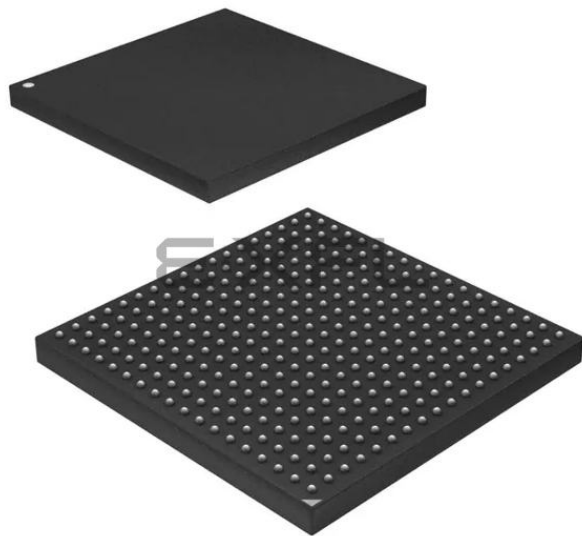




Welcome to [E-XFL.COM](https://www.e-xfl.com)

What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "[Embedded - Microcontrollers](#)"

Details

Product Status	Discontinued at Digi-Key
Core Processor	AVR
Core Size	32-Bit Single-Core
Speed	200MHz
Connectivity	EBI/EMI, Ethernet, I ² C, Memory Card, SPI, SSC, UART/USART
Peripherals	AC'97, DMA, I ² S, LCD, POR, PWM, WDT
Number of I/O	146
Program Memory Size	-
Program Memory Type	ROMless
EEPROM Size	-
RAM Size	64K x 8
Voltage - Supply (Vcc/Vdd)	1.08V ~ 3.6V
Data Converters	D/A 2x16b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	324-TFBGA
Supplier Device Package	324-TFBGA (15x15)
Purchase URL	https://www.e-xfl.com/product-detail/microchip-technology/at32ap7200-cfut

AVR 8-bit RISC (Continued)

Automotive AVR

Part Number	Flash (Kbytes)	EEPROM (Bytes)	RAM (Bytes)	I/O Pins	CAN Mess. Obj.	Timers 16-bit	Timers 8-bit	PWM (Channels)	RTC	SPI	USART	TWI (I2C-compatible)	ISP	ADC 10-bit (Channels)	BOD	WDT	Int. RC	HW Mult.	Interrupts	Ext. Interrupts	SPM	VCC	Clock Speed (MHz)	Package	Temperature	Availability
ATtiny167	16	512	512	16	–	1	1	4	–	1+USI	–	–	–	–	–	–	–	–	–	–	–	2.7-5.5V	16	MLF32, SOIC20, TSSOP20	-40° C to +150° C for MLF32, TSSOP20; 40° C to +125° C for SOIC20	Dec. 2008
ATtiny24	2	128	128	12	–	1	1	4	–	USI	–	USI	Y	8	Y	Y	Y	–	17	3	Y	2.7-5.5V	16	MLF20, SOIC14	-40° C to +125° C	Now
ATtiny25	2	128	128	6	–	–	2	4	–	USI	–	USI	Y	4	Y	Y	Y	–	15	2	Y	2.7-5.5V	16	MLF20, SOIC8	-40° C to +125° C	Now
ATtiny25V	2	128	128	6	–	–	2	4	–	USI	–	USI	Y	4	Y	Y	Y	–	15	2	Y	1.8-3.6V	8	SOIC8	-40° C to +85° C	Now
ATtiny261	2	128	128	16	–	1	1	5	–	1+USI	–	USI	Y	11	Y	Y	Y	–	–	–	–	2.7-5.5V	8	SOIC20, MLF32, TSSOP20	-40° C to +150° C for MLF32, TSSOP20; 40° C to +125° C for SOIC20	Oct. 2008
ATtiny44	4	256	256	12	–	1	1	4	–	USI	–	USI	Y	8	Y	Y	Y	–	17	3	Y	2.7-5.5V	16	MLF20, SOIC14	-40° C to +125° C	Now
ATtiny44V	4	256	256	12	–	1	1	4	–	USI	–	USI	Y	8	Y	Y	Y	–	17	3	Y	1.8-3.6V	8	MLF20, SOIC14	-40° C to +85° C	Now
ATtiny45	4	256	256	6	–	–	2	4	–	USI	–	USI	Y	4	Y	Y	Y	–	15	2	Y	2.7-5.5V	16	MLF20, SOIC8	-40° C to +150° C	Now
ATtiny45V	4	256	256	6	–	–	2	4	–	USI	–	USI	Y	4	Y	Y	Y	–	15	2	Y	1.8-3.6V	8	SOIC8	-40° C to +85° C	Now
ATtiny461	4	256	256	16	–	1	2	5	–	USI	–	USI	Y	11	Y	Y	Y	–	–	–	Y	2.7-5.5V	16	SOIC20, MLF32, TSSOP20	-40° C to +150° C for MLF32, TSSOP20; 40° C to +125° C for SOIC20	Oct. 2008
ATtiny84	8	512	512	12	–	1	1	4	–	USI	–	USI	Y	8	Y	Y	Y	–	17	3	Y	2.7-5.5V	16	MLF20	-40° C to +125° C	Now
ATtiny85	8	512	512	6	–	–	2	4	–	USI	–	USI	Y	4	Y	Y	Y	–	15	2	Y	2.7-5.5V	16	MLF20, SOIC8	-40° C to +125° C	Now
ATtiny85V	8	512	512	6	–	–	2	4	–	USI	–	USI	Y	4	Y	Y	Y	–	15	2	Y	1.8-3.6V	8	SOIC8	-40° C to +85° C	Now
ATtiny861	8	512	512	16	–	1	1	5	–	1+USI	–	USI	Y	11	Y	Y	Y	–	–	–	–	2.7-5.5V	16	SOIC20, MLF32, TSSOP20	-40° C to +150° C for MLF32, TSSOP20; 40° C to +125° C for SOIC20	Oct. 2008
ATmega48	4	256	512	23	–	1	2	6	Y	1+USART	1	Y	Y	8	Y	Y	Y	Y	26	5	Y	2.7-5.5V	16	TQFP32, MLF32	-40° C to +125° C	Now

Note: 1. All Automotive AVR parts are RoHS compliant.

AVR 8-bit RISC (Continued)

Automotive AVR (Continued)

Part Number	Flash (Kbytes)	EEPROM (Bytes)	RAM (Bytes)	I/O Pins	CAN Mess. Obj.	Timers 16-bit	Timers 8-bit	PWM (Channels)	RTC	SPI	USART	TWI (I2C Compatible)	ISP	ADC 10-bit (Channels)	BOD	WDT	Int. RC	HW Mult.	Interrupts	Ext. Interrupts	SPM	VCC	Clock Speed (MHz)	Package	Temperature	Availability
ATmega88	8	512	1K	23	–	1	2	6	Y	1+USART	1	Y	Y	8	Y	Y	Y	Y	26	5	Y	2.7-5.5V	16	TQFP32, MLF32	-40° C to +150° C	Now
ATmega88V	8	512	1K	23	–	1	2	6	Y	1+USART	1	Y	Y	8	Y	Y	Y	Y	26	5	Y	1.8-3.6V	8	TQFP32, MLF32	-40° C to +85° C	Now
ATmega164P	16	512	1K	32	–	1	2	6	Y	1+USART	2	Y	Y	8	Y	Y	Y	Y	31	7	Y	2.7-5.5V	16	TQFP44, MLF44	-40° C to +125° C	Now
ATmega168	16	512	1K	23	–	1	2	6	Y	1+USART	1	Y	Y	8	Y	Y	Y	Y	26	5	Y	2.7-5.5V	16	TQFP32, MLF32	-40° C to +150° C	Now
ATmega169P	16	512	1K	54	–	1	2	4	Y	1+USI	1	USI	Y	8	Y	Y	Y	Y	23	3	Y	2.7-5.5V	16	TQFP64, MLF64	-40° C to +85° C	Now
ATmega16M1	16	1K	2K	32	6	1	1	6+4	–	1	–	–	Y	11	Y	Y	Y	Y	31	4	Y	2.7-5.5V	16	TQFP32, MLF32	-40° C to +150° C	Feb. 2009
ATmega324P	32	1K	2K	32	–	1	2	6	Y	1+USART	2	Y	Y	8	Y	Y	Y	Y	31	7	Y	2.7-5.5V	16	TQFP44, MLF44	-40° C to +125° C	Now
ATmega328P	32	1K	2K	23	–	1	2	6	Y	1+USART	1	Y	Y	8	Y	Y	Y	Y	26	5	Y	2.7-5.5V	16	TQFP32, MLF32	-40° C to +125° C	Nov. 2008
ATmega32M1	32	1K	2K	32	6	1	1	6+4	–	1	–	–	Y	11	Y	Y	Y	Y	31	4	Y	2.7-5.5V	16	TQFP32, MLF32	-40° C to +150° C	Oct. 2008
ATmega32C1	32	1K	2K	32	6	1	1	4	–	1	–	–	Y	11	Y	Y	Y	Y	31	4	Y	2.7-5.5V	16	TQFP32, MLF32	-40° C to +150° C	Oct. 2008
ATmega64M1	64	2K	4K	32	6	1	1	6+4	–	1	–	–	Y	11	Y	Y	Y	Y	31	4	Y	2.7-5.5V	16	TQFP32, MLF32	-40° C to +150° C	Jan. 2009
ATmega64C1	64	2K	4K	32	6	1	1	4	–	1	–	–	Y	11	Y	Y	Y	Y	31	4	Y	2.7-5.5V	16	TQFP32, MLF32	-40° C to +150° C	Jan. 2009
ATmega644P	64	2K	4K	32	–	1	2	6	Y	1+USART	2	Y	Y	8	Y	Y	Y	Y	31	7	Y	2.7-5.5V	16	TQFP44, MLF44	-40° C to +125° C	Now
AT90CAN32	32	1K	2K	53	15	2	2	6+2	Y	1	2	Y	Y	8	Y	Y	Y	Y	37	8	Y	2.7-5.5V	16	TQFP64, MLF64	-40° C to +125° C	Now
AT90CAN64	64	2K	4K	53	15	2	2	6+2	Y	1	2	Y	Y	8	Y	Y	Y	Y	37	8	Y	2.7-5.5V	16	TQFP64, MLF64	-40° C to +125° C	Now
AT90CAN128	128	4K	4K	53	15	2	2	6+2	Y	1	2	Y	Y	8	Y	Y	Y	Y	37	8	Y	2.7-5.5V	16	TQFP64, MLF64	-40° C to +125° C	Now
ATAVRDRAGON	Starter Kit Supporting On-chip Debugging and Programming for AVR (AVR Dragon Supports OCD for All AVRs with 32 Kbytes or Less Flash Memory)																							Now		
ATAVRAUTO102	AVR Automotive Debugger Kit for CAN-LIN																							Now		
ATAVRAUTOEK1	AVR Automotive Evaluation Kit																							Now		
ATAVRISP2	AVRISP Programmer for All AVR ISP Devices																							Now		
ATDVK90CAN1	DVK90CAN1 Development Kit for AT90CAN Devices																							Now		
ATJTAGIC2	AVR Low-cost In-Circuit Emulator Supporting All AVR with debugWIRE or JTAG Interface																							Now		
ATSTK500	STK500 AVR Starter Kit with AVR Studio Interface																							Now		
ATSTK524	AVR Automotive Starter Kit for 32 Pins ATmega32M1 – ATmega32C1																							Now		
ATSTK600	Starter Kit and Development System for AVR and AVR32																							Now		

Note: 1. All Automotive AVR parts are RoHS compliant.

AVR 8-bit RISC (Continued)

Lighting/Power Control AVR

Part Number	Flash (Kbytes)	EEPROM (Bytes)	RAM (Bytes)	I/O Pins	DALI	16-bit Timers	8-bit Timers	PWM (Channels)	RTC	SPI	USART	TWI (I2C-compatible)	ISP	ADC 10-bit (Channels)	BOD	WDT	Int. RC	HW MULT	Interrupts	Interrupts Ext.	SPM	VCC	Clock Speed (MHz)	Package	Temperature	Availability
AT90PWM1	8	512	512	19	–	1	1	7	–	1	–	–	1	8	1	1	1	1	26	4	1	2.7-5.5V	16	SOIC24	–40 to +105°C	Now
AT90PWM2	8	512	512	19	1	1	1	7	1	1	1	–	1	8	1	1	1	1	29	4	1	2.7-5.5V	16	SOIC24	–40 to +105°C	Now
AT90PWM3	8	512	512	27	1	1	1	10	1	1	1	–	1	11	1	1	1	1	29	4	1	2.7-5.5V	16	MLF32, SOIC32	–40 to +105°C	Now
AT90PWM81	8	512	256	16/20	–	1	–	4	–	1	–	–	1	11	1	1	1	1	20	3	1	2.7-5.5V	16	MLF32, SOIC20	–40 to +105/125°C	Now
AT90PWM216	16	512	1024	19	1	1	1	7	1	1	1	–	1	8	1	1	1	1	29	4	1	2.7-5.5V	16	SOIC24	–40 to +105°C	Now
AT90PWM316	16	512	1024	27	1	1	1	10	1	1	1	–	1	11	1	1	1	1	29	4	1	2.7-5.5V	16	MLF32, SOIC32	–40 to +105°C	Now
ATAVRDRAGON	Starter Kit Supporting On-chip Debugging and Programming for AVR (AVR Dragon Supports OCD for All AVRs with 32 Kbytes or Less Flash Memory)																									Now
ATJTAGICE2	AVR Low-cost In-Circuit Emulator Supporting All AVR with debugWIRE or JTAG Interface																									Now
ATAVRFBKIT	DALI Controlled Dimmable Fluorescent Demo Kit for AT90PWM2																									Now
ATAVRISP2	AVRISP Programmer for All AVR ISP Devices																									Now
ATAVRLI100	Fluorescent Dimmable Ballast Evaluation Kit with PWM81																									Now
ATAVRMC100	Brushless DC Motor Control Evaluation Kit																									Now
ATAVRMC200	Asynchronous AC Induction Motor Control Evaluation Kit																									Now
ATAVRMC201	Asynchronous AC Induction Motor for ATAVRMC200 Evaluation Kit																									Now
ATAVRMC300	Low Voltage Motor Control Power Evaluation Board (Max 40V)																									Now
ATAVRMC301	Motor Control Processor Evaluation Board with the Low Cost ATtinyx61																									Now
ATAVRMC303	Motor Control Processor Evaluation Board with the New High Performance XMEGA																									Now
ATAVRMC310	Motor Control Processor Evaluation Board with the ATmega32M1 (with CAN and LIN Interfaces)																									Now
ATAVRMC321	Motor Control Evaluation Kit for Low Cost Applications (MC300+MC301+BLDC Motor)																									Now
ATAVRMC323	Motor Control Evaluation Kit for CPU Intensive Algorithm (MC300+MC303+BLDC Motor)																									Now
ATAVRMC320	Motor Control Evaluation Kit for CAN and LIN Applications (MC300+MC310+BLDC Motor)																									Now
ATSTK500	STK500 AVR Starter Kit with AVR Studio Interface																									Now
ATSTK520	STK520 Expansion for STK500 to Support 90PWM Devices																									Now
ATSTK521	Expansion Board for STK500 to Support 90PWM81 Devices																									Now
ATSTK600	Starter Kit and Development System for AVR and AVR32																									Now
ATSTK600-SOIC	STK600 Add-on to Support the New Devices in SO Packages																									Now

Note: 1. All Lighting/Power Control AVR parts are RoHS compliant.

8051 Architecture

CAN Networking

Part Number	Description	RoHS Compliance	Availability
AT89C51CC02	8-bit Microcontroller with 4-channel CAN Controller, 16-Kbyte of Flash, 512-byte RAM, 2-Kbyte EEPROM, 10-bit ADC, PCA16-Kbyte	Yes	Now
AT89C51CC01	8-bit Microcontroller with 15-channel CAN Controller, 32-Kbyte Flash, 1280-byte RAM, 2-Kbyte EEPROM, 10-bit ADC, PCA32-Kbyte	Yes	Now
AT89C51CC03	8-bit Microcontroller with 15-channel CAN Controller, 64-Kbyte Flash, 2304-byte RAM, 2-Kbyte EEPROM, 10-bit ADC, PCA64-Kbyte	Yes	Now
AT89STK-06	Starter Kit for CAN Microcontrollers AT89C51CC01, AT89C51CC02 and AT89C51CC03		Now
CANADAPT28	PLCC28 Adapter for AT89C51CC02 to AT89C51CC02 PLCC44 Socket		Now

Flash (Reprogrammable)

Part Number	Description	Memory Size	RoHS Compliance	Availability
AT89C2051	Microcontroller with 2-Kbyte Flash with Analog Comparator	2K x 8	Yes	Now
AT89C4051	Microcontroller with 4-Kbyte Flash with Analog Comparator	4K x 8	Yes	Now
AT89C55WD	Microcontroller with 20-Kbyte Flash, 256-byte RAM, Watchdog Timer	20K x 8	Yes	Now
AT89C51RC	Microcontroller with 32-Kbyte Flash, 512-byte RAM, Watchdog Timer	32K x 8	Yes	Now

Flash ISP (In-System Programmable)

Part Number	Description	Memory Size	RoHS Compliance	Availability
AT89S51	In-System Programmable Microcontroller with 4-Kbyte Flash	4K x 8	Yes	Now
AT89LS51	2.7-volt, In-System Programmable Microcontroller with 4-Kbyte Flash	4K x 8	Yes	Now
AT89S52	In-System Programmable Microcontroller with 8-Kbyte Flash	8K x 8	Yes	Now
AT89LS52	2-7-volt, In-System Programmable Microcontroller with 8-Kbyte Flash	8K x 8	Yes	Now
AT89S8253	In-System Programmable Microcontroller with 12-Kbyte Flash, 256-byte RAM, 2-Kbyte EEPROM, SPI	12K x 8	Yes	Now
AT89C5115	Low-pin Count, In-System Programmable Microcontroller with 16-Kbyte Flash, 2-Kbyte EEPROM, 512-byte RAM, 10-bit ADC, PCA	16K x 8	Yes	Now
AT89C51RB2	In-System Programmable Microcontroller with 16-Kbyte Flash, 1280-byte RAM, SPI, PCA	16K x 8	Yes	Now
AT89C51RC2	In-System Programmable Microcontroller with 32-Kbyte Flash, 1280-byte RAM, SPI, PCA	32K x 8	Yes	Now
AT89C51IC2	In-System Programmable Microcontroller with 32-Kbyte Flash, 1280-byte RAM, TWI, SPI, PCA	32K x 8	Yes	Now
AT89C51AC2	In-System Programmable Microcontroller with 32-Kbyte Flash, 1280-byte RAM, 2-Kbyte EEPROM, 10-bit ADC, PCA	32K x 8	Yes	Now
AT89C51AC3	In-System Programmable Microcontroller with 64-Kbyte Flash, 2048-byte RAM, 2-Kbyte EEPROM, 10-bit ADC, PCA	64K x 8	Yes	Now
AT89C51RD2	In-System Programmable Microcontroller with 64-Kbyte Flash, 2048-byte RAM, PCA, SPI	64K x 8	Yes	Now
AT89C51ED2	In-System Programmable Microcontroller with 64-Kbyte Flash, 2048-byte RAM, 2-Kbyte EEPROM, PCA, SPI	64K x 8	Yes	Now
AT89C51ID2	In-System Programmable Microcontroller with 64-Kbyte Flash, 2048-byte RAM, 2-Kbyte EEPROM, PCA, TWI, SPI	64K x 8	Yes	Now

MARC4 4-bit Architecture Microcontrollers

4-bit Microcontrollers/MARC4 Family

Part Number	Description	Package	RoHS Compliance	Availability
ATAM862x-TNz3	Complete UHF ASK/FSK Transmitter, Flash Microcontroller and Transmitter PLL T5753 in One IC, Temperature Range: -40°C to +125°C, Frequency Range: 310 to 330 MHz	SSO24	Pb-free Only	Now
ATAM862x-TNz4	Complete UHF ASK/FSK Transmitter, Flash Microcontroller and Transmitter PLL T5754 in One IC, Temperature Range: -40°C to +125°C, Frequency Range: 429 to 439 MHz	SSO24	Pb-free Only	Now
ATAM862x-TNz8	Complete UHF ASK/FSK Transmitter, Flash Microcontroller and Transmitter PLL T5750 in One IC, Temperature Range: -40°C to +125°C, Frequency Range: 868 to 928 MHz	SSO24	Pb-free Only	Now
ATAM893 (MTP Version)	1.8 to 6.5V, Extended Voltage Range with Very Low Current Consumption for IR and RF Remote Control, Security and Wireless Communication Systems, Sleep Current <1 µA, 4-Kbyte Flash Memory, 2 x 64 Bytes EEPROM, 3 Multifunction Timer, Watchdog, POR & Brown-out, SSI, 16 I/O Lines, T _{AMB} -40°C to +125°C, MTP Version for ATAR080/090/890/092/892	SSO20	Pb-free Only	Now
ATAM893-D (MTP Version)	1.8 to 6.5V, Extended Voltage Range with Very Low Current Consumption for IR and RF Remote Control, Security and Wireless Communication Systems, Sleep Current <1 µA, 4-Kbyte Flash Memory, 2 x 64 Bytes EEPROM, 3 Multifunction Timer, Watchdog, POR & Brown-out, SSI, 16 I/O Lines, T _{AMB} -40°C to +125°C, MTP Version for ATAR080/090/890/092/892	SSO20	Pb-free Only	Now
ATAM894 (MTP Version)	1.8 to 6.5V, Extended Voltage Range with Very Low Current Consumption for IR and RF Remote Control, Security and Wireless Communication Systems, Sleep Current <1 µA, 8-Kbyte Flash Memory, 2 x 64 Bytes EEPROM, 3 Multifunction Timer, Watchdog, POR & Brown-out, SSI, 16 I/O Lines, T _{AMB} -40°C to +85°C	SSO24	Pb-free Only	Now
ATAR080	1.8 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-byte 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°C to +85°C	SSO20	Pb-free Only	Now
ATAR080-D	See ATAR080, Operating Temperature Range T _{AMB} = -40°C to +125°C	SSO20	Pb-free Only	Now
ATAR090	1.8 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-byte 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°C to +85°C (-40°C to +105°C) (-40°C to +125°C)	SSO20	Pb-free Only	Now
ATAR090-C	See ATAR090, Operating Temperature Range T _{AMB} = -40°C to +105°C	SSO20	Pb-free Only	Now
ATAR090-D	See ATAR090, Operating Temperature Range T _{AMB} = -40°C to +125°C	SSO20	Pb-free Only	Now

MARC4 4-bit Architecture Microcontrollers (Continued)

4-bit Microcontrollers/MARC4 Family (Continued)

Part Number	Description	Package	RoHS Compliance	Availability
ATAR092	1.8 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 μ A, Watchdog Timer, POR and Brown-out Function, 3 x Multifunction Timer/Counter with Remote Control Carrier Generation and Biphasic, Manchester and Pulse Width Modulator and Demodulator, 4096-byte 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), Operating Temperature Range $T_{AMB} = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ (-40°C to $+105^{\circ}\text{C}$) (-40°C to $+125^{\circ}\text{C}$)	SSO20	Pb-free Only	Now
ATAR092-C	See ATAR092, Operating Temperature Range $T_{AMB} = -40^{\circ}\text{C}$ to $+105^{\circ}\text{C}$	SSO20	Pb-free Only	Now
ATAR092-D	See ATAR092, Operating Temperature Range $T_{AMB} = -40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$	SSO20	Pb-free Only	Now
ATAR862x-yyy-TNz3	Complete UHF ASK/FSK Transmitter, ROM Microcontroller and Transmitter PLL T5753 in One IC, Temperature Range: -40°C to $+125^{\circ}\text{C}$, Frequency Range: 310 to 330 MHz	SSO24	Pb-free Only	Now
ATAR862x-yyy-TNz4	Complete UHF ASK/FSK Transmitter, ROM Microcontroller and Transmitter PLL T5754 in One IC, Temperature Range: -40°C to $+125^{\circ}\text{C}$, Frequency Range: 429 to 439 MHz	SSO24	Pb-free Only	Now
ATAR862x-yyy-TNz8	Complete UHF ASK/FSK Transmitter, ROM Microcontroller and Transmitter PLL T5750 in One IC, Temperature Range: -40°C to $+125^{\circ}\text{C}$, Frequency Range: 868 to 928 MHz	SSO24	Pb-free Only	Now
ATAR890	See ATAR090, Additional 512-bit EEPROM (64 Bytes) On-chip, Operating Temperature Range $T_{AMB} = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ (-40°C to $+105^{\circ}\text{C}$)	SSO20	Pb-free Only	Now
ATAR890-C	See ATAR090, Additional 512-bit EEPROM (64 Bytes) On-chip, Operating Temperature Range $T_{AMB} = -40^{\circ}\text{C}$ to $+105^{\circ}\text{C}$	SSO20	Pb-free Only	Now
ATAR892	See ATAR092, Additional 512-bit EEPROM (64 Bytes) On-chip, Operating Temperature Range $T_{AMB} = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ (-40°C to $+105^{\circ}\text{C}$)	SSO20	Pb-free Only	Now
ATAR892-C	See ATAR092, Additional 512-bit EEPROM (64 Bytes) On-chip, Operating Temperature Range $T_{AMB} = -40^{\circ}\text{C}$ to $+105^{\circ}\text{C}$	SSO20	Pb-free Only	Now
M4EMUX9X	MARC4 Development System for the ATAR090, ATAR092, ATAR892, ATAR890 and ATAR080 Series, Including the Flash Part ATAM893 and the U9280M			Now

Keys and Scrollers (Continued)

Capacitive Touch Controllers for Keys, Slider and/or Wheels (Continued)

Part Number	Technology	Touch Keys	Wheel/Slider Function	Package	Package Size in (mm ²)	Voltage	Temperature Range	Inputs/Outputs	Interface	FMEA Self Test & Diag. Features	AKS*	Low Power Mode	Self Calibration	Noise Filtering	Auto Drift Compensation	Spread Spectrum Acquisition	Evaluation Board	Notes	Availability
QT60326	Qmatrix	32	–	TQFP-44	9x9	4.75-5.25V	-40 to +105°C	0/0	SPI, UART	Yes	Yes	Yes	Yes	Yes	Yes	Yes	E6486	Ideal for Home Appliances	Now
QT60486	Qmatrix	48	–	TQFP-44	9x9	4.75-5.25V	-40 to +105°C	0/0	SPI, UART	Yes	Yes	Yes	Yes	Yes	Yes	Yes	E6486	Ideal for Home Appliances	Now
AT42QT2160	Qmatrix	16	Yes	QFN-28	4x4	1.8-5.5V	-40 to +85°C	3/11 Digital (PWM o/p)	I2C-compatible	–	Yes	Yes	Yes	Yes	Yes	Yes	AT42EVK 2160A	Ideal for Mobile Devices	Now
AT42QT1060	QTouch	6	–	QFN-28	4x4	1.8-5.5V	-40 to +85°C	7/7 Digital (PWM o/p)	I2C-compatible	–	Yes	Yes	Yes	Yes	Yes	Yes	AT42EVK 1060	Guard Channel for Mobile Devices	Now
E100S	1-channel Touch Sense Evaluation Kit Demonstrating the QT100A																		Now
E240B	2- and 4-channels Touch Sense Evaluation Kit Demonstrating the QT220 and QT240																		Now
E1080	Discontinued, as the QT1081 Replaces the QT1080. Please See E1081 Evaluation Kit																		Disc.
E1081	10-channels Touch Sense Evaluation Kit Demonstrating the QT1081																		Now
E1103	8-channels Touch Sense Evaluation Kit Demonstrating the QT1103																		Now
E1106	Touch Sense Evaluation Kit Demonstrating the QT1106																		Now
E6240	24-channels Touch Sense Evaluation Kit Demonstrating the QT60160 and the QT60240																		Now
E6248	24-channels Touch Sense Evaluation Kit Demonstrating the QT60168 and the QT60248																		Now
E6486	48-channels Touch Sense Evaluation Kit Demonstrating the QT60326 and the QT60486																		Now
EVK2160A	16-channels Touch Sense Evaluation Kit Demonstrating the AT42QT2160																		Now
EVK1060	6-channels Touch Sense Evaluation Kit Demonstrating the AT42QT1060																		Now

Automotive Standard Products (Continued)

Automotive Control (Continued)

Safety

Part Number	Description	Package	RoHS Compliance	Availability
U6813B	Fail-safe IC, Watchdog Timer, Relay Driver, Lamp Driver and Charge Pump	SO16	Pb-free Only	Now
ATA6842	Fail-safe System IC with 4-channel Relay Driver, Power Supply, Watchdog	QFN48	Yes	Now
U6268B	Side Airbag Sensor Dual Interface (Satellite Interface), 50 mA Sensor Supply, Data Transfer by Current Modulation	SO16	Pb-free Only	Now

Watchdog ICs

Part Number	Description	Package	RoHS Compliance	Availability
ATA6025	Watchdog IC with Fail-safe Output, Voltage Monitors, Low-power Consumption in Standby Mode	SO8	Pb-free Only	Now
ATA6020N	Watchdog IC, μ P Based, Programmable Via Metal Mask (Based on the ATAR080 Microcontroller)	SO20	Pb-free Only	Now
U5020M	Watchdog Timer, Active and Sleep Mode, 6 Wake-up Inputs, Enable Output	SO16	Pb-free Only	Now
U5021M	Watchdog Timer, Active and Sleep Mode, 1 Wake-up Input, Enable Output	SO8	Pb-free Only	Now

Wiper and Wash Control ICs

Part Number	Description	Package	RoHS Compliance	Availability
U641B	Wipe/Wash Control with Prewash Delay, INT/WIWA Switches to V_{BATT}	DIP8, SO8	Pb-free Only	Now
U642B	Wipe/Wash Control without Prewash Delay, INT/WIWA Switches to V_{BATT}	DIP8, SO8	Pb-free Only	Now

Automotive Standard Products (Continued)

LIN Networking

Part Number	Description	Package	RoHS Compliance	Availability
ATA6612	LIN SiP (System-in-Package) Solution Including LIN Transceiver, 5V/50 mA Voltage Regulator, Window Watchdog and AVR ATmega88 Automotive Microcontroller with 8K Flash Memory	QFN48	Yes	Now
ATA6613	LIN SiP (System-in-Package) Solution Including LIN Transceiver, 5V/50 mA Voltage Regulator, Window Watchdog and AVR ATmega168 Automotive Microcontroller with 16K Flash Memory	QFN48	Yes	Now
ATA6616	LIN SiP (System-in-Package) Solution Including LIN Transceiver, 5V/50 mA Voltage Regulator, Window Watchdog and AVR ATtiny87 Automotive Microcontroller with 8K Flash Memory	QFN38	Yes	March 2009
ATA6617	LIN SiP (System-in-Package) Solution Including LIN Transceiver, 5V/50 mA Voltage Regulator, Window Watchdog and AVR ATtiny167 Automotive Microcontroller with 16K Flash Memory	QFN38	Yes	Feb. 2009
ATA6622	LIN System Basis Chip with LIN Transceiver, Integrated 3.3V/50 mA Voltage Regulator and Window Watchdog	QFN20	Yes	Now
ATA6623	LIN System Basis Chip with LIN Transceiver and Integrated 3.3V/50 mA Voltage Regulator	SO8	Pb-free Only	Now
ATA6624	LIN System Basis Chip with LIN Transceiver, Integrated 5V/50 mA Voltage Regulator and Window Watchdog	QFN20	Yes	Now
ATA6625	LIN System Basis Chip with LIN Transceiver and Integrated 5V/50 mA Voltage Regulator	SO8	Pb-free Only	Now
ATA6626	LIN System Basis Chip with LIN Transceiver and Integrated 5V/50 mA Voltage Regulator without TxD Timeout Timer	QFN20	Yes	Now
ATA6662	LIN Transceiver, Physical Layer According to Specification 2.0 (Backward Compatible)	SO8	Pb-free Only	Now
ATA6663	LIN Transceiver, Physical Layer According to Specification 2.1 (Backward Compatible), Also Supporting Low Baud Rates Down to 1 Kbaud	SO8	Pb-free Only	April 2009
ATA6664	LIN Transceiver, Physical Layer According to Specification 2.1 (Backward Compatible), Supporting Low Baud Rates Down to 1 Kbaud, with Time-out Function	SO8	Pb-free Only	April 2009
ATA6612-EK	Development Board, LIN SiP (System-in-Package) Solution ATA6612			Now
ATA6613-EK	Development Board, LIN SiP (System-in-Package) Solution ATA6613			Now
ATA6622-EK	Development Board, LIN System Basis Chip ATA6622			Now
ATA6623-EK	Development Board, LIN System Basis Chip ATA6623			Now
ATA6624-EK	Development Board, LIN System Basis Chip for ATA6621 and ATA6624			Now
ATA6625-EK	Development Board, LIN System Basis Chip for ATA6620 and ATA6625			Now
ATA6626-EK	Development Board, LIN System Basis Chip for ATA6626			Now
ATA6662-EK	Development Board, LIN Transceiver for ATA6661 and ATA6662			Now
ATA6663-EK	Development Board, LIN Transceiver for ATA6663			Now
ATA6664-EK	Development Board, LIN Transceiver for ATA6664			Now

Automotive ASSPs (Continued)

Car Access

Car Components

Part Number	Description	Package	RoHS Compliance	Availability
ATA3741P2	UHF Remote Control Receiver for ASK and FSK Systems, All RF Components Integrated, IF Bandwidth 300 kHz	SO20	Pb-free Only	Now
ATA3741P3	UHF Remote Control Receiver for ASK and FSK Systems, All RF Components Integrated, IF Bandwidth 600 kHz	SO20	Pb-free Only	Now
ATA3742P3	UHF Remote Control Receiver, RSSI Output for ASK and FSK Systems	SO20	Pb-free Only	Now
ATA5278	Programmable Antenna Driver for 1A Peak Current (Regulated), LF Baud Rates Up to 8-Kbaud, SPI	QFN28	Pb-free Only	Now
ATA5279	Six-fold LF Antenna Driver IC	QFN48	Yes	Now
ATA5721	UHF Receiver for ASK and FSK Systems, 315 MHz, Full Duplex	QFN48	Yes	4Q2008
ATA5722	UHF Receiver for ASK and FSK Systems, 433 to 435 MHz, Full Duplex	QFN48	Yes	4Q2008
ATA5723P3	Highly Integrated UHF Remote Control Receiver, ASK/FSK, 315 MHz, 300 kHz Bandwidth, RSSI Pin Compatible to ATA5724, ATA5728	SSO20	Pb-free Only	Now
ATA5724P3	Highly Integrated UHF Remote Control Receiver, ASK/FSK, 433 MHz, 300 kHz Bandwidth, RSSI Pin Compatible to ATA5723, ATA5728	SSO20	Pb-free Only	Now
ATA5728P6	Highly Integrated UHF Remote Control Receiver, ASK/FSK, 868 MHz, 600 kHz Bandwidth, RSSI Pin Compatible to ATA5723, ATA5724	SSO20	Pb-free Only	Now
ATA5743P3	UHF Remote Control Receiver, High FSK Sensitivity, 5 to 20V Automotive Compatible Data Interface, Data Clock Available for Manchester and Biphase Coded Signals, 300 kHz Bandwidth	SO20, SSO20	Pb-free Only	Now
ATA5743P6	UHF Remote Control Receiver, High FSK Sensitivity, 5 to 20V Automotive Compatible Data Interface, Data Clock Available for Manchester and Biphase Coded Signals, 600 kHz Bandwidth	SO20, SSO20	Pb-free Only	Now
ATA5744N	UHF Remote Control Receiver for ASK Systems/PWM Mode	SO20, SSO20	Pb-free Only	Now
ATA5745	Transparent ASK/FSK UHF Receiver IC with Fast RKE/TPMS Switching Rate, Suited to 1 to 20 Kbits/s Manchester FSK with 4 Programmable Bit-rate Ranges, High ASK Sensitivity (-114 dBm at 2.4 Kbits/s), High Blocking Capability, 433 MHz	QFN24	Pb-free Only	Now
ATA5746	Transparent ASK/FSK UHF Receiver IC with Fast RKE/TPMS Switching Rate, Suited to 1 to 20 Kbits/s Manchester FSK with 4 Programmable Bit-rate Ranges, High ASK Sensitivity (-114 dBm at 2.4 Kbits/s), High Blocking Capability, 315 MHz	QFN24	Pb-free Only	Now
ATA5760N3	UHF ASK/FSK Receiver, Frequency Receiving Range: 868 to 870 MHz, Highest Integration Level in Market, IF Bandwidth 300 kHz	SO20	Pb-free Only	Now
ATA5760N	UHF ASK/FSK Receiver, Frequency Receiving Range: 868 to 870 MHz, Highest Integration Level in Market, IF Bandwidth 600 kHz	SO20	Pb-free Only	Now
ATA5761N	UHF ASK/FSK Receiver, Frequency Receiving Range: 902 to 928 MHz, Highest Integration Level in Market	SO20	Pb-free Only	Now
ATA5811	UHF Transceiver for ASK and FSK Systems, 433 to 435 MHz or 868 to 870 MHz	QFN48	Yes	Now

Note: 1. For dedicated microcontrollers, see Automotive 4-bit microcontrollers

BD/HD-DVD/DVD/CD Storage Chipsets

BD/HD-DVD/DVD/CD Front Monitor Diodes

Part Number	Description	Package	RoHS Compliance	Availability
ATR1840	Front Monitor OEIC for Blu-ray/HD-DVD/ DVD/CD	QFN Open, 3 x 3 mm	Yes	Now
ATR1841	Front Monitor OEIC for Blu-ray/HD-DVD/ DVD/CD, I2C-compatible for Gain Setting and Gain Adjustment	QFN Open, 3 x 3 mm	Yes	Now
ATR1842	Front Monitor OEIC for Blu-ray/HD-DVD/ DVD/CD with SPI Interface for Gain Setting and Gain Adjustment	QFN Open, 3 x 3 mm	Yes	Now

BD/HD-DVD/DVD/CD Laser Driver ICs

Part Number	Description	Package	RoHS Compliance	Availability
ATR0826	Three-channel Combo Laser Driver with RF Oscillator and Two Optional Outputs, Total Output Current to 500/150 mA, Rise/Fall Time 0.8 ns, Control of Swing and Frequency by 3 External Resistors, NER Enable	SSO16, QFN16	Yes	Now
ATR0834T	Four-channel Low Head Room LVDS Laser Driver with RF Oscillator and Two Optional Outputs, Total Output Current to 700 mA, Rise/Fall Time 0.8 ns, Control of Swing and Frequency by 4 External Resistors, NER Enable, Internal Termination	QFN24	Yes	Now
ATR0849	Four-channel LVDS Laser Driver with RF Oscillator and Two Optional Outputs, Total Output Current to 700 mA, Rise/Fall Time 0.8 ns, Control of Swing and Frequency by 4 External Resistors, NER Enable, Internal Termination	QFN24	Yes	Now
ATR0881	3-output Laser Driver with 5 Channels and Serial Interface. Flexible Gain Adjustment and Oscillator Settings Via Serial Interface	QFN24	Yes	Now
ATR0885	3-output Laser Driver for Blu-ray/DVD/CD Player	QFN24	Yes	Now

BD/HD-DVD/DVD/CD Photo Detector ICs

Part Number	Description	Package	RoHS Compliance	Availability
ATR0874	2 Wavelength PDIC® (650 nm and 780 nm) for CD-RW and DVD±RW, 10 Channels with 4 Configurable Gain Steps, 150 MHz Data Bandwidth, 12 Photo Diode Pattern	QFN OPEN 4 x 3.5	Yes	Now
ATR1874	2 Wavelength PDIC (650 nm and 780 nm) for CD-RW and DVD±RW, 10 Channels with 4 Configurable Gain Steps, 150 MHz Data Bandwidth, 12 Photo Diode Pattern	QFN OPEN 4 x 3.5	Yes	Now

Dream® Sound Synthesis ICs

Part Number	Description	Package	RoHS Compliance	Availability
ATSAM9708	128-voice Integrated Sound Synthesizer	LQFP144	Yes	Now
ATSAM2553	Integrated Digital Musical Instrument	LQFP128	Yes	Now
ATSAM2533	Low-power Synthesizer with Effects and Built-in RAM	LQFP100	Yes	Now
ATSAM2195	Low-power Single-chip Synthesizer with Effects	QFN44	Yes	Now
ATSAM3703	High Performance Low-cost Effects DSP	LQFP80	Yes	Now
ATSAM3303B	GM-Lite Synthesizer/Professional Effects DSP	LQFP100	Yes	Now
ATSAM3108B	8-channel Multiprocessing DSP	LQFP64	Yes	Now
ATSAM3308B	Multi-purpose Audio DSP	LQFP100	Yes	Now
ATSAM3516	High Performance Keyboard Synthesizer	LQFP144	Yes	Jan. 2009
ATSAM3716	Multiple Stream Compressed Audio Player	LQFP128	Yes	Jan. 2009
ATSAM3816	Professional Audio Multiple Purpose Processor	LQFP144	Yes	Jan. 2009

IR Control ICs

Part Number	Description	Package	RoHS Compliance	Availability
ATA2525R	IR Receiver IC Optimized for Standard Remote Control Solutions, Supply Voltage 5V	Wafer	N/A	Now
ATA2526P	IR Receiver IC Optimized for Standard Remote Control Solutions, Supply Voltage 3 - 5V	Wafer	N/A	Now
T2525N	IR Receiver IC with Extensive Range of Options to Meet Special Remote Control Requirements, Supply Voltage 5V	Wafer	N/A	Now
T2526N	IR Receiver IC with Extensive Range of Options to Meet Special Remote Control Requirements, Supply Voltage 3 - 5V	Wafer	N/A	Now
U2538B	IR Preamplifier, Typically 0.55 mA Standby Current, 20 to 60 kHz, Only 3 External Components Required, Packaged	SO8	Pb-free Only	Now

Video – TV/VCR ICs

Part Number	Description	Package	RoHS Compliance	Availability
U2860B	Double FM Demodulator (Stereo), VS = 5V, Completely Alignment-free	SO14	Pb-free Only	Now
U2861B	FM Demodulator (Mono), VS = 5V, Completely Alignment-free	SO14	Pb-free Only	Now
TDA4470	Multi-standard Video IF (Neg/Pos) and Quasi Parallel Sound Processing (FM, NICAM, AM), VS = 5V, FPLL Detection, AFC, Alignment-free AM Demodulator, Three IF Inputs	SO28, SSO28	Pb-free Only	Now

Flash Memory

Part Number	Density (Mbit)	Organization	VCC (V)	Speeds (ns)	Package	Description	Availability
AT29LV512	0.5	64K x 8	3.0-3.6	120	32PLCC, 32TSOP	–	Now
AT29C512	0.5	64K x 8	4.5-5.5	70, 90	32PLCC, 32TSOP	–	Now
AT29BV010A	1	128K x 8	2.7-3.6	120, 150	32PLCC, 32TSOP	–	Now
AT29C010A	1	128K x 8	4.5-5.5	70, 90	32PLCC, 32TSOP	–	Now
AT29BV020	2	256K x 8	2.7-3.6	120, 150	32PLCC, 32TSOP	–	Now
AT29LV020	2	256K x 8	3.0-3.6	100, 200	32PLCC, 32TSOP	–	Now
AT29C020	2	256K x 8	4.5-5.5	70, 120	32PLCC, 32TSOP	–	Now
AT29BV040A	4	512K x 8	2.7-3.6	200	32PLCC, 32TSOP	–	Now
AT29LV040A	4	512K x 8	3.0-3.6	150	32PLCC, 32TSOP	–	Now
AT29C040A	4	512K x 8	4.5-5.5	90, 120	32PLCC, 32TSOP	–	Now
AT49LV1024A	1	64K x 16	3.0-3.6	45	40VSOP	–	Now
AT49F1024A	1	64K x 16	4.5-5.5	45	40VSOP	–	Now
AT49BV040B	4	512K x 8	2.7-3.6	70	32PLCC, 32TSOP, 32VSOP	Bottom Boot (5V and 2.7V Tolerant)	Now
AT49BV040B	4	512K x 8	4.5-5.5	55	32PLCC, 32TSOP	Bottom Boot (5V and 2.7V Tolerant)	Now
AT49BV802D(T)	8	512K x 16/1M x 8	2.7-3.6	70	48CBGA, 48TSOP	(T) – Top Boot	Now
AT49SV163D(T)	16	1M x 16	1.65-1.95	80	48CBGA, 48TSOP	(T) – Top Boot	Now
AT49BV160D(T)	16	1M x 16	2.7-3.6	70	48TSOP	(T) – Top Boot	Now
AT49BV160S(T)	16	1M x 16	2.7-3.6	70	64CBGA	(T) – Top Boot	Now
AT49BV163D(T)	16	1M x 16/2M x 8	2.7-3.6	70	48CBGA, 48TSOP	(T) – Top Boot	Now
AT49SV322D(T)	32	2M x 16	1.65-1.95	80	48CBGA, 48TSOP	(T) – Top Boot	Now
AT49BV320D(T)	32	2M x 16	2.7-3.6	70	47CBGA, 48TSOP	(T) – Top Boot	Now
AT49BV320S(T)	32	2M x 16	2.7-3.6	70	64CBGA	(T) – Top Boot	Now
AT49BV322D(T)	32	2M x 16/4M x 8	2.7-3.6	70	48CBGA, 48TSOP	(T) – Top Boot	Now
AT49BV640D(T)	64	4M x 16	2.7-3.6	70	48CBGA	(T) – Top Boot	Now
AT49BV642D(T)	64	4M x 16	2.7-3.6	70	48TSOP	(T) – Top Boot	Now
AT49BV640S(T)	64	4M x 16	2.7-3.6	70	64CBGA	(T) – Top Boot	Now

All Flash Parts are RoHS Compliant.

Field Programmable Gate Arrays (FPGAs)

AT40K Series

Part Number	Description	Registers	Usable Gates	Frequency (MHz)	RAM (bits)	RoHS Compliance	Availability
AT40K05	128 I/O Pins, 5-volt, Very Low Power	256	5-10K	250	2,048	No	Now
AT40K10	192 I/O Pins, 5-volt, Very Low Power	576	10-20K	250	4,096	No	Now
AT40K20	256 I/O Pins, 5-volt, Very Low Power	1,024	20-30K	250	8,192	No	Now
AT40K40	384 I/O Pins, 5-volt, Very Low Power	2,304	40-50K	250	18,432	No	Now
AT40K05AL	128 I/O Pins, 3.3-volt, Very Low Power	512	5-10K	250	2,048	Contact Atmel	Now
AT40K10AL	192 I/O Pins, 3.3-volt, Very Low Power	896	10-20K	250	4,096	Yes	Now
AT40K20AL	256 I/O Pins, 3.3-volt, Very Low Power	1,440	20-30K	250	8,192	Yes	Now
AT40K40AL	384 I/O Pins, 3.3-volt, Very Low Power	2,690	40-50K	250	18,432	Pb-free Only	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

FPGA Configuration Memory

FPGA Serial Configuration EEPROM

Part Number	Description	Memory Size	RoHS Compliance	Availability
AT17LV65	65-Kbit FPGA Configuration EEPROM	65,536 x 1	Yes	Now
AT17LV128	128-Kbit FPGA Configuration EEPROM	131,072 x 1	Yes	Now
AT17LV256	256-Kbit FPGA Configuration EEPROM	262,144 x 1	Yes	Now
AT17LV512	512-Kbit FPGA Configuration EEPROM	524,288 x 1	Yes	Now
AT17LV512A	512-Kbit FPGA Configuration EEPROM, Altera Pinout	524,288 x 1	Yes	Now
AT17LV010	1-Mbit FPGA Configuration EEPROM	1,048,576 x 1	Yes	Now
AT17LV010A	1-Mbit FPGA Configuration EEPROM, Altera Pinout	1,048,576 x 1	Yes	Now
AT17LV002	2-Mbit FPGA Configuration EEPROM	2,097,152 x 1	Yes	Now
AT17LV002A	2-Mbit FPGA Configuration EEPROM, Altera Pinout	2,097,152 x 1	Yes	Now
AT17LV040	4-Mbit FPGA Configuration EEPROM	4,194,304 x 1	Yes	Now

Note: 1. Replacement RoHS is the AT17LV256.

FPGA Configuration Memory (Continued)

FPGA Serial Configuration EEPROM (Continued)

Part Number	Description	Memory Size	RoHS Compliance	Availability
AT17N256	256-Kbit FPGA Configuration Memory	262,144 x 1	No	Now
AT17N512	512-Kbit FPGA Configuration Memory	524,288 x 1	No	Now
AT17N010	1-Mbit FPGA Configuration Memory	1,048,576 x 1	No	Now
AT17N002	2-Mbit FPGA Configuration Memory	2,097,152 x 1	No	Now
AT17N040	4-Mbit FPGA Configuration Memory	4,194,304 x 1	No	Now
AT17F040	4-Mbit FPGA Configuration Flash	4,194,304 x 1	Yes	Now
AT17F040A	4-Mbit FPGA Configuration Flash, Altera Pinout	4,194,304 x 1	Yes	Now
AT17F080	8-Mbit FPGA Configuration Flash	8,388,608 x 1	Yes	Now
AT17F080A	8-Mbit FPGA Configuration Flash, Altera Pinout	8,388,608 x 1	Yes	Now
AT17F16	16-Mbit FPGA Configuration Flash	16,777,216 x 1	Yes	Now
AT17F16A	16-Mbit FPGA Configuration Flash, Altera Pinout	16,777,216 x 1	Yes	Now
AT17F32	32-Mbit FPGA Configuration Flash	33,554,432 x 1	Yes	Now
AT17F32A	32-Mbit FPGA Configuration Flash, Altera Pinout	33,554,432 x 1	Yes	Now
AT18F010	1-Mbit FPGA Configuration Flash with ISP, Pin Compatible with Xilinx Platform Flash	1,048,576 x 1	Yes	Now
AT18F002	2-Mbit FPGA Configuration Flash with ISP, Pin Compatible with Xilinx Platform Flash	2,097,152 x 1	Yes	Now
AT18F040	4-Mbit FPGA Configuration Flash with ISP, Pin Compatible with Xilinx Platform Flash	4,194,304 x 1	Yes	Now
AT18F080	8-Mbit FPGA Configuration Flash with ISP, Pin Compatible with Xilinx Platform Flash	7,340,032 x 1	Yes	Now
ATDH2200E	Configurator Programming Kit, CPS ISP Software, 8-lead LAP and 20 PLCC Adapter			Now
AT18F-DK3	Configurator Programming Kit for AT18F Family			Now
ATDH1151VPC	ISP Cable for AT18F with Converter			Now
ATF15XXDK3-SAX20	20-lead TSSOP Adapter with AT18F Converter to Be Used with ATF15XX-DK3 Kit			Now
ATDH2221	20-lead SOIC (8-lead DIP Adapter)			Now
ATDH2222	20-lead PLCC (8-lead DIP Adapter)			Now
ATDH2223	8-lead SOIC (8-lead DIP Adapter)			Now
ATDH2224	44-lead PQFP (8-lead DIP Adapter)			Now
ATDH2225	ISP Download Cable			Now
ATDH2226A	32-lead PQFP (8-lead DIP Adapter), Altera Pinout			Now
ATDH2227	44-lead PLCC (8-lead DIP Adapter)			Now
ATDH2227A	44-lead PLCC (8-lead DIP Adapter), Altera Pinout			Now
ATDH2228	8-lead LAP (8-lead DIP Adapter)			Now

Crypto & Secure Memories

CryptoMemory® – Embedded (2-wire Interface)

CryptoMemory – Smart Cards (ISO 7816-3, T = 0)

Part Number	Description	Organization (Bytes)	Voltage	RoHS Compliance	Availability
AT88SC0104CA	1-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-Wire I2C-Compliant Protocols	4 x 32	2.7-5.5	Yes	Now
AT88SC0204CA	2-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-Wire I2C-Compliant Protocols	4 x 64	2.7-5.5	Yes	Now
AT88SC0404CA	4-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-Wire I2C-Compliant Protocols	4 x 128	2.7-5.5	Yes	Now
AT88SC0808CA	8-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-Wire I2C-Compliant Protocols	8 x 128	2.7-5.5	Yes	Now
AT88SC0104C	1-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-wire Protocols	4 x 32	2.7-5.5	Yes	Now
AT88SC0204C	2-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-wire Protocols	4 x 64	2.7-5.5	Yes	Now
AT88SC0404C	4-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-wire Protocols	4 x 128	2.7-5.5	Yes	Now
AT88SC0808C	8-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-wire Protocols	8 x 128	2.7-5.5	Yes	Now
AT88SC1616C	16-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-wire Protocols	16 x 128	2.7-5.5	Yes	Now
AT88SC3216C	32-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-wire Protocols	16 x 256	2.7-5.5	Yes	Now
AT88SC6416C	64-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-wire Protocols	16 x 512	2.7-5.5	Yes	Now
AT88SC12816C	128-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-wire Protocols	16 x 1024	2.7-5.5	Yes	Now
AT88SC25616C	256-Kbit User Memory with Authentication and Encryption, ISO 7816-3 Asynchronous and Synchronous 2-wire Protocols	16 x 2048	2.7-5.5	Yes	Now
AT88SC-ADK1 Aris++	1K to 256K CryptoMemory Demonstration, Evaluation and Full Development Kit for Embedded AVR				Now
AT88SC-ADK2 Aris+	1K to 256K Low Cost CryptoMemory Complete Development Kit				Now
AT88SC-DK1 Aris	1K to 256K CryptoMemory Adaptor and Development Kit for Embedded Applications				Now
AT88SC-SDK1 Tuema	1K to 256K CryptoMemory Development Kit for Smart Cards				Now

Embedded Crypto Solutions CD

Part Number	Description	Availability
AT88INFO-CD	Single Source for Information on CryptoMemory, CryptoRF, CryptoCompanion, RF Reader, and Kit Information	Now

RF Identification (Continued)***RF Identification/Immobilization – 100 - 150 kHz (Continued)***

Part Number	Description	Package	RoHS Compliance	Availability
ATA5567	NOA3 Module, RFID Read/Write IDIC for Contactless Identification, Backward Compatible to 5551 and 5557, 64-bit Unique TAG ID	Micromodule	Pb-free Only	Now
ATA5577M1	NOA3 Module, RFID Read/Write IDIC Module for Contactless Identification, Backward Compatible to 5551, 5557 and 5567 in Most Common Modes. 64-bit Unique TAG ID, Improved Operating Performance, High Temperature Data Retention, 330 pF Capacitor Integrated in Module	Micromodule	Pb-free Only	4Q2008
TMEB8704	Design Kit for 125 kHz, Supports the x55xx Family Including the 5561 Authentication			Now
ATAK2270	Design Kit for 125 kHz, Supports the x55xx Family Including the ATA5567 Extended Mode			Now
ATAK2270UG	Kit for Upgrade from TMEB8704 to ATAK2270			Now
ATA2270-EK1	Evaluation Kit for 125 kHz, Supports the ATA5567 Extended Mode, ATA5577, ATA5558, Animal-ID, Stand-alone and PC-operated			Now
ATAB5570	Development Board for 125 kHz, Supports the ATA5570			Now

Secure Microcontrollers

Secure Microcontrollers – AT90SC Family

Part Number	RAM (Kbytes)	ROM (Kbytes)	Flash (Kbytes)	EEPROM (Kbytes)	Voltage (V)	Asym. Crypto Engine	Other Features	Availability
AT90SC6418RU	2	64	N/A	18	2.7 - 5.5	No	RNG, One Timer	Now
AT90SC12036RU	3	120	N/A	36	2.7 - 5.5	No	RNG, One Timer	Now
AT90SC9604RU	2	96	N/A	4	2.7 - 5.5	No	Hardware DES/TDES, CRC, Common Criteria EAL4+, EMVCo Approval	Now
AT90SC9608RT	4	96	N/A	8	2.7 - 5.5	No	Hardware DES/TDES, CRC, Common Criteria EAL4+, EMVCo Approval	Now
AT90SC9618RT	4	96	N/A	18	2.7 - 5.5	No	Hardware DES/TDES, CRC, Common Criteria EAL4+, EMVCo Approval	Now
AT90SC16018RU	4	160	N/A	18	2.7 - 5.5	No	Hardware DES/TDES, CRC, EMVCo Target	1Q2009
AT90SC19236RU	4	192	N/A	36	1.62 - 5.5	No	Hardware DES/TDES, CRC	Now
AT90SC3636U	6	N/A	36	36	1.62 - 5.5V	No	Hardware DES/TDES, CRC	Now
AT90SC25672RU	6	256	N/A	72	1.62 - 5.5	No	Hardware DES/TDES, CRC	Now
AT90SC128112RU	4	128	N/A	112	1.62 - 5.5	No	RNG, CRC	Now
AT90SC288144RU	6	288	N/A	144	1.62 - 5.5	No	Hardware DES/TDES, CRC	Now
AT90SC1818CT	5	N/A	18	18	2.7 - 5.5	Yes	Hardware DES/TDES, CRC	Now
AT90SC3636CT-USB	8	N/A	36	36	1.62 - 5.5	Yes	On-chip USB V2.0 Full-speed Interface, Hardware DES/TDES, CRC	Now
AT90SC9618RCT	4	96	N/A	18	2.7 - 5.5	Yes	Hardware DES/TDES, CRC, Common Criteria EAL4+, EMVCo	Now
AT90SC12836RCT	5	128	N/A	36	2.7 - 5.5	Yes	Hardware DES/TDES, CRC, Common Criteria EAL4+, ZKA, EMVCo Approvals	Now
AT90SC13612RCU	4.5	136	N/A	12	2.7 - 5.5	Yes	Hardware DES/TDES, CRC, SPI, Common Criteria EAL5+, EMVCo and ZKA Targets	Now
AT90SC20818RCU	4.5	208	N/A	18	2.7 - 5.5	Yes	Hardware DES/TDES, CRC, Common Criteria EAL5+ and EMVCo Targets	Now
AT90SC24036RCU	6	240	N/A	36	2.7 - 5.5	Yes	Hardware DES/TDES, CRC, Common Criteria EAL5+ and EMVCo Targets	1Q2009
AT90SC25672RCT	8	256	N/A	72	1.62 - 5.5	Yes	Hardware DES/TDES, CRC, Common Criteria EAL4+, EMVCo Targets	Now
AT90SC25672RCT-USB	8	256	N/A	72	1.62 - 5.5	Yes	On-chip USB V2.0 Full-speed Interface, Hardware DES/TDES, CRC, Common Criteria EAL4+	Now
AT90SC28848RCU	8	288	N/A	48	2.7 - 5.5	Yes	Hardware DES/TDES, CRC, SPI, Common Criteria EAL5+, ZKA Approval, EMVCo Target	Now
AT90SC28872RCU	8	288	N/A	72	2.7 - 5.5	Yes	Hardware DES/TDES, CRC, SPI, Common Criteria EAL5+, ZKA Approval, EMVCo Target	Now
AT90SC144144CT	8	N/A	144	144	1.62 - 5.5	Yes	Hardware DES/TDES, CRC, SPI, Common Criteria EAL4+ Target	Now
AT90SC320288RCT	8	320	N/A	288	1.62 - 5.5	Yes	Hardware DES/TDES, CRC, SPI, Common Criteria EAL4+ Target	Now

Note: 1.

Packaging Available for All AT90SC Products.

Smart Card Reader ICs

Part number	RAM (Bytes)	ROM (Kbytes)	Flash (Kbytes)	Code RAM (Kbytes)	EEPROM (Bytes)	Voltage	Com Interface	Other features	Availability
AT83C5121	512	16	–	–	N/A	2.85 - 5.5	UART	Support Cards Class A/B/C	Now
AT85C5121	512	–	–	16	N/A	2.85 - 5.5	UART	CRAM = Executable RAM for Debug and Development Support Cards Class A/B/C	Now
AT89C5121	512	–	16	–	N/A	2.85 - 5.5	UART	Support Cards Class A/B/C	Now
AT83R5122	768	32	–	–	N/A	3.0 - 5.5	UART, USB 2.0, SPI	Support Cards Class A/B/C, Keyboard Interface, SPI, External Program Memory	Now
AT85C5122	768	–	–	32	N/A	3.0 - 5.5	UART, USB 2.0, SPI	CRAM = Executable RAM for Debug and Development Support Cards Class A/B/C, Keyboard Interface, SPI, External Program Memory	Now
AT89C5122	768	–	32	–	N/A	3.0 - 5.5	UART, USB 2.0, SPI	Support Cards Class A/B/C, Keyboard Interface, SPI, External Program Memory	Now
AT83C5123	768	30	–	–	512	3.0 - 5.5	UART, USB 2.0	Support Cards Class A/B/C	Now
AT83C5127	768	16	–	–	512	3.0 - 5.5	UART, USB 2.0	Support Cards Class A/B/C	Now
AT90SCR100	4K	–	64K	–	4K	2.7 - 5.5	UART, USB 2.0, 2SPI, TWI	Support Cards Class A/B/C and USB Cards, Keyboard Interface, SPI, High-speed SPI	4Q2008
T89C5121-SK1	Starter Kit for T89C5121 Smart Card Reader Microcontroller								Now
AT89STK-03	Starter Kit for AT8xC5122/23/27 USB Smart Card Reader Microcontrollers								Now
AT90SCR-STK01	Starter Kit for AT90SCR100 Smart Card Reader Microcontroller								4Q2008

Smart Card Reader ICs – Interface

Part Number	Description	RoHS Compliance	Availability
AT83C26	Multiple Smart Card Interface (2 Full Smart Cards and 3 SAMs)	Yes	Now
AT89STK-09	Starter Kit for the AT83C26 Multiple Smart Card Interface		Now

Smart Card Reader ICs – Ready-to-Use Solutions

Part Number	Description	Availability
AT83C25OK	Pre-certified Smart Card Reader Solution for PMCIA Link with Omnikey® EMV2000 Firmware	Now
AT83C21GC	Pre-certified Smart Card Reader Solution for Serial Link with Gemalto™ GemCore® EMV2000 Firmware	Now
AT83C22OK	Pre-certified Smart Card Reader Keyboard Solution for USB Link with Omnikey EMV2000 Firmware	Now
AT83C23OK	Low-pin Count Pre-certified Smart Card Reader Solution for USB Link with Omnikey EMV2000 Firmware	Now
AT89RFD-02	USB Smart Card Reader Reference Design with Omnikey Firmware for AT83C22OK/23OK	Now
AT89RFD-05	Serial Smart Card Reader Reference Design with Gemalto GemCore Software for AT83C21GC	Now
AT89RFD-06	PCMCIA Smart Card Reader Reference Design with Omnikey Firmware for AT83C25OK	Now

Product Guide Index

0.09 μm	29	AT24C1024B	55	AT27BV256	51	AT32AP7200	16
0.13 μm	29	AT24C128	36, 54	AT27BV512	51	AT32UC3A0128	17
0.15 μm	29	AT24C128B	55	AT27C010	51	AT32UC3A0256	17
0.18 μm	29	AT24C16A	36, 54	AT27C020	51	AT32UC3A0512	17
0.35 μm	29	AT24C16B	55	AT27C040	51	AT32UC3A1128	17
29C516E	47	AT24C256	36, 54	AT27C080	51	AT32UC3A1256	17
5962-38267	53	AT24C256B	55	AT27C1024	51	AT32UC3A1512	17
5962-07201	61	AT24C32A	36, 54	AT27C2048	51	AT32UC3B0128	17
5962-88525	53	AT24C32C	55	AT27C256R	51	AT32UC3B0256	17
5962-88634	53	AT24C512B	55	AT27C4096	51	AT32UC3B064	17
5962-89841	61	AT24C64A	36, 54	AT27C512R	51	AT32UC3B1128	17
80C32E	48	AT24C64B	55	AT27C516	51	AT32UC3B1256	17
		AT24C64C	55	AT27LV010A	51	AT32UC3B164	17
		AT24HC02B	55	AT27LV020A	51	AT34C02C	36, 54, 55
		AT24HC04B	55	AT27LV040A	51	AT40K05	59
Analog Cells	29	AT25010A	36, 54, 55	AT27LV256A	51	AT40K05AL	59
ARM Peripherals	29	AT25010B	55	AT27LV512A	51	AT40K10	59
ARM System Bus Peripherals	29	AT25020A	36, 54, 55	AT28BV256	53	AT40K10AL	59
AT17F040	60	AT25020B	55	AT28BV256-DWF	53	AT40K20	59
AT17F040A	60	AT25040A	36, 54, 56	AT28BV64B	53	AT40K20AL	59
AT17F080	60	AT25040B	56	AT28BV64B-DWF	53	AT40K40	59
AT17F080A	60	AT25080A	36, 54, 56	AT28C010	53	AT40K40AL	59
AT17F16	60	AT25080B	56	AT28C010-12DK	48	AT40KAL040	47
AT17F16A	60	AT25128A	36, 54, 56	AT28C010-DFWM	53	AT40KEL040	47
AT17F32	60	AT25128B	56	AT28C010E	53	AT42QT1060	27
AT17F32A	60	AT25160A	36, 54, 56	AT28C256	53	AT42QT2160	27
AT17LV002	59	AT25160B	56	AT28C256-DFWM	53	AT42QT4120	28
AT17LV002A	59	AT25256A	36, 54, 56	AT28C256E	53	AT42QT4160	28
AT17LV010	59	AT25256B	56	AT28C256F	53	AT42QT5320	28
AT17LV010-10DP	48	AT25320A	36, 54, 56	AT28C64B	53	AT42QT5480	28
AT17LV010A	59	AT25320B	56	AT28C64B-DWF	53	AT45DB011D	57
AT17LV040	59	AT25512	56	AT28HC256	53	AT45DB021D	57
AT17LV128	59	AT25640A	36, 54, 56	AT28HC256-DFWM	53	AT45DB041D	57
AT17LV256	59	AT25640B	56	AT28HC256E	53	AT45DB041D-2.5	57
AT17LV512	59	AT25DF021	57	AT28HC256F	53	AT45DB081D	57
AT17LV512A	59	AT25DF041A	57	AT28HC64B	53	AT45DB081D-2.5	57
AT17LV65	59	AT25DF081	57	AT28HC64B-DWF	53	AT45DB161D	57
AT17N002	60	AT25DF161	57	AT28LV010	53	AT45DB161D-2.5	57
AT17N010	60	AT25DF321	57	AT29BV010A	52	AT45DB321D	57
AT17N040	60	AT25DF321A	57	AT29BV020	52	AT45DB642D	57
AT17N256	60	AT25DF641	57	AT29BV040A	52	AT45DCB002D	57
AT17N512	60	AT25F2048	57	AT29C010A	52	AT45DCB004D	57
AT18F002	60	AT25F512A	57	AT29C020	52	AT45DCB008D	57
AT18F010	60	AT25F512B	57	AT29C040A	52	AT49BV040B	52
AT18F040	60	AT25FS010	57	AT29C512	52	AT49BV160D(T)	52
AT18F080	60	AT26DF081A	57	AT29LV020	52	AT49BV160S(T)	52
AT18F-DK3	60	AT26DF161A	57	AT29LV040A	52	AT49BV163D(T)	52
AT24C01B	36, 54, 55	AT27BV010	51	AT29LV512	52	AT49BV320D(T)	52
AT24C02B	36, 54, 55	AT27BV020	51	AT32AP7000	16	AT49BV320S(T)	52
AT24C04B	36, 54, 55	AT27BV040	51	AT32AP7001	16	AT49BV322D(T)	52
AT24C08B	36, 54, 55	AT27BV1024	51	AT32AP7002	16	AT49BV640D(T)	52