Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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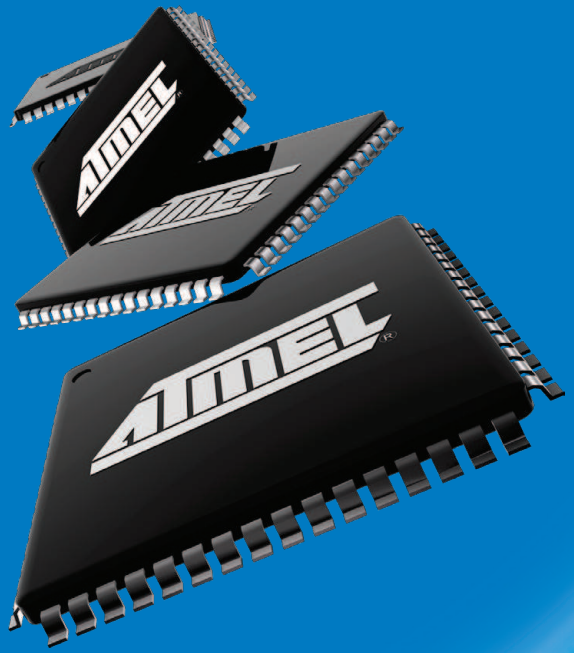
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

AVR®

8-bit Microcontrollers

AVR®32

32-bit Microcontrollers and Application Processors



Quick Reference Guide

February 2009

ATMEL®

Everywhere You Are®

AVR Introduction

Atmel® offers both 8-bit and 32-bit AVR®s.

AVR microcontrollers and application processors deliver unmatched flexibility. AVR combines the most code-efficient architecture for C and assembly programming with the ability to tune system parameters throughout the entire life cycle of your key products. Not only do you get to market faster, but once there, you can easily and cost-effectively refine and improve your product offering.

The AVR XMEGA gives you 16-bit performance and leading low-power features at 8-bit price.

It's simple: AVR works across the entire range of applications you're working on... or want to work on.

AVR Key Benefits

- High performance
- picoPower™ technology
- High code density
- High integration and scalability
- Complete tool offering
- Atmel's AVR is addressing the 8-bit and 16-bit market

AVR32 Key Benefits

- High CPU performance
- Low power consumption
- High data throughput
- Low system cost
- High reliability
- Easy to use

Environment Friendly Packages

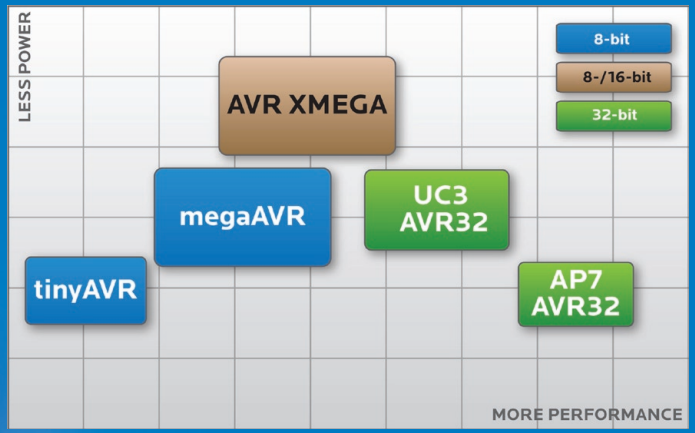
For AVR and AVR32 microcontrollers and application processors, all the lead free packages are RoHS compliant, lead free, halide free and fully green.

All parts are offered in fully green packaging only.

Product Range

Atmel microcontrollers - success through innovation

Atmel offers both 8-bit and 32-bit AVR's, and since day one the AVR philosophy has always been clear: Highest performance with no power penalty.



- tinyAVR
  1-16 KBytes Flash, 8-32 pin packages
- megaAVR
  4-256 KBytes Flash, 28-100 pin packages
- AVR XMEGA
  16-384 KBytes Flash, 44-100 pin packages
- AVR32 UC3
  16-512 KBytes Flash, 48-144 pin packages
- AVR32 AP7
  Up to 32 KBytes On-chip SRAM,
  196-256 pin packages

Product Families

- **tinyAVR®**

  General purpose microcontrollers with up to 16K Bytes Flash program memory, 512 Bytes SRAM and EEPROM.

- **megaAVR®**

  High performance microcontrollers with Hardware Multiplier. Up to 256 KBytes Flash, 4K Bytes EEPROM and 8K Bytes SRAM.

- **XMEGA™**

  The new XMEGA 8/16-bit AVR microcontrollers have new and advanced peripherals with increased performance, DMA and Event system, and extends the AVR family in low power/high performance markets.

- **AVR32 UC3**

  High performance, low power 32-bit AVR32 flash microcontrollers. Up to 512 KBytes Flash, 128 KBytes SRAM.

- **AVR32 AP7**

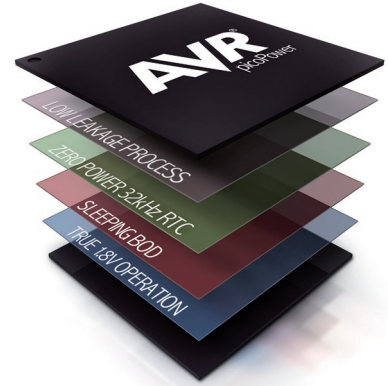
  High performance, low power 32-bit AVR32 application processors. Up to 32 KBytes SRAM.

- **Application Oriented**

  AVR-based devices covering specified areas such as such as automotive, LCD drivers, CAN networking, USB connectivity, motor control, lighting applications, battery management single-chip, IEEE 802.15.4/ZigBee™ and Remote Access Control.

Low Power

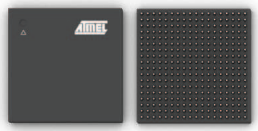
To meet the tough requirements of modern microcontrollers Atmel has combined years of low power research and developed picoPower technology. picoPower enables AVR microcontrollers to reduce power consumption in both sleep and active mode, and achieve the indust
with 500 nA @ 1.8V with RTC running and 100 nA in power-down sleep m



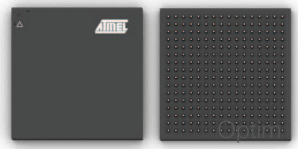
- True 1.8 Volt operation
- Low leakage process
- Sleeping Brown-out detector
- Ultra low power 32 kHz crystal oscillator
- Power Reduction Register
- Flash sampling

Web resources: www.atmel.com/products/avr/picopower/

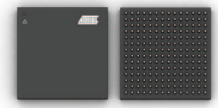
Packaging Range



TFBGA-324
15x15 mm



CTBGA-256
17x17 mm

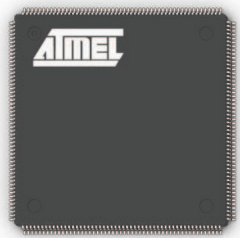


CTBGA-196
12x12 mm

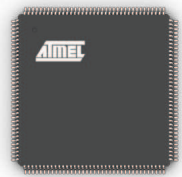
CBGA-100
9x9 mm

VFBGA-49
5x5 mm

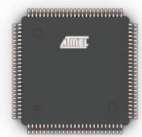
LGA-32
3.5x6.5 mm



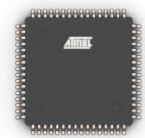
QFP-208
28x28 mm



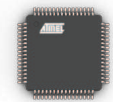
LQFP-144
20x20 mm



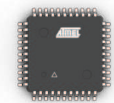
TQFP-100
14x14 mm



TQFP-64
14x14 mm



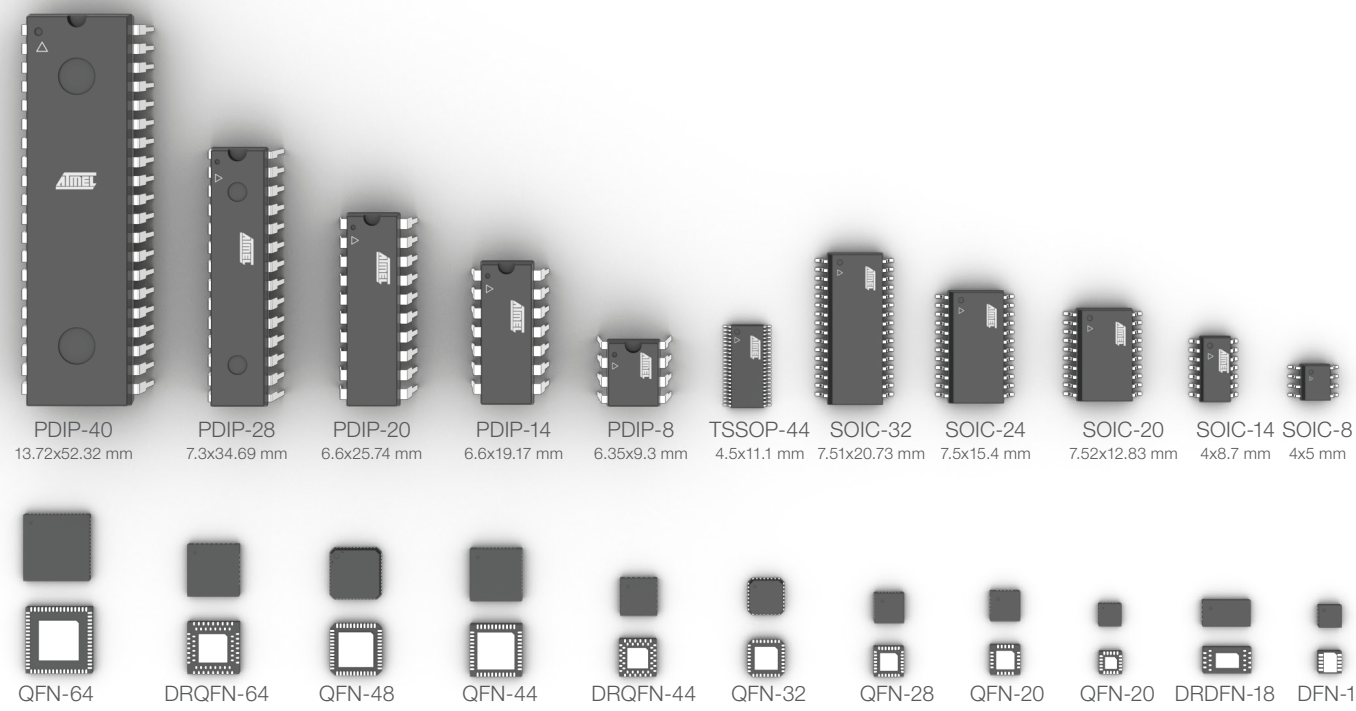
TQFP-64
10x10 mm



TQFP-44
10x10 mm

LQFP-48
7x7 mm

TQFP-32
7x7 mm


PDIP-40
13.72x52.32 mm
PDIP-28
7.3x34.69 mm
PDIP-20
6.6x25.74 mm
PDIP-14
6.6x19.17 mm
PDIP-8
6.35x9.3 mm
TSSOP-44
4.5x11.1 mm
SOIC-32
7.51x20.73 mm
SOIC-24
7.5x15.4 mm
SOIC-20
7.52x12.83 mm
SOIC-14
4x8.7 mm
SOIC-8
4x5 mm
QFN-64
9x9 mm
DRQFN-64
7x7 mm
QFN-48
7x7 mm
QFN-44
7x7 mm
DRQFN-44
5x5 mm
QFN-32
5x5 mm
QFN-28
4x4 mm
QFN-20
4x4 mm
QFN-20
3x3 mm
DRDFN-18
3.5x6.5 mm
DFN-10
3x3 mm

tinyAVR

Don’t let the name fool you... tinyAVR delivers huge capability. Optimized for a wide range of applications that require a small but powerful MCU solution, tinyAVR requires no external glue logic, and is available with integrated A/D converter and EEPROM memory.

By delivering Flash flexibility at Mask ROM prices, tinyAVR significantly cuts your time to market, while boosting your bottom line. And there’s nothing tiny about that.

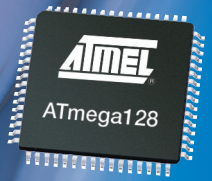
tinyAVR Key Benefits

- Optimized for simple applications requiring a small microcontroller.
- Great performance for cost effective devices.
- Fully featured with 10-bit ADCs and high speed PWMs onboard.
- Self-Programming Flash memory for maximum flexibility.
- debugWIRE On-Chip Debug and In-System Programming.

Product	Status (f)	Flash (KB)	EEPROM (Bytes)	RAM (Bytes)	picoPower	I/O pins	UART/USART	SPI/TWI by USI	TWI	8-bit Timers	16-bit Timers	PWM (Channel)	10-bit A/D (channels)	Analog Gain Stage	DebugWIRE/OCD	Vcc Range (V)	Clock Speed (MHz)	Package	Pb-free, Green (a)	Temp. Range
ATtiny13A	P	1	64	64	Y	6				1		2	4		Y	1.8 - 5.5	20	PDIP8, SOIC8, QFN20, QFN10	Y	-40°C to +85°C
ATtiny2313	P	2	128	128		18	1	1		1	1	4			Y	1.8 - 5.5	10	PDIP20, SOIC20, QFN20	Y	-40°C to +85°C
	P	2	128	128		18	1	1		1	1	4			Y	2.7 - 5.5	20	PDIP20, SOIC20, QFN20	Y	-40°C to +85°C
ATtiny24	P	2	128	128		12		1		1	1	4	8	Y	Y	1.8 - 5.5	10	PDIP14, SOIC14, QFN20	Y	-40°C to +85°C
	P	2	128	128		12		1		1	1	4	8	Y	Y	2.7 - 5.5	20	PDIP14, SOIC14, QFN20	Y	-40°C to +85°C
ATtiny25	P	2	128	128		6		1		2 (c)		4 (d)	4	Y	Y	1.8 - 5.5	10	PDIP8, SOIC8, QFN20	Y	-40°C to +85°C
	P	2	128	128		6		1		2 (c)		4 (d)	4	Y	Y	2.7 - 5.5	20	PDIP8, SOIC8, QFN20	Y	-40°C to +85°C
ATtiny26	P	2	128	128		16		1		2		2	11	Y		2.7 - 5.5	8	PDIP20, SOIC20, QFN32	Y	-40°C to +85°C
	P	2	128	128		16		1		2		2	11	Y		4.5 - 5.5	16	PDIP20, SOIC20, QFN32	Y	-40°C to +85°C
ATtiny261	P	2	128	128		16		1		1 (c)	1	5 (e)	11	Y	Y	1.8 - 5.5	10	PDIP20, SOIC20, QFN32	Y	-40°C to +85°C
	P	2	128	128		16		1		1 (c)	1	5 (e)	11	Y	Y	2.7 - 5.5	20	PDIP20, SOIC20, QFN32	Y	-40°C to +85°C
ATtiny28L	P	2		(b)		11				1						1.8 - 5.5	1.2	PDIP28, QFN32, TQFP32	Y	-40°C to +85°C
	P	2		(b)		11				1						2.7 - 5.5	4	PDIP28, QFN32, TQFP32	Y	-40°C to +85°C
ATtiny44A	P	4	256	256	Y	12		1		1	1	4	8	Y	Y	1.8 - 5.5	10	PDIP14, SOIC14, QFN20 , VQFN20	Y	-40°C to +85°C
ATtiny45	P	4	256	256		6		1		2 (c)		4 (d)	4	Y	Y	1.8 - 5.5	10	PDIP8, SOIC8, QFN20	Y	-40°C to +85°C
	P	4	256	256		6		1		2 (c)		4 (d)	4	Y	Y	2.7 - 5.5	20	PDIP8, SOIC8, QFN20	Y	-40°C to +85°C
ATtiny461	P	4	256	256		16		1		1 (c)	1	5 (e)	11	Y	Y	1.8 - 5.5	10	PDIP20, SOIC20, QFN32	Y	-40°C to +85°C
	P	4	256	256		16		1		1 (c)	1	5 (e)	11	Y	Y	2.7 - 5.5	20	PDIP20, SOIC20, QFN32	Y	-40°C to +85°C
ATtiny48	P	4	64	256	Y	28(g)			1	1	1	2	8		Y	1.8 - 5.5	12	PDIP28, QFN32/28, TQFP32	Y	-40°C to +85°C
ATtiny84	P	8	512	512		12		1		1	1	4	8	Y	Y	1.8 - 5.5	10	PDIP14, QFN20	Y	-40°C to +85°C
	P	8	512	512		12		1		1	1	4	8	Y	Y	2.7 - 5.5	20	PDIP14, QFN20	Y	-40°C to +85°C
ATtiny85	P	8	512	512		6		1		2 (c)		4 (d)	4	Y	Y	1.8 - 5.5	10	PDIP8, SOIC8, QFN20	Y	-40°C to +85°C
	P	8	512	512		6		1		2 (c)		4 (d)	4	Y	Y	2.7 - 5.5	20	PDIP8, SOIC8, QFN20	Y	-40°C to +85°C

Product	Status (f)	Flash (KB)	EEPROM (Bytes)	RAM (Bytes)	picoPower	I/O pins	UART/USART	SPI/TWI by USI	TWI	8-bit Timers	16-bit Timers	PWM (Channel)	10-bit A/D (Channel)	Analog Gain Stage	DebugWIRE/OCD	Vcc Range (V)	Clock Speed (MHz)	Package	Pb-free, Green (a)	Temp. Range
ATtiny861	P	8	512	512		16		1		1 (c)	1	5 (e)	11	Y	Y	1.8 - 5.5	10	PDIP20, SOIC20, QFN/32	Y	-40°C to +85°C
	P	8	512	512		16		1		1 (c)	1	5 (e)	11	Y	Y	2.7 - 5.5	20	PDIP20, SOIC20, QFN32	Y	-40°C to +85°C
ATtiny88	P	8	64	512	Y	28 (g)			1	1	1	2	8		Y	1.8 - 5.5	12	PDIP28, QFN32/28, TQFP32	Y	-40°C to +85°C

a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also Halide free and fully Green.
b) The AVR core has 32 internal registers that can be used as RAM storage.
c) One high speed 8-bit timer/counter.
d) Two High Frequency, 250kHz, PWM Outputs.
e) Three High Frequency PWM Outputs for BLDC motor control.
f) P: Product in Full Production, I: Device under Introduction
g) 28 Programmable I/O Lines in 32-lead TQFP and 32-pad QFN/MLF package, 24 Programmable I/O Lines in 28-pin PDIP and 28-pad QFN/MLF package



megaAVR

When your designs call for a bit of extra muscle, you need megaAVR. Developed for applications that need to store a large amount of program code, megaAVR offers substantial program and data memories, and performance approaching 1 MIPS per MHz. Better yet, megaAVR delivers the power of self-programmability for fast, secure, cost-effective remote upgrades.

megaAVR Key Benefits

- Self-Programming Flash memory with boot block.
- High accuracy 10-bit A/D converters with up to x200 analog gain stage.
- USART, SPI and TWI(1) compliant serial interfaces.
- IEEE 1149.1 compliant JTAG interface on megaAVRs with 44 pins or more.
- On-Chip Debug through JTAG or debugWIRE interface.

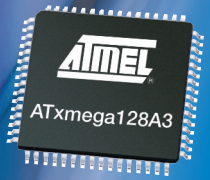
(1): Two Wire Interface (TWI) is a I2C compliant interface.

Product	Status (b)	Flash (KB)	EEPROM (Bytes)	RAM (Bytes)	picoPower	I/O pins	UART/USART	SPI/TWI by USI	SPI	TWI (I2C compliant)	8-bit Timers	16-bit Timers	PWM (Channel)	10-bit A/D (Channel)	Analog Gain Stage	DebugWIRE/OCD	JTAG/OCD	Vcc Range (V)	Clock Speed (MHz)	Package	Pb-free, Green (a)	Temp. Range
ATmega48PA	P	4	256	512	Y	23	1		1+USART	Y	2	1	6	8		Y		1.8-5.5V	20	TQFP32, QFN32, PDIP28	Y	-40°C to +85°C
ATmega88PA	P	8	512	1K	Y	23	1		1+USART	Y	2	1	6	8		Y		1.8-5.5V	20	TQFP32, QFN32, PDIP28	Y	-40°C to +85°C
ATmega8515	P	8	512	512		35	1		1		1	1	3					2.7-5.5V	8	TQFP44, PLCC44, QFN44, PDIP40	Y	-40°C to +85°C
	P	8	512	512		35	1		1		1	1	3					4.5-5.5V	16	TQFP44, PLCC44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega8535	P	8	512	512		32	1		1	Y	2	1	4	8	Y			2.7-5.5V	8	TQFP44, PLCC44, QFN44, PDIP40	Y	-40°C to +85°C
	P	8	512	512		32	1		1	Y	2	1	4	8	Y			4.5-5.5V	16	TQFP44, PLCC44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega16A	P	16	512	1K		32	1		1	Y	2	1	4	8	Y		Y	2.7-5.5V	16	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega162	P	16	512	1K		35	2		1		2	2	6				Y	1.8-5.5V	8	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
	P	16	512	1K		35	2		1		2	2	6				Y	2.7-5.5V	16	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega164P	P	16	512	1K	Y	32	2		1+USART	Y	2	1	6	8	Y		Y	1.8-5.5V	10	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
	P	16	512	1K	Y	32	2		1+USART	Y	2	1	6	8	Y		Y	2.7-5.5V	20	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega165P	P	16	512	1K	Y	54	1	1	1+USI	USI	2	1	4	8			Y	1.8-5.5V	8	TQFP64, QFN64	Y	-40°C to +85°C
	P	16	512	1K	Y	54	1	1	1+USI	USI	2	1	4	8			Y	2.7-5.5V	16	TQFP64, QFN64	Y	-40°C to +85°C
ATmega168	P	16	512	1K		23	1		1+USART	Y	2	1	6	8 c)		Y		1.8-5.5V	10	TQFP32, QFN32, PDIP28	Y	-40°C to +85°C
	P	16	512	1K		23	1		1+USART	Y	2	1	6	8 c)		Y		2.7-5.5V	20	TQFP32, QFN32, PDIP28	Y	-40°C to +85°C
ATmega168P	P	16	512	1K	Y	23	1		1+USART	Y	2	1	6	8		Y		1.8-5.5V	10	TQFP32, QFN32, PDIP28	Y	-40°C to +85°C
	P	16	512	1K	Y	23	1		1+USART	Y	2	1	6	8		Y		2.7-5.5V	20	TQFP32, QFN32, PDIP28	Y	-40°C to +85°C

Product	Status (b)	Flash (KB)	EEPROM (Bytes)	RAM (Bytes)	picoPower	I/O pins	UART/USART	SPI/TWI by USI	SPI	TWI (I2C compliant)	8-bit Timers	16-bit Timers	PWM (Channel)	10-bit A/D (Channel)	Analog Gain Stage	DebugWIRE/OCD	JTAG/OCD	Vcc Range (V)	Clock Speed (MHz)	Package	Pb-free, Green (a)	Temp. Range
ATmega32A	P	32	1K	2K		32	1		1	Y	2	1	4	8	Y		Y	2.7-5.5V	16	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega324PA	P	32	1K	2K	Y	32	2		1+USART	Y	2	1	6	8	Y		Y	1.8-5.5V	20	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega325	P	32	1K	2K		54	1	1	1+USI	USI	2	1	4	8			Y	1.8-5.5V	8	TQFP64, QFN64	Y	-40°C to +85°C
	P	32	1K	2K		54	1	1	1+USI	USI	2	1	4	8			Y	2.7-5.5V	16	TQFP64, QFN64	Y	-40°C to +85°C
ATmega325P	I	32	1K	2K	Y	54	1	1	1+USI	USI	2	1	4	8			Y	1.8-5.5V	10	TQFP64, QFN64	Y	-40°C to +85°C
	I	32	1K	2K	Y	54	1	1	1+USI	USI	2	1	4	8			Y	2.7-5.5V	20	TQFP64, QFN64	Y	-40°C to +85°C
ATmega3250	I	32	1K	2K		69	1	1	1+USI	USI	2	1	4	8			Y	1.8-5.5V	8	TQFP100	Y	-40°C to +85°C
	I	32	1K	2K		69	1	1	1+USI	USI	2	1	4	8			Y	2.7-5.5V	16	TQFP100	Y	-40°C to +85°C
ATmega3250P	I	32	1K	2K	Y	69	1	1	1+USI	USI	2	1	4	8			Y	1.8-5.5V	10	TQFP100	Y	-40°C to +85°C
	I	32	1K	2K	Y	69	1	1	1+USI	USI	2	1	4	8			Y	2.7-5.5V	20	TQFP100	Y	-40°C to +85°C
ATmega328P	I	32	1K	2K	Y	23	1		1+USART	Y	2	1	6	8		Y		1.8-5.5V	10	TQFP32, QFN32, PDIP28	Y	-40°C to +85°C
	I	32	1K	2K	Y	23	1		1+USART	Y	2	1	6	8		Y		2.7-5.5V	20	TQFP32, QFN32, PDIP28	Y	-40°C to +85°C
ATmega64	P	64	2K	4K		54	2		1	Y	2	2	6+2	8	Y		Y	2.7-5.5V	8	TQFP64, QFN64	Y	-40°C to +85°C
	P	64	2K	4K		54	2		1	Y	2	2	6+2	8	Y		Y	4.5-5.5V	16	TQFP64, QFN64	Y	-40°C to +85°C
ATmega640	P	64	4K	8K		86	4		1+USART	Y	2	4	12+4	16	Y		Y	1.8-5.5V	8	TQFP100, CBGA100	Y	-40°C to +85°C
	P	64	4K	8K		86	4		1+USART	Y	2	4	12+4	16	Y		Y	2.7-5.5V	16	TQFP100, CBGA100	Y	-40°C to +85°C
ATmega644	P	64	2K	4K		32	1		1+USART	Y	2	1	6	8	Y		Y	1.8-5.5V	10	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
	P	64	2K	4K		32	1		1+USART	Y	2	1	6	8	Y		Y	2.7-5.5V	20	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega644P	P	64	2K	4K	Y	32	2		1+USART	Y	2	1	6	8	Y		Y	1.8-5.5V	10	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
	P	64	2K	4K	Y	32	2		1+USART	Y	2	1	6	8	Y		Y	2.7-5.5V	20	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega645	P	64	2K	4K		54	1	1	1+USI	USI	2	1	4	8			Y	1.8-5.5V	8	TQFP64, QFN64	Y	-40°C to +85°C
	P	64	2K	4K		54	1	1	1+USI	USI	2	1	4	8			Y	2.7-5.5V	16	TQFP64, QFN64	Y	-40°C to +85°C

Product	Status (b)	Flash (KB)	EEPROM (Bytes)	RAM (Bytes)	picoPower	I/O pins	UART/USART	SPI/TWI by USI	SPI	TWI (I2C compliant)	8-bit Timers	16-bit Timers	PWM (Channel)	10-bit A/D (Channel)	Analog Gain Stage	DebugWIRE/OCD	JTAG/OCD	Vcc Range (V)	Clock Speed (MHz)	Package	Pb-free, Green (a)	Temp. Range
ATmega6450	I	64	2K	4K		69	1	1	1+USI	USI	2	1	4	8			Y	1.8-5.5V	8	TQFP100	Y	-40°C to +85°C
	I	64	2K	4K		69	1	1	1+USI	USI	2	1	4	8			Y	2.7-5.5V	16	TQFP100	Y	-40°C to +85°C
ATmega1284P	I	128	4K	16K	Y	32	2		1+USART	Y	1	2	6	8	Y		Y	1.8-5.5V	20	TQFP44, QFN44, PDIP40	Y	-40°C to +85°C
ATmega128	P	128	4K	4K		53	2		1	Y	2	2	6+2	8	Y		Y	2.7-5.5V	8	TQFP64, QFN64	Y	-40°C to +85°C
	P	128	4K	4K		53	2		1	Y	2	2	6+2	8	Y		Y	4.5-5.5V	16	TQFP64, QFN64	Y	-40°C to +85°C
ATmega1280	P	128	4K	8K		86	4		1+USART	Y	2	4	12+4	16	Y		Y	1.8-5.5V	8	TQFP100, CBGA100	Y	-40°C to +85°C
	P	128	4K	8K		86	4		1+USART	Y	2	4	12+4	16	Y		Y	2.7-5.5V	16	TQFP100, CBGA100	Y	-40°C to +85°C
ATmega1281	P	128	4K	8K		54	2		1+USART	Y	2	4	6+4	8	Y		Y	1.8-5.5V	8	TQFP64, QFN64	Y	-40°C to +85°C
	P	128	4K	8K		54	2		1+USART	Y	2	4	6+4	8	Y		Y	2.7-5.5V	16	TQFP64, QFN64	Y	-40°C to +85°C
ATmega2560	P	256	4K	8K		86	4		1+USART	Y	2	4	12+4	16	Y		Y	1.8-5.5V	8	TQFP100, CBGA100	Y	-40°C to +85°C
	P	256	4K	8K		86	4		1+USART	Y	2	4	12+4	16	Y		Y	4.5-5.5V	16	TQFP100, CBGA100	Y	-40°C to +85°C
ATmega2561	P	256	4K	8K		54	2		1+USART	Y	2	4	6+4	8	Y		Y	1.8-5.5V	8	TQFP64, QFN64	Y	-40°C to +85°C
	P	256	4K	8K		54	2		1+USART	Y	2	4	6+4	8	Y		Y	4.5-5.5V	16	TQFP64, QFN64	Y	-40°C to +85°C

a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also Halide free and fully Green.
b) P: Product in Full Production, I: Device under Introduction.
c) Only 6 ADC in PDIP packages.



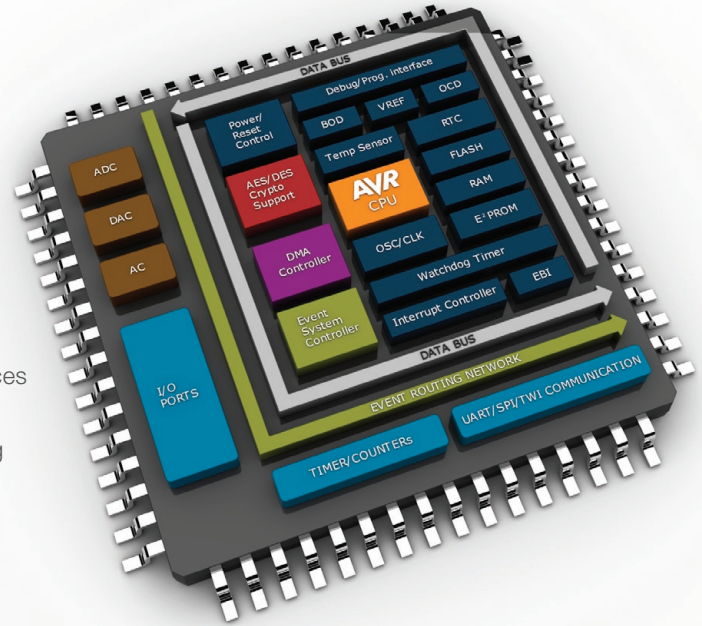
AVR XMEGA

AVR XMEGA extends the AVR product family to reach new markets and improve existing applications. With a DMA Controller, an Innovative Event System, Multi-level Interrupt Controller, Crypto engine, and high speed ADC and DAC, AVR XMEGA pushes the boundries for high performance 8/16-bit MCUs while still remaining highly compatible with tinyAVR and megaAVR

AVR XMEGA is the MCU for the next generation of 8- and 16-bit applications!

AVR XMEGA Key Benefits

- picoPower technology for ultra low power consumption
- True 1.6 volt operation and CPU speed up to 32 MHz
- Event System and DMA Controller
- High speed, high resolution 12-bit ADC and DAC
- Crypto engine, Timers/Counters and fast communication interfaces
- Accurate and flexible Clock System with dynamic clock switching



Product (a)	Status (b)	Flash (KB)	Boot code (Bytes)	EEPROM (Bytes)	SRAM (Bytes)	picoPower	DMA (Channels)	Event (Channels)	I/O	16-bit Timers	PWM (Channel)	RTC 16-bit	RTC 32-bit (c)	SPI	TWI (I2C)	USART	12-bit A/D (Channel)	12-bit DAC (Channel)	Analog Comp.	Interrupts	Interrupts Ext.	JTAG	PDI	Vcc (V) Range	Clock Speed (MHz)	Package	Temp. Range
ATxmega64A1	P	64	4	2	4	Y	4	8	78	8	24	Y		4	4	8	2x8	2x2	4	122	78	Y	Y	1.6 - 3.6	32	TQFP100, BGA100	-40°C to +85°C
ATxmega128A1	P	128	8	2	8	Y	4	8	78	8	24	Y		4	4	8	2x8	2x2	4	122	78	Y	Y	1.6 - 3.6	32	TQFP100, BGA100	-40°C to +85°C
ATxmega192A1	F	192	8	4	16	Y	4	8	78	8	24	Y		4	4	8	2x8	2x2	4	122	78	Y	Y	1.6 - 3.6	32	TQFP100, BGA100	-40°C to +85°C
ATxmega256A1	F	256	8	4	16	Y	4	8	78	8	24	Y		4	4	8	2x8	2x2	4	122	78	Y	Y	1.6 - 3.6	32	TQFP100, BGA100	-40°C to +85°C
ATxmega384A1	F	384	8	4	32	Y	4	8	78	8	24	Y		4	4	8	2x8	2x2	4	122	78	Y	Y	1.6 - 3.6	32	TQFP100, BGA100	-40°C to +85°C
ATxmega64A3	I	64	4	2	4	Y	4	8	50	7	22	Y		3	2	7	2x8	1x2	4	102	50	Y	Y	1.6 - 3.6	32	TQFP64, QFN64	-40°C to +85°C
ATxmega128A3	I	128	8	2	8	Y	4	8	50	7	22	Y		3	2	7	2x8	1x2	4	102	50	Y	Y	1.6 - 3.6	32	TQFP64, QFN64	-40°C to +85°C
ATxmega192A3	I	192	8	4	16	Y	4	8	50	7	22	Y		3	2	7	2x8	1x2	4	102	50	Y	Y	1.6 - 3.6	32	TQFP64, QFN64	-40°C to +85°C
ATxmega256A3B	I	256	8	4	16	Y	4	8	49	7	22		Y	2	2	6	2x8	1x2	4	102	49	Y	Y	1.6 - 3.6	32	TQFP64, QFN64	-40°C to +85°C
ATxmega256A3	I	256	8	4	16	Y	4	8	50	7	22	Y		3	2	7	2x8	1x2	4	102	50	Y	Y	1.6 - 3.6	32	TQFP64, QFN64	-40°C to +85°C
ATxmega16A4	I	16	4	1	2	Y	4	8	34	5	16	Y		2	2	5	1x12	1x2	2	77	34		Y	1.6 - 3.6	32	TQFP44, QFN44, VFBGA49	-40°C to +85°C
ATxmega32A4	I	32	4	1	4	Y	4	8	34	5	16	Y		2	2	5	1x12	1x2	2	77	34		Y	1.6 - 3.6	32	TQFP44, QFN44, VFBGA49	-40°C to +85°C
ATxmega64A4	F	64	4	2	4	Y	4	8	34	5	16	Y		2	2	5	1x12	1x2	2	77	34		Y	1.6 - 3.6	32	TQFP44, QFN44	-40°C to +85°C
ATxmega128A4	F	128	4	2	8	Y	4	8	34	5	16	Y		2	2	5	1x12	1x2	2	77	34		Y	1.6 - 3.6	32	TQFP44, QFN44	-40°C to +85°C
ATxmega64D3	I	64	4	2	4	Y		4	50	5	18	Y		2	1	3	1x16		2	67	50		Y	1.6 - 3.6	32	TQFP64, QFN4	-40°C to +85°C
ATxmega128D3	I	128	8	2	8	Y		4	50	5	18	Y		2	1	3	1x16		2	67	50		Y	1.6 - 3.6	32	TQFP64, QFN64	-40°C to +85°C
ATxmega192D3	I	192	8	2	16	Y		4	50	5	18	Y		2	1	3	1x16		2	67	50		Y	1.6 - 3.6	32	TQFP64, QFN64	-40°C to +85°C
ATxmega256D3	I	256	8	4	16	Y		4	50	5	18	Y		2	1	3	1x16		2	67	50		Y	1.6 - 3.6	32	TQFP64, QFN64	-40°C to +85°C
ATxmega16D4	I	16	4	1	2	Y		4	34	4	14	Y		2	1	2	1x12		2	55	34		Y	1.6 - 3.6	32	TQFP44, QFN44, VFBGA49	-40°C to +85°C
ATxmega32D4	I	32	4	1	4	Y		4	34	4	14	Y		2	1	2	1x12		2	55	34		Y	1.6 - 3.6	32	TQFP44, QFN44, VFBGA49	-40°C to +85°C

a) Pb-free packaging complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also Halide free and fully Green. All products have 32 MHz, 2 MHz and 32 kHz calibrated oscillators and Event System channels.
b) P: Production, F: Future product, I: Device under Introduction. c) Include Battery backup function