K Byte SRAM, USART, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, 28-pin PDIP, 32-pad MLF and 32-lead TQFP Packages, Die	Now
ATmega16	AVR RISC Microcontroller with 16K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 1K Byte SRAM, USART, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 40-pin PDIP, 44-pad MLF and 44-lead TQFP Packages, Die	June 2002
ATmega16L	2.7-volt, AVR RISC Microcontroller with 16K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 1K Byte SRAM, USART, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 40-pin PDIP, 44-pad MLF and 44-lead TQFP Packages, Die	June 2002
ATmega32	AVR RISC Microcontroller with 32K Bytes In-System and Self-Programmable Flash Memory, 1K Byte EEPROM, 2K Bytes SRAM, USART, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 40-pin PDIP, 44-pad MLF and 44-lead TQFP Packages, Die	August 2002
ATmega32L	2.7-volt, AVR RISC Microcontroller with 32K Bytes In-System and Self-Programmable Flash Memory, 1K Byte EEPROM, 2K Bytes SRAM, USART, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 40-pin PDIP, 44-pad MLF and 44-lead TQFP Packages, Die	August 2002
ATmega64	AVR RISC Microcontroller with 64K Bytes In-System and Self-Programmable Flash Memory, 2K Bytes EEPROM, 4K Bytes SRAM, 2 USARTs, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 64-lead MLF and 64-lead TQFP Packages, Die	August 2002
ATmega64L	2.7-volt, AVR RISC Microcontroller with 64K Bytes In-System and Self-Programmable Flash Memory, 2K Bytes EEPROM, 4K Bytes SRAM, 2 USARTs, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 64-lead MLF and 64-lead TQFP Packages, Die	August 2002

AVR Flash Microcontrollers (Continued)

ATmega Series (Continued)

Part Number	Description	Availability
ATmega103	AVR RISC, In-System Programmable Microcontroller with 128K Bytes Flash, 4K Bytes SRAM, 4K Bytes EEPROM, UART, RTC, 8-channel 10-bit ADC, 64-lead TQFP Package	Now
ATmega128	AVR RISC Microcontroller with 128K Bytes In-System and Self-Programmable Flash Memory, 4K Bytes EEPROM, 4K Bytes SRAM, 2 USARTs, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 64-lead MLF and 64-lead TQFP Packages, Die	Now
ATmega128L	2.7-volt, AVR RISC Microcontroller with 128K Bytes In-System and Self-Programmable Flash Memory, 4K Bytes EEPROM, 4K Bytes SRAM, 2 USARTs, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 64-lead MLF and 64-lead TQFP Packages	Now
ATmega161	AVR RISC Microcontroller with 16K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 1K Byte SRAM, Dual-UART, Hardware Multiplier, 40-pin PDIP and 44-lead TQFP Packages, Die	Now
ATmega161L	2.7-volt, AVR RISC Microcontroller with 16K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 1K Byte SRAM, Dual-UART, Hardware Multiplier, 40-pin PDIP and 44-lead TQFP Packages, Die	Now
ATmega163	AVR RISC Microcontroller with 16K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 1K Byte SRAM, UART, 8-channel 10-bit ADC, Hardware Multiplier, 40-pin PDIP and 44-lead TQFP Packages, Die	Now
ATmega163L	2.7-volt, AVR RISC Microcontroller with 16K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 1K Byte SRAM, UART, 8-channel 10-bit ADC, Hardware Multiplier, 40-pin PDIP and 44-lead TQFP Packages, Die	Now
ATmega323	AVR RISC Microcontroller with 32K Bytes In-System and Self-Programmable Flash Memory, 1K Byte EEPROM, 2K Bytes SRAM, USART, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 40-pin PDIP and 44-lead TQFP Packages, Die	Now
ATmega323L	2.7-volt, AVR RISC Microcontroller with 32K Bytes In-System and Self-Programmable Flash Memory, 1K Byte EEPROM, 2K Bytes SRAM, USART, TWI, SPI, 8-channel 10-bit ADC, Hardware Multiplier, JTAG Interface for Boundary Scan and On-chip Debug, 40-pin PDIP and 44-lead TQFP Packages, Die	Now

AVR Flash Microcontrollers (Continued)

ATmega Series (Continued)

Part Number	Description	Availability
ATmega8515	AVR RISC Microcontroller with 8K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 512 Bytes SRAM, USART, TWI, SPI, Hardware Multiplier, 40-pin PDIP, 44-lead PLCC, 44-lead MLF and 44-lead TQFP packages, Die	June 2002
ATmega8515L	2.7-volt, AVR RISC Microcontroller with 8K Bytes In-System and Self-Programmable Flash Memory, 512 Bytes EEPROM, 512 Bytes SRAM, USART, TWI, SPI, Hardware Multiplier, 40-pin PDIP, 44-lead PLCC, 44-lead MLF and 44-lead TQFP packages, Die	June 2002

Evaluation Kits and Tools (AVR Family, tinyAVR, megaAVR)

ATICE10	In-circuit Emulator for tinyAVR Family and AVR Family	Now
ATICE50	In-circuit Emulator System for megaAVR Family, AVR Family and tinyAVR Family	Now
ATICE200	Low-cost In-circuit Emulator, Supports Most Devices in 1 - 8K Range	Now
ATASICICE	In-circuit Emulation System for Embedded AVR Core Development	Now
AT90ADCPOD	AT90ICEPRO Analog Replacement Kit	Now
ATmegaPOD	ATmegaICE Pod Replacement Kit	Now
ATmeg163POD	ATmegaICE Pod Replacement Kit	Now
ATICE10UPGR	ICEPRO to ICE10 Upgrade Kit	Now
ATAVRISP	Low-cost In-System Programmer for All In-System Programmable AVR Devices	Now
ATJTAGICE	In-circuit Emulator for megaAVR Devices with JTAG Port	Now
ATSTK500	Starter Kit and Evaluation Board for All AVR Devices	Now
ATSTK501	Starter Kit Expansion Board for 64-pin TQFP Devices	Now
AT90EIT1	Embedded Internet Toolkit – Reference Design Showing How to Connect an AVR Device to Internet	Now
AT90BCKIT	Battery Charger Starter Kit – Reference Design Showing How to Use the AVR Devices to Control Battery Charging	Now

MARC4 4-bit Architecture Microcontrollers

4-bit Microcontrollers/MARC4 Family

Part Number	Package	Description	Availability
M44C510	DIT, SSO44	2.4V to 6V Low-power Microcontroller, PC-keyboards/Wireless Keyboards, Motor Control with PWM, Embedded Applications Requiring Small LED- or LCD-displays like E-cash Chip-card Reader, 4096 Byte ROM + 1024 Byte for Test Purposes, 256 Nibbles RAM, 32 Bi-directional I/Os: 24 Standard I/Os, Bitwise Programmable, 8 I/Os 20 mA Push/pull (5V) (2.4V 4.3 mA), 4 Internal, 10 External Interrupts, 32 kHz Quartz Oscillator as Optional Sub-clock, 4 MHz Oscillator (Internal RC, External R, Quartz or Ceramic Resonator, External Clock), < 1 mA (5V) Operating Current, Sleep Current < 1 μA with 32 kHz Oscillator, Watchdog Timer and CodedReset, 2 x 8-bit Timer/Counter with 8-bit Prescaler, 2 Complementary Buzzer Outputs	Now
M44C092	SSO20	1.8V to 6.2V, Extended Voltage Range with Very Low Current Consumption for IR and RF Remote Control, Security and Wireless Communication Systems, Sleep Current < 1 μA, Watchdog Timer, POR and Brown-out Function, 3 x Multifunction Timer/Counter with Remote Control Carrier Generation and Biphase, Manchester and Pulsewidth Modulator and Demodulator, 4096 Bytes ROM + 512 Bytes for Test Purposes, 256 Nibbles RAM, I/O 16 Bi-directional Ports Including 4 High-current Outputs, 8-bit Synchronous Serial Interface, Battery Low Detection, Comparator for Zero Cross Detection, 4 Internal, 6 External Interrupts, 32 kHz Quartz Oscillator, 4 MHz Oscillator (Internal RC, External R, Quartz or Ceramic Resonator, External Clock)	Now
M44C892	SSO20	See M44C092, Additional 512-bit EEPROM (64 Bytes) On-chip	Now
M44C090	SSO20	1.8V to 6.2V, Extended Voltage Range with Very Low Current Consumption for IR and RF Remote Control, Security and Wireless Communication Systems, Sleep Current < 1 μA, Watchdog Timer, POR and Brown-out Function, 2 x Multifunctional Timers/Counters Including IR/RF Remote Control Carrier Generation, 2048 Bytes ROM + 1024 Bytes for Test Purposes, 256 Nibbles RAM, I/O 12 Bi-directional Ports Inclusive 4 High-current Outputs, 8-bit Synchronous Serial Interface, Battery-low Detection, Comparator for Zero Cross Detection, 3 Internal, 4 External Interrupts, 32 kHz Quartz Oscillator, 4 MHz Oscillator (Internal RC, External R, Quartz or Ceramic Resonator, External Clock), Operating Temperature Range T _{AMB} = -40 to +85°C	Now
M44C090-H	SSO20	See M44C090, Operating Temperature Range T _{AMB} = -40 to +105°C	Now
M44C090-V	SSO20	See M44C090, Operating Temperature Range T _{AMB} = -40 to +125°C	Now
M44C890	SSO20	See M44C090, Additional 512-bit EEPROM (64 Bytes) On-chip, Operating Temperature Range T _{AMB} = -40 to +85°C	Now
M44C890-H	SSO20	See M44C090, Additional 512-bit EEPROM (64 Bytes) On-chip, Operating Temperature Range T _{AMB} = -40 to +105°C	Now

MARC4 4-bit Architecture (Continued)

4-bit Microcontrollers/MARC4 Family (Continued)

Part Number	Package	Description	Availability
T44C080	SSO20	1.8V to 6.2V, Extended Voltage Range with Very Low Current Consumption for IR and RF Remote Control, Security and Wireless Communication Systems, Very Low Power Consumption in Active, Power-down and Sleep Mode, Watchdog Timer, POR and Brown-out Function, 2 x Multifunctional Timers/Counters Including IR/RF Remote Control Carrier Generation, 2048 Bytes ROM + 1024 Bytes for Test Purposes, 256 Nibbles RAM, I/O 12 Bi-directional Ports Inclusive 4 High-current Outputs, 8-bit Synchronous Serial Interface, Battery-low Detection, Comparator for Zero Cross Detection, 3 Internal, 4 External Interrupts, 32 kHz Quartz Oscillator, 4 MHz Oscillator (Internal RC, External R, Quartz or Ceramic Resonator, External Clock), Operating Temperature Range $T_{AMB} = -40$ to $+85^{\circ}C$	Now
T48C893 (Multi-programmable EEPROM Version)	SSO20	1.8V to 6.2V, Extended Voltage Range with Very Low Current Consumption for IR and RF Remote Control, Security and Wireless Communication Systems, Sleep current $< 1 \mu A$, Watchdog Timer and Coded Reset, 3 x Multifunction Timer/Counter with Remote Control Carrier Generation, Biphasic, Manchester and Pulsewidth Modulator and Demodulator, Stack-oriented 4-bit Harvard Architecture, High-level-language Programming in qFORTH, 4096 Bytes ROM + 1024 Bytes for Test Purposes, 256 Nibbles RAM, 512-bit EEPROM (64 Bytes), I/O 16 Bidirectional Ports Inclusive 4 High-current Outputs, Free Programmable I/O Options, 8-bit Synchronous Serial Interface, Battery-low Detection, Comparator for Zero Cross Detection, 4 Internal, 6 External Interrupts, 32 kHz Quartz Oscillator, 4 MHz Oscillator (Internal RC, External R, Quartz or Ceramic Resonator, External Clock), Programmable EEPROM Protectable against Read Out	Now
T48C510 (MTP Multitime Programmable Version of M44C510E)	SSO44	2.4V to 6V Low-power Microcontroller, PC-keyboards/Wireless Keyboards, Motor Control with PWM, Embedded Applications Requiring Small LED- or LCD-Displays Like E-cash Chip-card Reader, Stack-oriented 4-bit Harvard Architecture, High-level-language Programming in qFORTH, 4096 Bytes ROM + 1024 Bytes for Test Purposes, 256 Nibbles RAM, 32 Bi-directional I/Os: 24 Standard I/Os, Bitwise Programmable, 8 I/Os 20 mA Push/Pull (5V) (2.4V 4.3 mA), 4 Internal, 10 External Interrupts, 32 kHz Quartz Oscillator as Optional Subclock, 4 MHz Oscillator (Internal RC, External R, Quartz or Ceramic Resonator, External Clock), $< 1 \text{ mA}$ (5V) Operating Current, Sleep Current $< 1 \mu A$ with 32 kHz Oscillator, Watchdog Timer and Coded Reset, 2 x 8-bit Timer/Counter with 8-bit Prescaler, 2 Complementary Buzzer Outputs	Now
Evaluation Kits and Tools			
TMEB893	MARC4 Starter Kit Includes Core Simulator, Programmer and T48C893 Samples		Now
M4EMU510	MARC4 Development System for M44C510 and T48C510		Now
M4EMUX9X	MARC4 Development System for the M44C090, M44C092, M44C892, M44C890 and T44C080 Series, Including the Flash Part T48C893 and the U9280M		Now

User Programmable Logic

Field Programmable Gate Arrays (FPGAs)

AT40K Series

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, 5.0-volt, Very Low Power	Now
AT40K10	576	10K - 20K	250 MHz	4,096 Bits	192 I/O Pins, 5.0-volt, Very Low Power	Now
AT40K20	1,024	20K - 30K	250 MHz	8,192 Bits	256 I/O Pins, 5.0-volt, Very Low Power	Now
AT40K40	2,304	40K - 50K	250 MHz	18,432 Bits	384 I/O Pins, 5.0-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	Now
AT40K10AL	896	10K - 20K	250 MHz	4,096 Bits	192 I/O Pins, 3.3-volt, Very Low Power	Now
AT40K20AL	1,440	20K - 30K	250 MHz	8,192 Bits	256 I/O Pins, 3.3-volt, Very Low Power	Now
AT40K40AL	2,690	40K - 50K	250 MHz	18,432 Bits	384 I/O Pins, 3.3-volt, Very Low Power	Now

Field Programmable Gate Arrays (Continued)

AT40K Series (Continued)

Part Number	Registers	Usable Gates	Frequency	RAM	Description	Availability
<i>Low-voltage Low-cost (Split Voltage 3.3 and 1.8V)</i>						
AT40K05AX	512	5K - 10K	250 MHz	2,048 Bits	128 I/O Pins, 3.3-volt, Very Low Power	1Q2003
AT40K10AX	896	10K - 20K	250 MHz	4,096 Bits	192 I/O Pins, 3.3-volt, Very Low Power	1Q2003
AT40K20AX	1,440	20K - 30K	250 MHz	8,192 Bits	256 I/O Pins, 3.3-volt, Very Low Power	1Q2003
AT40K40AX	2,690	40K - 50K	250 MHz	18,432 Bits	384 I/O Pins, 3.3-volt, Very Low Power	1Q2003
AT40K80AX	5,120	80K - 100K	250 MHz	32,768 Bits	512 I/O Pins, 3.3-volt, Very Low Power	1Q2003
AT40K125AX	7,680	125K - 150K	250 MHz	51,200 Bits	640 I/O Pins, 3.3-volt, Very Low Power	1Q2003

Software/Hardware Tools

Software

ATDS2100PC	Place and Route Tools (Ordering Also Available from the Web)	Now
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Hardware

ATSTK40	AVR, AT40K Starter Kit (AVR Studio [®] , Figaro, Board, AT40K20, etc.)	Now
ATDH40M	AT40K Prototyping Board, 1 Daughter Board	Now
ATDH40D84	Daughter Board – 84PLCC	Now
ATDH40D100	Daughter Board – 100VQFP	Now
ATDH40D144	Daughter Board – 144TQFP	Now
ATDH40D208	Daughter Board – 208PQFP	Now
ATDH40D240	Daughter Board – 240PQFP	Now

Field Programmable Gate Arrays (Continued)

AT6000 Series

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

FPGA Configuration Memory

FPGA Serial Configuration EEPROM

Part Number	Memory Size	Description	Availability
Standard Voltage (5.0V)			
AT17C65	65,536 x 1	65K-bit FPGA Configuration EEPROM, 5.0-volt	Now
AT17C65A	65,536 x 1	65K-bit FPGA Configuration EEPROM, 5.0-volt, Altera Pinout	Now
AT17C128	131,072 x 1	128K-bit FPGA Configuration EEPROM, 5.0-volt	Now
AT17C128A	131,072 x 1	128K-bit FPGA Configuration EEPROM, 5.0-volt, Altera Pinout	Now
AT17C256	262,144 x 1	256K-bit FPGA Configuration EEPROM, 5.0-volt	Now
AT17C256A	262,144 x 1	256K-bit FPGA Configuration EEPROM, 5.0-volt, Altera Pinout	Now
AT17C512	524,288 x 1	512K-bit FPGA Configuration EEPROM, 5.0-volt	Now
AT17C512A	524,288 x 1	512K-bit FPGA Configuration EEPROM, 5.0-volt, Altera Pinout	Now
AT17C010	1,048,576 x 1	1M-bit FPGA Configuration EEPROM, 5.0-volt	Now
AT17C010A	1,048,576 x 1	1M-bit FPGA Configuration EEPROM, 5.0-volt, Altera Pinout	Now
AT17C002	2,097,152 x 1	2M-bit FPGA Configuration EEPROM, 5.0-volt	Now
AT17C002A	2,097,152 x 1	2M-bit FPGA Configuration EEPROM, 5.0-volt, Altera Pinout	Now
Extended-voltage (3.3V - 5.0V)			
AT17LV65	65,536 x 1	65K-bit FPGA Configuration EEPROM	Now
AT17LV65A	65,536 x 1	65K-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17LV128	131,072 x 1	128K-bit FPGA Configuration EEPROM	Now
AT17LV128A	131,072 x 1	128K-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17LV256	262,144 x 1	256K-bit FPGA Configuration EEPROM	Now
AT17LV256A	262,144 x 1	256K-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17LV512	524,288 x 1	512K-bit FPGA Configuration EEPROM	Now
AT17LV512A	524,288 x 1	512K-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17LV010	1,048,576 x 1	1M-bit FPGA Configuration EEPROM	Now
AT17LV010A	1,048,576 x 1	1M-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17LV002	2,097,152 x 1	2M-bit FPGA Configuration EEPROM	Now
AT17LV002A	2,097,152 x 1	2M-bit FPGA Configuration EEPROM, Altera Pinout	Now

FPGA Configuration Memory (Continued)

FPGA Serial Configuration EEPROM (Continued)

Part Number	Memory Size	Description	Availability
AT17LV040	4,194,304 x 1	4M-bit FPGA Configuration EEPROM	Now
AT17LV040A	4,194,304 x 1	4M-bit FPGA Configuration EEPROM, Altera Pinout	Now
AT17F040	4,194,304 x 1	4M-bit FPGA Configuration FLASH	3Q2002
AT17F040A	4,194,304 x 1	4M-bit FPGA Configuration FLASH, Altera Pinout	3Q2002
AT17F080	8,388,608 x 1	8M-bit FPGA Configuration FLASH	3Q2002
AT17F16	16,777,216 x 1	16M-bit FPGA Configuration FLASH	3Q2002

Software/Hardware Tools

ATDH2200E	Configurator Programming Kit, CPS ISP Software, 8-pin LAP and 20 PLCC Adapter		Now
ATDH2221	20-pin SOIC (8-pin DIP Adapter)		Now
ATDH2222	20-pin PLCC (8-pin DIP Adapter)		Now
ATDH2223	8-pin SOIC (8-pin DIP Adapter)		Now
ATDH2224	44-pin PQFP (8-pin DIP Adapter)		Now
ATDH2225	ISP Download Cable		Now
ATDH2226A	32-pin PQFP (8-pin DIP Adapter), Altera Pinout		Now
ATDH2227	44-pin PLCC (8-pin DIP Adapter)		Now
ATDH2227A	44-pin PLCC (8-pin DIP Adapter), Altera Pinout		Now
ATDH2228	8-pin LAP (8-pin DIP Adapter)		Now

Programmable Logic Devices (PLDs)

SPLDs/CPLDs

Part Number	Packages	Speeds	Description	Availability
5.0-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(Z)	24-, 28-pin	5 - 15 ns	8 FFs, 8 I/O Pins, Standard-power, Zero-power	June 2002
ATF20V8CQ(Z)	24-, 28-pin	10 - 15 ns	8 FFs, 8 I/O Pins, Quarter-power, Zero-power	June 2002
ATF22V10B	24-, 28-pin	10 - 15 ns	10 FFs, 10 I/O Pins, Standard-power	Military Only
ATF22V10C	24-, 28-pin	5 - 15 ns	10 FFs, 10 I/O Pins, Standard-power	Now
ATF22V10CQ(Z)	24-, 28-pin	15 - 20 ns	10 FFs, 10 I/O Pins, Quarter-power, Zero-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
ATF2500CQ(L)	40-, 44-pin	10 - 25 ns	48 FFs, 24 I/O Pins, Standard, Quarter and Low-power	June 2002
ATF1500A(L)	44-pin	7.5 - 20 ns	32 Macrocell, Standard and Low-power, 5V	Now
ATF1502AS(L)	44-pin	7.5 - 25 ns	32 Macrocell with ISP, Standard and Low-power, 5V	Now
ATF1504AS(L)	44-, 68-, 84-, 100-pin	7.5 - 20 ns	64 Macrocell with ISP, Standard and Low-power, 5V	Now
ATF1508AS(L)	84-, 100-, 160-pin	7.5 - 20 ns	128 Macrocell with ISP, Standard and Low-power, 5V	Now
ATF1502SE(L)	44-pin	5 - 15 ns	32 Macrocells with ISP, Low-power, 5V	June 2002
ATF1504SE(L)	44-, 68-, 84-, 100-pin	5 - 15 ns	64 Macrocells with ISP, Low-power, 5V	3Q2002
ATF1508SE(L)	84-, 100-, 160-pin	6 - 15 ns	128 Macrocells with ISP, Low-power, 5V	June 2002
ATF1516SE(L)	100-, 208-pin	7 - 15 ns	256 Macrocells with ISP, Low-power, 5V	4Q2002

Programmable Logic Devices (Continued)

SPLDs/CPLDs (Continued)

Part Number	Packages	Speeds	Description	Availability
Low-voltage (3.3V) Electrically Erasable				
ATF16LV8C	20-pin	10 - 15 ns	8 FFs, 8 I/O Pins, Low-voltage	Now
AT22LV10(L)	24-, 28-pin	20 - 25 ns	10 FFs, 10 I/O Pins, Low-voltage and Low-power (EPROM-based)	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
ATF22LV10CQZ	24-, 28-pin	30 ns	10 FFs, 10 I/O Pins, Low-voltage, Quarter-power, Zero-power	Now
ATF750LVC(L)	24-, 28-pin	15 ns	20 FFs, 10 I/O Pins, 3.3-volt and Low-power	Now
ATF1500ABV	44-pin	12 - 15 ns	32 FFs, 32 I/O Pins, Low-voltage, 3.3V	Now
ATF1502ASV	44-pin	15 ns	32 Macrocells with ISP, 32 I/O Pins, Low-voltage, 3.3V	Now
ATF1504ASV(L)	44-, 68-, 84-, 100-pin	15 - 20 ns	64 Macrocells with ISP, Low-voltage and Low-power, 3.3V	Now
ATF1508ASV(L)	84-, 100-, 160-pin	15 - 20 ns	128 Macrocells with ISP, Low-voltage and Low-power, 3.3V	Now
ATF1502AE(L)	44-pin	4 - 15 ns	32 Macrocells with ISP, Low-power, 3.3V	June 2002
ATF1504AE(L)	44-, 49-, 68-, 84-, 100-pin	4 - 15 ns	64 Macrocells with ISP, Low-power, 3.3V	3Q2002
ATF1508AE(L)	84-, 100-, 144-, 169-, 256-pin	5 - 15 ns	128 Macrocells with ISP, Low-power, 3.3V	June 2002
ATF1516AE(L)	100-, 144-, 208-, 256-pin	5 - 15 ns	256 Macrocells with ISP, Low-power, 3.3V	4Q2002
ATF1532AE(L)	144-, 208-, 256-pin	7 - 15 ns	512 Macrocells with ISP, Low-power, 3.3V	1Q2003

Programmable Logic Devices (Continued)

SPLDs/CPLDs (Continued)

Part Number	Packages	Speeds	Description	Availability
5.0-volt EPROM-based				
ATV750B(L)	24-, 28-pin	10 - 15 ns	20 FFs, 10 I/O Pins, Standard and Low-power	Military Only
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
Software/Hardware Tools				
ATDS1500PC	Atmel – ProChip Designer™ (Includes CUPL, VHDL, Schematic Entry, Synthesis, Functional and Timing Simulation, Place and Route)			Now
ATDS1000PC	Atmel – WinCUPL™ (Includes CUPL, Compiler, Place and Route)			Now
ATF15xx-DK	CPLD Development Kit (Includes Software, 2 Sample PLDs, Demo Board and ISP Cable)			Now
ATDH1150VPC	Atmel – ISP Kit Software and Cable (3V or 5V)			Now
ATDH1160VPC	Atmel – ISP Programming Board (3V or 5V)			Now
ATDH1161PC	Atmel – 44-lead PLCC Adaptor Board			Now
ATDH1162PC	Atmel – 44-lead TQFP Adaptor Board			Now
ATDH1163PC	Atmel – 68-lead PLCC Adaptor Board			Now
ATDH1164PC	Atmel – 100-lead PQFP Adaptor Board			Now
ATDH1165PC	Atmel – 100-lead TQFP Adaptor Board			Now
ATDH1166PC	Atmel – 160-lead PQFP Adaptor Board			Now

User Programmable SLI

Field Programmable System-Level Integration Circuits (FPSLIC™) – AVR, FPGA and SRAM on a Single Chip

AT94K Series

Part Number	FPGA Gates	FreeRAM™	FPGA I/O ⁽¹⁾	Program/Data SRAM	Availability
AT94K05AL Micro FPSLIC	5K	2,048 Bits	Up to 96	4K - 16K Bytes/ 4K - 16K Bytes	Now
AT94K10AL	10K	4,096 Bits	Up to 192	20K - 32K Bytes/ 4K - 16K Bytes	Now
AT94K40AL	40K	18,432 Bits	Up to 384	20K - 32K Bytes/ 4K - 16K Bytes	Now

Software/Hardware Tools

Software

ATDS94KSW1	AT94K Series Design System Annual Subscription	Now
ATDS94KSW2	AT94K Series Design System Perpetual License	Now
ATDM94KSW2	AT94K Series Design System Annual Maintenance	Now

Hardware

ATSTK94	FPSLIC Starter Kit, Cable, Software (4-month Software License)	Now
ATDH94STKB	FPSLIC Starter Kit Board, Cable (Hardware Only – No Software)	Now
ATDH2225	ISP Download Cable (For Configurator, Included in FPSLIC Starter Kit)	Now
ATDH94DNG	Hardware Dongle (If no Network Card to Key License Off)	Now

Training

AT94TRAIN	FPSLIC Training Course, Including Starter Kit	Now
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University Program

ATSTK94U	FPSLIC University Laboratory Kit (12-month License)	Now
ATDS94KSWU	AT94K Series University Annual Subscription Fee	Now
ATDH94STKBU	FPSLIC University Laboratory Board, Cable (Hardware Only – No Software)	Now
AT94KINST	FPSLIC University Instructor Package (Includes Laboratory Kit, Documentation and Presentations)	Now

Note: 1. There are up to 16 AVR programmable I/Os on each device, plus several dedicated AVR I/Os.

FPSLIC (Continued)

AT94S Secure Series

Part Number	FPGA Gates	FreeRAM	FPGA I/O	Program/Data SRAM	Availability
AT94S05AL Micro FPSLIC	5K	2,048 Bits	Up to 95	4K - 16K Bytes/ 4K - 16K Bytes	June 2002
AT94S10AL	10K	4,096 Bits	Up to 192	20K - 32K Bytes/ 4K - 16K Bytes	Now
AT94S40AL	40K	18,432 Bits	Up to 384	20K - 32K Bytes/ 4K - 16K Bytes	Now
Hardware Tools					
ATDH94SP	Secure FPSLIC Programming/Prototyping Board				June 2002

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