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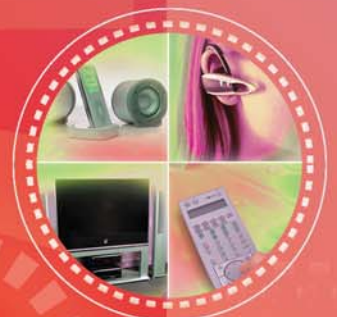
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**Winter 2008**

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# MICROCONTROLLERS

## AVR® 8-bit RISC

### ATmega AVR Series

| Part Number | Flash (Kbytes) | EEPROM (Bytes) | RAM (Bytes) | I/O Pins | USI | USART | SPI     | TWI | 8-bit Timer | 16-bit Timer | 10-bit ADC | BOD | On-chip Debug. | Self-prog. (S) | Package                    | VCC      | Speed (MHz) | Other | Availability |
|-------------|----------------|----------------|-------------|----------|-----|-------|---------|-----|-------------|--------------|------------|-----|----------------|----------------|----------------------------|----------|-------------|-------|--------------|
| ATmega48    | 4              | 256            | 512         | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE       | 2.7-5.5V | 0-20        | -     | Now          |
| ATmega48V   | 4              | 256            | 512         | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE       | 1.8-5.5V | 0-10        | -     | Now          |
| ATmega8     | 8              | 512            | 1K          | 23       | -   | 1     | 1       | 1   | 2           | 1            | 8          | Y   | -              | S              | PDIP, TQFP, QFN, DIE       | 4.5-5.5V | 0-16        | -     | Now          |
| ATmega8L    | 8              | 512            | 1K          | 23       | -   | 1     | 1       | 1   | 2           | 1            | 8          | Y   | -              | S              | PDIP, TQFP, QFN, DIE       | 2.7-5.5V | 0-8         | -     | Now          |
| ATmega88    | 8              | 512            | 1K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE       | 2.7-5.5V | 0-20        | -     | Now          |
| ATmega88V   | 8              | 512            | 1K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE       | 1.8-5.5V | 0-10        | -     | Now          |
| ATmega8515  | 8              | 512            | 512         | 35       | -   | 1     | 1       | -   | 1           | 1            | -          | Y   | -              | S              | PDIP, PLCC, TQFP, QFN, DIE | 4.5-5.5V | 0-16        | XRAM  | Now          |
| ATmega8515L | 8              | 512            | 512         | 35       | -   | 1     | 1       | -   | 1           | 1            | -          | Y   | -              | S              | PDIP, PLCC, TQFP, QFN, DIE | 2.7-5.5V | 0-8         | XRAM  | Now          |
| ATmega8535  | 8              | 512            | 512         | 32       | -   | 1     | 1       | 1   | 2           | 1            | 8          | Y   | -              | S              | PDIP, PLCC, TQFP, QFN, DIE | 4.5-5.5V | 0-16        | -     | Now          |
| ATmega8535L | 8              | 512            | 512         | 32       | -   | 1     | 1       | 1   | 2           | 1            | 8          | Y   | -              | S              | PDIP, PLCC, TQFP, QFN, DIE | 2.7-5.5V | 0-8         | -     | Now          |
| ATmega168   | 16             | 512            | 1K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE       | 2.7-5.5V | 0-20        | -     | Now          |
| ATmega168V  | 16             | 512            | 1K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE       | 1.8-5.5V | 0-10        | -     | Now          |
| ATmega162   | 16             | 512            | 1K          | 35       | -   | 2     | 1       | -   | 2           | 2            | -          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE       | 2.7-5.5V | 0-16        | XRAM  | Now          |
| ATmega162V  | 16             | 512            | 1K          | 35       | -   | 2     | 1       | -   | 2           | 2            | -          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE       | 1.8-5.5V | 0-8         | XRAM  | Now          |
| ATmega16A   | 16             | 512            | 1K          | 32       | -   | 1     | 1       | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE       | 2.7-5.5V | 0-16        | -     | Now          |
| ATmega32A   | 32             | 1K             | 2K          | 32       | -   | 1     | 1       | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE       | 2.7-5.5V | 0-16        | -     | Now          |
| ATmega325   | 32             | 1K             | 2K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE             | 2.7-5.5V | 0-16        | -     | Now          |
| ATmega325V  | 32             | 1K             | 2K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE             | 1.8-5.5V | 0-8         | -     | Now          |
| ATmega3250  | 32             | 1K             | 2K          | 69       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, DIE                  | 2.7-5.5V | 0-16        | -     | Now          |
| ATmega3250V | 32             | 1K             | 2K          | 69       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, DIE                  | 1.8-5.5V | 0-8         | -     | Now          |
| ATmega64    | 64             | 2              | 4           | 54       | -   | 2     | 1       | 1   | 2           | 2            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE             | 4.5-5.5V | 0-16        | XRAM  | Now          |
| ATmega64L   | 64             | 2              | 4           | 54       | -   | 2     | 1       | 1   | 2           | 2            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE             | 2.7-5.5V | 0-8         | XRAM  | Now          |
| ATmega640   | 64             | 4              | 8           | 86       | -   | 4     | 1+USART | 1   | 2           | 4            | 16         | Y   | JTAG           | S              | TQFP, BGA, DIE             | 2.7-5.5V | 0-16        | XRAM  | Now          |
| ATmega640V  | 64             | 4              | 8           | 86       | -   | 4     | 1+USART | 1   | 2           | 4            | 16         | Y   | JTAG           | S              | TQFP, BGA, DIE             | 1.8-5.5V | 0-8         | XRAM  | Now          |

Note: 1. All ATmega AVR Series parts are RoHS compliant.

MCUS: ATMEGA AVR SERIES



## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### ATmega AVR Series (Continued)

| Part Number | Flash (Kbytes) | EEPROM (Kbytes) | RAM (Kbytes) | I/O Pins | USI | USART | SPI     | TWI | 8-bit Timer | 16-bit Timer | 10-bit ADC | BOD | On-chip Debug. | Self-prog. (S) | Package              | VCC      | Speed (MHz) | Other      | Availability |
|-------------|----------------|-----------------|--------------|----------|-----|-------|---------|-----|-------------|--------------|------------|-----|----------------|----------------|----------------------|----------|-------------|------------|--------------|
| ATmega644   | 64             | 2               | 4            | 32       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE | 2.7-5.5V | 0-20        | -          | Now          |
| ATmega644V  | 64             | 2               | 4            | 32       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE | 1.8-5.5V | 0-10        | -          | Now          |
| ATmega645   | 64             | 2               | 4            | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 2.7-5.5V | 0-16        | -          | Now          |
| ATmega645V  | 64             | 2               | 4            | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 1.8-5.5V | 0-8         | -          | Now          |
| ATmega6450  | 64             | 2               | 4            | 69       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, DIE            | 2.7-5.5V | 0-16        | -          | Now          |
| ATmega6450V | 64             | 2               | 4            | 69       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, DIE            | 1.8-5.5V | 0-8         | -          | Now          |
| ATmega128   | 128            | 4               | 4            | 53       | -   | 2     | 1       | 1   | 2           | 2            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 4.5-5.5V | 0-16        | XRAM       | Now          |
| ATmega128L  | 128            | 4               | 4            | 53       | -   | 2     | 1       | 1   | 2           | 2            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 2.7-5.5V | 0-8         | XRAM       | Now          |
| ATmega1280  | 128            | 4               | 8            | 86       | -   | 4     | 1+USART | 1   | 2           | 4            | 16         | Y   | JTAG           | S              | TQFP, BGA, DIE       | 2.7-5.5V | 0-16        | XRAM       | Now          |
| ATmega1280V | 128            | 4               | 8            | 86       | -   | 4     | 1+USART | 1   | 2           | 4            | 16         | Y   | JTAG           | S              | TQFP, BGA, DIE       | 1.8-5.5V | 0-8         | XRAM       | Now          |
| ATmega1281  | 128            | 4               | 8            | 54       | -   | 2     | 1+USART | 1   | 2           | 4            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 2.7-5.5V | 0-16        | XRAM       | Now          |
| ATmega1281V | 128            | 4               | 8            | 54       | -   | 2     | 1+USART | 1   | 2           | 4            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 1.8-5.5V | 0-8         | XRAM       | Now          |
| ATmega2561  | 256            | 4               | 8            | 54       | -   | 2     | 1+USART | 1   | 2           | 4            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 2.7-5.5V | 0-16        | XRAM       | Now          |
| ATmega2561V | 256            | 4               | 8            | 54       | -   | 2     | 1+USART | 1   | 2           | 4            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 1.8-5.5V | 0-8         | XRAM       | Now          |
| ATmega2560  | 256            | 4               | 8            | 86       | -   | 4     | 1+USART | 1   | 2           | 4            | 16         | Y   | JTAG           | S              | TQFP, BGA, DIE       | 2.7-5.5V | 0-16        | XRAM       | Now          |
| ATmega2560V | 256            | 4               | 8            | 86       | -   | 4     | 1+USART | 1   | 2           | 4            | 16         | Y   | JTAG           | S              | TQFP, BGA, DIE       | 1.8-5.5V | 0-8         | XRAM       | Now          |
| ATmega8HVA  | 8              | 256             | 512          | 6        | -   | -     | 1       | -   | -           | 2            | -          | Y   | debugWIRE      | S              | LGA, TSOP            | 1.8-9.0V | 0-4         | 12-bit ADC | Now          |
| ATmega16HVA | 16             | 256             | 512          | 6        | -   | -     | 1       | -   | -           | 2            | -          | Y   | debugWIRE      | S              | LGA, TSOP            | 1.8-9.0V | 0-4         | 12-bit ADC | Now          |

#### Evaluation/Development Kits

|             |   |     |
|-------------|---|-----|
| ATAVRBFLY   | AVR Butterfly, ATmega169 Demo Board with LCD and Speaker  | 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 |
| ATAVRISP2   | AVRISP Programmer for All AVR ISP Devices   | Now |
| ATAVRRTOS   | AVR Real-time Operating System Development Kit  | Now |
| ATJTAGICE2  | AVR Low-cost In-Circuit Emulator Supporting All AVR with debugWIRE or JTAG Interface  | Now |
| ATSTK500    | STK <sup>®</sup> 500 AVR Starter Kit with AVR Studio <sup>®</sup> Interface   | Now |
| ATSTK501    | STK501 Expansion of STK500 to Support 64-pin megaAVR <sup>®</sup> Devices   | Now |
| ATSTK503    | STK503 Expansion of STK500 for 100-pin megaAVR Devices  | Now |
| ATSTK600    | Starter Kit and Development System for AVR and AVR32  | Now |

Note: 1. All ATmega AVR Series parts are RoHS compliant.

## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### ATmega picoPower™ AVR Series

| Part Number | Flash (Kbytes) | EEPROM (Bytes) | RAM (Bytes) | I/O Pins | USI | USART | SPI     | TWI | 8-bit Timer | 16-bit Timer | 10-bit ADC | BOD | On-chip Debug. | Self-prog. (S) | Package                           | VCC      | Speed (MHz) | Availability |
|-------------|----------------|----------------|-------------|----------|-----|-------|---------|-----|-------------|--------------|------------|-----|----------------|----------------|-----------------------------------|----------|-------------|--------------|
| ATtiny13A   | 1              | 64             | 64          | 6        | 1   | -     | -       | -   | -           | -            | 4          | Y   | debug-WIRE     | S              | QFN, PDIP, SOIC, Narrow SOIC, DIE | 1.8-5.5V | 0-20        | Now          |
| ATtiny48    | 4              | 64             | 256         | 28       | -   | -     | Y       | 1   | 1           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE              | 1.8-5.5V | 0-12        | Now          |
| ATtiny88    | 8              | 64             | 512         | 28       | -   | -     | Y       | 1   | 1           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE              | 1.8-5.5V | 0-12        | Now          |
| ATmega48P   | 4              | 256            | 512         | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE              | 2.7-5.5V | 0-20        | Now          |
| ATmega48PV  | 4              | 256            | 512         | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE              | 1.8-5.5V | 0-10        | Now          |
| ATmega88P   | 8              | 512            | 1K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE              | 2.7-5.5V | 0-20        | Now          |
| ATmega88PV  | 8              | 512            | 1K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE              | 1.8-5.5V | 0-10        | Now          |
| ATmega168P  | 16             | 512            | 1K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE              | 2.7-5.5V | 0-20        | Now          |
| ATmega168PV | 16             | 512            | 1K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE              | 1.8-5.5V | 0-10        | Now          |
| ATmega164P  | 16             | 512            | 1K          | 32       | -   | 2     | 1+USART | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE              | 2.7-5.5V | 0-20        | Now          |
| ATmega164PV | 16             | 512            | 1K          | 32       | -   | 2     | 1+USART | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE              | 1.8-5.5V | 0-10        | Now          |
| ATmega165P  | 16             | 512            | 1K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE                    | 2.7-5.5V | 0-16        | Now          |
| ATmega165PV | 16             | 512            | 1K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE                    | 1.8-5.5V | 0-8         | Now          |
| ATmega169P  | 16             | 512            | 1K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE                    | 2.7-5.5V | 0-16        | Now          |
| ATmega169PV | 16             | 512            | 1K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE                    | 1.8-5.5V | 0-8         | Now          |
| ATmega324P  | 32             | 1K             | 2K          | 32       | -   | 2     | 1+USART | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE              | 2.7-5.5V | 0-20        | Now          |
| ATmega324PV | 32             | 1K             | 2K          | 32       | -   | 2     | 1+USART | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE              | 1.8-5.5V | 0-10        | Now          |
| ATmega325P  | 32             | 1K             | 2K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE                    | 2.7-5.5V | 0-16        | Now          |
| ATmega325PV | 32             | 1K             | 2K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE                    | 1.8-5.5V | 0-8         | Now          |

Note: 1. All ATmega picoPower AVR Series parts are RoHS compliant.

## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### ATmega picoPower AVR Series (Continued)

| Part Number  | Flash (Kbytes) | EEPROM (Bytes) | RAM (Bytes) | I/O Pins | USI | USART | SPI     | TWI | 8-bit Timer | 16-bit Timer | 10-bit ADC | BOD | On-chip Debug. | Self-prog. (S) | Package              | VCC      | Speed (MHz) | Availability |
|--------------|----------------|----------------|-------------|----------|-----|-------|---------|-----|-------------|--------------|------------|-----|----------------|----------------|----------------------|----------|-------------|--------------|
| ATmega329P   | 32             | 1K             | 2K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 2.7-5.5V | 0-16        | Now          |
| ATmega329PV  | 32             | 1K             | 2K          | 54       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, QFN, DIE       | 1.8-5.5V | 0-8         | Now          |
| ATmega3250P  | 32             | 1K             | 2K          | 69       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, DIE            | 2.7-5.5V | 0-16        | Now          |
| ATmega3250PV | 32             | 1K             | 2K          | 69       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, DIE            | 1.8-5.5V | 0-8         | Now          |
| ATmega3290P  | 32             | 1K             | 2K          | 69       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, DIE            | 2.7-5.5V | 0-16        | Now          |
| ATmega3290PV | 32             | 1K             | 2K          | 69       | 1   | 1     | 1+USI   | USI | 2           | 1            | 8          | Y   | JTAG           | S              | TQFP, DIE            | 1.8-5.5V | 0-8         | Now          |
| ATmega328P   | 32             | 1K             | 2K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE | 2.7-5.5V | 0-20        | Now          |
| ATmega328PV  | 32             | 1K             | 2K          | 23       | -   | 1     | 1+USART | 1   | 2           | 1            | 8          | Y   | debug-WIRE     | S              | PDIP, TQFP, QFN, DIE | 1.8-5.5V | 0-10        | Now          |
| ATmega644P   | 64             | 2K             | 4K          | 32       | -   | 2     | 1+USART | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE | 2.7-5.5V | 0-20        | Now          |
| ATmega644PV  | 64             | 2K             | 4K          | 32       | -   | 2     | 1+USART | 1   | 2           | 1            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE | 1.8-5.5V | 0-10        | Now          |
| ATmega1284P  | 128            | 4K             | 16K         | 32       | -   | 2     | 1+USART | 1   | 1           | 2            | 8          | Y   | JTAG           | S              | PDIP, TQFP, QFN, DIE | 1.8-5.5V | 0-20        | Sampling     |

#### Evaluation/Development Kits

|             |   |     |
|-------------|---|-----|
| 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 |
| ATAVRISP2   | AVRISP Programmer for All AVR ISP Devices   | Now |
| ATAVRRTOS   | AVR Real-time Operating System Development Kit  | Now |
| ATJTAGICE2  | 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 |
| ATSTK501    | STK501 Expansion of STK500 to Support 64-pin megaAVR Devices  | Now |
| ATSTK503    | STK503 Expansion of STK500 for 100-pin megaAVR Devices  | Now |
| ATSTK600    | Starter Kit and Development System for AVR and AVR32  | Now |

Note: 1. All ATmega picoPower AVR Series parts are RoHS compliant.

## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### ATtiny AVR Series

| Part Number | Flash (Kbytes) | EEPROM (Bytes) | RAM (Bytes)  | I/O Pins | USI* | TWI | UART | 8-bit Timer | 16-bit Timer | 10-bit ADC | BOD | On-chip Debug. | In-System(I)/Self-prog. (S) | Package                           | VCC      | Speed (MHz) | Availability |
|-------------|----------------|----------------|--------------|----------|------|-----|------|-------------|--------------|------------|-----|----------------|-----------------------------|-----------------------------------|----------|-------------|--------------|
| ATtiny12    | 1              | 64             | 32 Registers | 6        | -    | -   | -    | 1           | -            | -          | Y   | -              | I                           | PDIP, SOIC, DIE                   | 4-5.5V   | 0-8         | Now          |
| ATtiny12L   | 1              | 64             | 32 Registers | 6        | -    | -   | -    | 1           | -            | -          | Y   | -              | I                           | PDIP, SOIC, DIE                   | 2.7-5.5V | 0-4         | Now          |
| ATtiny12V   | 1              | 64             | 32 Registers | 6        | -    | -   | -    | 1           | -            | -          | Y   | -              | I                           | PDIP, SOIC, DIE                   | 1.8-5.5V | 0-1         | Now          |
| ATtiny13A   | 1              | 64             | 64           | 6        | -    | -   | -    | 1           | -            | 4          | Y   | debug-WIRE     | S                           | PDIP, SOIC, Narrow SOIC, QFN, DIE | 1.8-5.5V | 0-20        | Now          |
| ATtiny24    | 2              | 128            | 128          | 12       | 1    | -   | -    | 1           | 1            | 8          | Y   | debug-WIRE     | S                           | PDIP, Narrow SOIC, QFN, DIE       | 2.7-5.5V | 0-20        | Now          |
| ATtiny24V   | 2              | 128            | 128          | 12       | 1    | -   | -    | 1           | 1            | 8          | Y   | debug-WIRE     | S                           | PDIP, Narrow SOIC, QFN, DIE       | 1.8-5.5V | 0-10        | Now          |
| ATtiny25    | 2              | 128            | 128          | 6        | 1    | -   | -    | 2           | -            | 4          | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE              | 2.7-5.5V | 0-20        | Now          |
| ATtiny25V   | 2              | 128            | 128          | 6        | 1    | -   | -    | 2           | -            | 4          | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE              | 1.8-5.5V | 0-10        | Now          |
| ATtiny26    | 2              | 128            | 128          | 16       | 1    | -   | -    | 2           | -            | 11         | Y   | -              | I                           | PDIP, SOIC, QFN, DIE              | 4.5-5.5V | 0-16        | Now          |
| ATtiny26L   | 2              | 128            | 128          | 16       | 1    | -   | -    | 2           | -            | 11         | Y   | -              | I                           | PDIP, SOIC, QFN, DIE              | 2.7-5.5V | 0-8         | Now          |
| ATtiny261   | 2              | 128            | 128          | 16       | 1    | -   | -    | 1           | 1            | 11         | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE              | 2.7-5.5V | 0-20        | Now          |
| ATtiny261V  | 2              | 128            | 128          | 16       | 1    | -   | -    | 1           | 1            | 11         | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE              | 1.8-5.5V | 0-10        | Now          |
| ATtiny2313  | 2              | 128            | 128          | 18       | 1    | -   | 1    | 1           | 1            | -          | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE              | 2.7-5.5V | 0-20        | Now          |
| ATtiny2313V | 2              | 128            | 128          | 18       | 1    | -   | 1    | 1           | 1            | -          | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE              | 1.8-5.5V | 0-10        | Now          |
| ATtiny28L   | 2              | -              | 32 Registers | 11       | -    | -   | -    | 1           | -            | -          | -   | -              | -                           | PDIP, QFN, TQFP, DIE              | 2.7-5.5V | 0-4         | Now          |
| ATtiny28V   | 2              | -              | 32 Registers | 11       | -    | -   | -    | 1           | -            | -          | -   | -              | -                           | PDIP, QFN, TQFP, DIE              | 1.8-5.5V | 0-1         | Now          |

- Notes:
- \*USI = Universal Serial Interface.
  - All ATtiny AVR Series parts are RoHS compliant.

## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### ATtiny AVR Series (Continued)

| Part Number | Flash (Kbytes) | EEPROM (Bytes) | RAM (Bytes) | I/O Pins | USI* | TWI | UART | 8-bit Timer | 16-bit Timer | 10-bit ADC | BOD | On-chip Debug. | In-System(I)/Self-prog. (S) | Package                     | VCC      | Speed (MHz) | Availability |
|-------------|----------------|----------------|-------------|----------|------|-----|------|-------------|--------------|------------|-----|----------------|-----------------------------|-----------------------------|----------|-------------|--------------|
| ATtiny44    | 4              | 256            | 256         | 12       | 1    | -   | -    | 1           | 1            | 8          | Y   | debug-WIRE     | S                           | PDIP, Narrow SOIC, QFN, DIE | 2.7-5.5V | 0-20        | Now          |
| ATtiny44V   | 4              | 256            | 256         | 12       | 1    | -   | -    | 1           | 1            | 8          | Y   | debug-WIRE     | S                           | PDIP, Narrow SOIC, QFN, DIE | 1.8-5.5V | 0-10        | Now          |
| ATtiny45    | 4              | 256            | 256         | 6        | 1    | -   | -    | 2           | -            | 4          | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE        | 2.7-5.5V | 0-20        | Now          |
| ATtiny45V   | 4              | 256            | 256         | 6        | 1    | -   | -    | 2           | -            | 4          | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE        | 1.8-5.5V | 0-10        | Now          |
| ATtiny461   | 4              | 256            | 256         | 16       | 1    | -   | -    | 1           | 1            | 11         | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE        | 2.7-5.5V | 0-20        | Now          |
| ATtiny461V  | 4              | 256            | 256         | 16       | 1    | -   | -    | 1           | 1            | 11         | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE        | 1.8-5.5V | 0-10        | Now          |
| ATtiny48    | 4              | 64             | 256         | 28       | -    | Y   | -    | 1           | 1            | 8          | Y   | debug-WIRE     | S                           | PDIP, TQFP, QFN, DIE        | 1.8-5.5V | 0-12        | Now          |
| ATtiny84    | 8              | 512            | 512         | 12       | 1    | -   | -    | 1           | 1            | 8          | Y   | debug-WIRE     | S                           | PDIP, QFN, DIE              | 2.7-5.5V | 0-20        | Now          |
| ATtiny84V   | 8              | 512            | 512         | 12       | 1    | -   | -    | 1           | 1            | 8          | Y   | debug-WIRE     | S                           | PDIP, QFN, DIE              | 1.8-5.5V | 0-10        | Now          |
| ATtiny85    | 8              | 512            | 512         | 6        | 1    | -   | -    | 2           | -            | 4          | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE        | 2.7-5.5V | 0-20        | Now          |
| ATtiny85V   | 8              | 512            | 512         | 6        | 1    | -   | -    | 2           | -            | 4          | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE        | 1.8-5.5V | 0-10        | Now          |
| ATtiny861   | 8              | 512            | 512         | 16       | 1    | -   | -    | 1           | 1            | 11         | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE        | 2.7-5.5V | 0-20        | Now          |
| ATtiny861V  | 8              | 512            | 512         | 16       | 1    | -   | -    | 1           | 1            | 11         | Y   | debug-WIRE     | S                           | PDIP, SOIC, QFN, DIE        | 1.8-5.5V | 0-10        | Now          |
| ATtiny88    | 8              | 64             | 512         | 28       | -    | Y   | -    | 1           | 1            | 8          | Y   | debug-WIRE     | S                           | PDIP, TQFP, QFN, DIE        | 1.8-5.5V | 0-12        | Now          |

#### Evaluation/Development Kits

|             |   |     |
|-------------|---|-----|
| 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 |
| ATAVRISP2   | AVRISP Programmer for All AVR ISP Devices   | Now |
| ATJTAGICE2  | 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 |
| ATSTK505    | STK505 Expansion of STK500 for 14-pin SOIC and 20-pin PDIP AVR Devices  | Now |
| ATSTK600    | Starter Kit and Development System for AVR and AVR32  | Now |

- Notes:
- \*USI = Universal Serial Interface.
  - All ATtiny AVR Series parts are RoHS compliant.

# MICROCONTROLLERS (CONTINUED)

## 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.



## MICROCONTROLLERS (CONTINUED)

### 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          |

#### Evaluation/Development Kits

|              |   |     |
|--------------|---|-----|
| 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 |
| ATJTAGICE2   | 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.



## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### CAN AVR™

| Part Number | Flash (Kbytes) | EEPROM (Kbytes) | RAM (Kbytes) | I/O Pins | CAN Message Objects | 16-bit Timers | 8-bit Timers | PWM (Channels) | RTC | SPI | USART | TWI (I2C Compatible) | ISP | 10-bit ADC | BOD | WDT | Int. RC | HW MULT | Interrupts | Interrupts Ext. | SPM | VCC      | Clock Speed (MHz) | Package       | Temperature  | Availability |
|-------------|----------------|-----------------|--------------|----------|---------------------|---------------|--------------|----------------|-----|-----|-------|----------------------|-----|------------|-----|-----|---------|---------|------------|-----------------|-----|----------|-------------------|---------------|--------------|--------------|
| AT90CAN32   | 32             | 1               | 2            | 53       | 15                  | 2             | 2            | 6+2            | 1   | 1   | 2     | 1                    | 1   | 8          | 1   | 1   | 1       | 1       | 37         | 8               | 1   | 2.7-5.5V | 16                | MLF64, TQFP64 | -40 to +85°C | Now          |
| AT90CAN64   | 64             | 2               | 4            | 53       | 15                  | 2             | 2            | 6+2            | 1   | 1   | 2     | 1                    | 1   | 8          | 1   | 1   | 1       | 1       | -          | -               | 1   | 2.7-5.5V | 16                | TQFP64, MLF64 | -40 to +85°C | Now          |
| AT90CAN128  | 128            | 4               | 4            | 53       | 15                  | 2             | 2            | 6+2            | 1   | 1   | 2     | 1                    | 1   | 8          | 1   | 1   | 1       | 1       | 37         | 8               | 1   | 2.7-5.5V | 16                | MLF64, TQFP64 | -40 to +85°C | Now          |

#### Evaluation/Development Kits

|             |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |
|-------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|
| 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 |
| ATAVRISP2   | AVRISP Programmer for All AVR ISP Devices   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Now |
| ATADAPCAN01 | Replacement: STK500/501/AT90CAN128 CAN Adapter  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Now |
| ATDVK90CAN1 | DVK90CAN1 Development Kit for AT90CAN Devices   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Now |
| ATJTAGICE2  | 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 |
| ATSTK501    | STK501 Expansion of STK500 to Support 64-pin megaAVR Devices  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Now |
| ATSTK600    | Starter Kit and Development System for AVR and AVR32  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Now |

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

## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### LCD Control AVR

| Part Number  | Flash (Kbytes) | EEPROM (Bytes) | RAM (Kbytes) | I/O Pins | USI | USART | SPI   | TWI | 8-bit Timer | 16-bit Timer | 10-bit ADC | BOD | On-chip Debugging | Self-prog. (S) | Package        | VCC      | Speed (MHz) | LCD  | Availability |
|--------------|----------------|----------------|--------------|----------|-----|-------|-------|-----|-------------|--------------|------------|-----|-------------------|----------------|----------------|----------|-------------|------|--------------|
| ATmega169P   | 16             | 512            | 1            | 54       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, QFN, DIE | 2.7-5.5V | 0-16        | 4x25 | Now          |
| ATmega169PV  | 16             | 512            | 1            | 54       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, QFN, DIE | 1.8-5.5V | 0-8         | 4x25 | Now          |
| ATmega329    | 32             | 1K             | 2            | 54       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, QFN, DIE | 2.7-5.5V | 0-16        | 4x25 | Now          |
| ATmega329V   | 32             | 1K             | 2            | 54       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, QFN, DIE | 1.8-5.5V | 0-8         | 4x25 | Now          |
| ATmega329P   | 32             | 1K             | 2            | 54       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, QFN, DIE | 2.7-5.5V | 0-16        | 4x25 | Now          |
| ATmega329PV  | 32             | 1K             | 2            | 54       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, QFN, DIE | 1.8-5.5V | 0-8         | 4x25 | Now          |
| ATmega3290   | 32             | 1K             | 2            | 69       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, DIE      | 2.7-5.5V | 0-16        | 4x40 | Now          |
| ATmega3290V  | 32             | 1K             | 2            | 69       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, DIE      | 1.8-5.5V | 0-8         | 4x40 | Now          |
| ATmega3290P  | 32             | 1K             | 2            | 69       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, DIE      | 2.7-5.5V | 0-16        | 4x40 | Now          |
| ATmega3290PV | 32             | 1K             | 2            | 69       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, DIE      | 1.8-5.5V | 0-8         | 4x40 | Now          |
| ATmeg649     | 64             | 2K             | 4            | 54       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, QFN, DIE | 2.7-5.5V | 0-16        | 4x25 | Now          |
| ATmega649V   | 64             | 2K             | 4            | 54       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, QFN, DIE | 1.8-5.5V | 0-8         | 4x25 | Now          |
| ATmega6490   | 64             | 2              | 4            | 69       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, DIE      | 2.7-5.5V | 0-16        | 4x40 | Now          |
| ATmega6490V  | 64             | 2              | 4            | 69       | 1   | 1     | 1+USI | USI | 2           | 1            | 8          | Y   | JTAG              | S              | TQFP, DIE      | 1.8-5.5V | 0-8         | 4x40 | Now          |

#### Evaluation/Development Kits

|             |   |     |
|-------------|---|-----|
| 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 |
| ATAVRBFLY   | AVR Butterfly, ATmega169 Demo Board with LCD and Speaker  | Now |
| ATAVRISP2   | AVRISP Programmer for All AVR ISP Devices   | Now |
| ATJTAGICE2  | 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 |
| ATSTK502    | STK502 Expansion of STK500 for 64-pin LCD AVR Devices   | Now |
| ATSTK504    | STK504 Expansion of STK500 for 100-pin LCD AVR Devices  | Now |
| ATSTK600    | Starter Kit and Development System for AVR and AVR32  | Now |

Note: 1. All LCD Control AVR parts are RoHS compliant.

## MICROCONTROLLERS (CONTINUED)

### 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          |

#### Evaluation/Development Kits

|               |   |     |
|---------------|---|-----|
| 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 |
| ATJTAGIC2     | 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.



## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### Smart Battery AVR

| Part Number | Flash (Kbytes) | EEPROM (Bytes) | RAM (Bytes) | Battery Prot. | CC-ADC (Resolution) | # Battery Cells | SMBus | Voltage ADC | Highside FET | VCC     | Clock Speed (MHz) | Package       | Temperature   | Availability |
|-------------|----------------|----------------|-------------|---------------|---------------------|-----------------|-------|-------------|--------------|---------|-------------------|---------------|---------------|--------------|
| ATmega406   | 40             | 512            | 2K          | Y             | 7                   | 2/3/4           | 1     | 6           | P-ch         | 4.0-25V | 1                 | LQFP48        | -40 to +85° C | Now          |
| ATmega8HVA  | 8              | 256            | 512         | Y             | 7                   | 2/1             | SW    | 3           | N-ch         | 1.8-9V  | 4                 | LGA36, TSOP28 | -10 to +70° C | Now          |
| ATmega16HVA | 16             | 256            | 512         | Y             | 7                   | 1/1             | SW    | 3           | N-ch         | 1.8-9V  | 4                 | LGA36, TSOP28 | -10 to +70° C | Now          |

#### Evaluation/Development Kits

|             |   |     |
|-------------|---|-----|
| 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 |
| ATAVRISP2   | AVRISP Programmer for All AVR ISP Devices   | Now |
| ATAVRSB100  | Smart Battery Development Kit for ATmega406   | Now |
| ATAVRBC100  | The BC100 Is a Reference Design that Demonstrates Charging and Discharging of Two Batteries/Battery Packs with a Programmable Charge Voltage of Up to 40V | Now |
| ATJTAGICE2  | AVR Low-cost In-Circuit Emulator Supporting All AVR with debugWIRE or JTAG Interface  | Now |

Note: 1. All Smart Battery AVR parts are RoHS compliant.

## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### USB Controllers AVR

| Part Number | Flash (Kbytes) | EEPROM (Bytes) | RAM (Bytes) | I/O Pins | USB Host/OTG | USB DRAM (Bytes) | USB Endpoints | USB Full Speed | USB Low Speed | 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 | Interrupts Ext. | SPM | VCC      | Clock Speed (MHz) | Package       | Temperature  | Availability |
|-------------|----------------|----------------|-------------|----------|--------------|------------------|---------------|----------------|---------------|---------------|--------------|----------------|-----|-----|-------|----------------------|-----|---------------------|-----|-----|---------|---------|------------|-----------------|-----|----------|-------------------|---------------|--------------|--------------|
| AT90USB82   | 8              | 512            | 512         | 22       | -            | 176              | 4+1           | Y              | -             | 1             | 1            | 3+1            | -   | 1   | 1     | -                    | Y   | -                   | Y   | Y   | Y       | -       | 29         | 8+2x8           | Y   | 2.7-5.5V | 16                | MLF32         | -40 to +85°C | Now          |
| AT90USB162  | 16             | 512            | 512         | 22       | -            | 176              | 4+1           | Y              | -             | 1             | 1            | 3+1            | -   | 1   | 1     | -                    | Y   | -                   | Y   | Y   | Y       | -       | 29         | 8+2x8           | Y   | 2.7-5.5V | 16                | TQFP32, MLF32 | -40 to +85°C | Now          |
| ATmega16U4  | 16             | 1K             | 1.25K       | 26       | -            | 832              | 6+1           | Y              | Y             | 2             | 1            | 5+3+1          | -   | 1   | 1     | Y                    | Y   | 12                  | Y   | Y   | Y       | Y       | 38         | 5+1x8           | Y   | 2.7-5.5V | 16                | MLF44         | -40 to +85°C | 4Q2008       |
| ATmega32U4  | 32             | 1K             | 2.5K        | 26       | -            | 832              | 6+1           | Y              | Y             | 2             | 1            | 5+3+1          | -   | 1   | 1     | Y                    | Y   | 12                  | Y   | Y   | Y       | Y       | 38         | 5+1x8           | Y   | 2.7-5.5V | 16                | TQFP44, MLF44 | -40 to +85°C | Now          |
| ATmega32U6  | 32             | 1K             | 2.5K        | 48       | -            | 832              | 6+1           | Y              | Y             | 2             | 2            | 6+2            | Y   | 1   | 1     | Y                    | Y   | 8                   | Y   | Y   | Y       | Y       | 38         | 5+1x8           | Y   | 2.7-5.5V | 16                | TQFP64, MLF64 | -40 to +85°C | Now          |
| AT90USB646  | 64             | 2K             | 4K          | 48       | -            | 832              | 6+1           | Y              | Y             | 2             | 2            | 6+2            | Y   | 1   | 1     | Y                    | Y   | 8                   | Y   | Y   | Y       | Y       | 38         | 8+1x8           | Y   | 2.7-5.5V | 16                | MLF64         | -40 to +85°C | Now          |
| AT90USB647  | 64             | 2K             | 4K          | 48       | 1            | 832              | 6+1           | Y              | Y             | 2             | 2            | 6+2            | Y   | 1   | 1     | Y                    | Y   | 8                   | Y   | Y   | Y       | Y       | 38         | 8+1x8           | Y   | 2.7-5.5V | 16                | TQFP32, MLF32 | -40 to +85°C | Now          |
| AT90USB1286 | 128            | 4K             | 8K          | 48       | -            | 832              | 6+1           | Y              | Y             | 2             | 2            | 6+2            | Y   | 1   | 1     | Y                    | Y   | 8                   | Y   | Y   | Y       | Y       | 38         | 8+1x8           | Y   | 2.7-5.5V | 16                | TQFP32, MLF32 | -40 to +85°C | Now          |
| AT90USB1287 | 128            | 4K             | 8K          | 48       | 1            | 832              | 6+1           | Y              | Y             | 2             | 2            | 6+2            | Y   | 1   | 1     | Y                    | Y   | 8                   | Y   | Y   | Y       | Y       | 38         | 8+1x8           | Y   | 2.7-5.5V | 16                | TQFP32, MLF32 | -40 to +85°C | Now          |

#### Evaluation/Development Kits

|             |   |     |
|-------------|---|-----|
| 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 |
| ATAVRISP2   | AVRISP Programmer for All AVR ISP Devices   | Now |
| AT90USBKEY  | Demo Kit for AT90USB Devices  | Now |
| ADEVK525    | Mass Storage Evaluation Kit for AT90USB Devices (STK525 Add-on)   | Now |
| ATJTAGICE2  | 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 |
| ATSTK520    | STK520 Expansion for STK500 to Support 90PWM Devices  | Now |
| ATSTK525    | STK525 AVR Starter Kit to Support 64-pin AT90USB Devices  | Now |
| ATSTK526    | STK526 AVR Starter Kit to Support 32-pin AT90USB Devices  | Now |
| ATSTK600    | Starter Kit and Development System for AVR and AVR32  | Now |

Note: 1. All USB Controllers AVR parts are RoHS compliant.



## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### XMEGA AVR Series

| Part Number  | Flash (Kbytes) | Boot Code (Kbytes) | EEPROM (Kbytes) | SRAM (Kbytes) | DMA (Channels) | Event (Channels) | I/O Pins | 16-bit Timer | PWM (Channels) | RTC 16-bit | SPI | TWI (I2C-compatible) | USART | ADC 12-bit (Channels) | DAC 12-bit (Channels) | Ana. Comp. | BOD | WDT | Calibrated Int. RC          | Interrupts | Ext. Interrupts | JTAG | PDI | VCC      | Clock Speed (MHz) | Package             | Temperature       | Availability |
|--------------|----------------|--------------------|-----------------|---------------|----------------|------------------|----------|--------------|----------------|------------|-----|----------------------|-------|-----------------------|-----------------------|------------|-----|-----|-----------------------------|------------|-----------------|------|-----|----------|-------------------|---------------------|-------------------|--------------|
| ATxmega64A1  | 64             | 4                  | 2               | 4             | 4              | 8                | 78       | 8            | 24             | Y          | 4   | 4                    | 8     | 2x8                   | 2x2                   | 4          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 122        | 78              | Y    | Y   | 1.6-3.6V | 32                | TQFP100,<br>CBGA100 | -40° to<br>+85° C | Sampling     |
| ATxmega128A1 | 128            | 8                  | 2               | 8             | 4              | 8                | 78       | 8            | 24             | Y          | 4   | 4                    | 8     | 2x8                   | 2x2                   | 4          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 122        | 78              | Y    | Y   | 1.6-3.6V | 32                | TQFP100,<br>CBGA100 | -40° to<br>+85° C | Sampling     |
| ATxmega192A1 | 192            | 8                  | 4               | 16            | 4              | 8                | 78       | 8            | 24             | Y          | 4   | 4                    | 8     | 2x8                   | 2x2                   | 4          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 122        | 78              | Y    | Y   | 1.6-3.6V | 32                | TQFP100,<br>CBGA100 | -40° to<br>+85° C | 2Q2009       |
| ATxmega256A1 | 256            | 8                  | 4               | 16            | 4              | 8                | 78       | 8            | 24             | Y          | 4   | 4                    | 8     | 2x8                   | 2x2                   | 4          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 122        | 78              | Y    | Y   | 1.6-3.6V | 32                | TQFP100,<br>CBGA100 | -40° to<br>+85° C | 2Q2009       |
| ATxmega64A3  | 64             | 4                  | 2               | 4             | 4              | 8                | 50       | 7            | 22             | Y          | 3   | 2                    | 7     | 2x8                   | 1x2                   | 4          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 102        | 50              | Y    | Y   | 1.6-3.6V | 32                | TQFP64,<br>MLF64    | -40° to<br>+85° C | 1Q2009       |
| ATxmega128A3 | 128            | 8                  | 2               | 8             | 4              | 8                | 50       | 7            | 22             | Y          | 3   | 2                    | 7     | 2x8                   | 1x2                   | 4          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 102        | 50              | Y    | Y   | 1.6-3.6V | 32                | TQFP64,<br>MLF64    | -40° to<br>+85° C | 1Q2009       |
| ATxmega192A3 | 192            | 8                  | 4               | 16            | 4              | 8                | 50       | 7            | 22             | Y          | 3   | 2                    | 7     | 2x8                   | 1x2                   | 4          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 102        | 50              | Y    | Y   | 1.6-3.6V | 32                | TQFP64,<br>MLF64    | -40° to<br>+85° C | 1Q2009       |
| ATxmega256A3 | 256            | 8                  | 4               | 16            | 4              | 8                | 50       | 7            | 22             | Y          | 3   | 2                    | 7     | 2x8                   | 1x2                   | 4          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 102        | 50              | Y    | Y   | 1.6-3.6V | 32                | TQFP64,<br>MLF64    | -40° to<br>+85° C | 1Q2009       |
| ATxmega16A4  | 16             | 4                  | 1               | 2             | 4              | 8                | 36       | 5            | 16             | Y          | 2   | 2                    | 5     | 1x12                  | 1x2                   | 2          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 77         | 36              | N    | Y   | 1.6-3.6V | 32                | TQFP44,<br>MLF44    | -40° to<br>+85° C | 1Q2009       |
| ATxmega32A4  | 32             | 4                  | 2               | 4             | 4              | 8                | 36       | 5            | 16             | Y          | 2   | 2                    | 5     | 1x12                  | 1x2                   | 2          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 77         | 36              | N    | Y   | 1.6-3.6V | 32                | TQFP44,<br>MLF44    | -40° to<br>+85° C | 1Q2009       |
| ATxmega64A4  | 64             | 4                  | 2               | 4             | 4              | 8                | 36       | 5            | 16             | Y          | 2   | 2                    | 5     | 1x12                  | 1x2                   | 2          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 77         | 36              | N    | Y   | 1.6-3.6V | 32                | TQFP44,<br>MLF44    | -40° to<br>+85° C | 1Q2009       |
| ATxmega128A4 | 128            | 4                  | 2               | 8             | 4              | 8                | 36       | 5            | 16             | Y          | 2   | 2                    | 5     | 1x12                  | 1x2                   | 2          | Y   | Y   | 32 MHz,<br>2 MHz,<br>32 kHz | 77         | 36              | N    | Y   | 1.6-3.6V | 32                | TQFP44,<br>MLF44    | -40° to<br>+85° C | 3Q2009       |

#### Evaluation/Development Kits

|             |  |        |
|-------------|--|--------|
| ATAVRISP2   | AVRISP Programmer for All AVR ISP Devices  | Now    |
| ATAVRONEKIT | AVR ONE! Development Tool for On-chip Debugging and Programming of all AVR32 Devices | 4Q2008 |
| ATJTAGICE2  | AVR Low-cost In-Circuit Emulator Supporting All AVR with debugWIRE or JTAG Interface | Now    |
| ATSTK600    | Starter Kit and Development System for AVR and AVR32                                 | Now    |

Note: 1. All XMEGA AVR Series Control AVR parts are RoHS compliant.

## MICROCONTROLLERS (CONTINUED)

### AVR 8-bit RISC (Continued)

#### MCU Wireless – 802.15.4/LoWPAN/ZigBee® Solutions

| Part Number              | AVR         | Radio | Flash (Kbytes) | EEPROM (Kbytes) | RAM (Kbytes) | ISM Band | Sensitivity (dBm) | Output Power (dBm) | VCC      | I/Os | Availability |
|--------------------------|-------------|-------|----------------|-----------------|--------------|----------|-------------------|--------------------|----------|------|--------------|
| <b>AT86RF230 Bundles</b> |             |       |                |                 |              |          |                   |                    |          |      |              |
| ATmega64RZA              | ATmega644   | RF230 | 64             | 1               | 4            | 2.4 GHz  | -101              | 3                  | 1.8-3.6V | 32   | Now          |
| ATmega64RZAP             | ATmega644P  | RF230 | 64             | 1               | 4            | 2.4 GHz  | -101              | 3                  | 1.8-3.6V | 32   | Now          |
| ATmega128RZA             | ATmega1281  | RF230 | 128            | 4               | 8            | 2.4 GHz  | -101              | 3                  | 1.8-3.6V | 54   | Now          |
| ATmega128RZB             | ATmega1280  | RF230 | 128            | 4               | 8            | 2.4 GHz  | -101              | 3                  | 1.8-3.6V | 86   | Now          |
| ATmega1284RZAP           | ATmega1284P | RF230 | 128            | 4               | 16           | 2.4 GHz  | -101              | 3                  | 1.8-3.6V | 32   | Now          |
| ATmega256RZA             | ATmega2561  | RF230 | 256            | 4               | 8            | 2.4 GHz  | -101              | 3                  | 1.8-3.6V | 54   | Now          |
| ATmega256RZB             | ATmega2560  | RF230 | 256            | 4               | 8            | 2.4 GHz  | -101              | 3                  | 1.8-3.6V | 86   | Now          |

#### AT86RF231 Bundles

|                 |             |       |     |   |    |         |      |   |          |    |     |
|-----------------|-------------|-------|-----|---|----|---------|------|---|----------|----|-----|
| ATmega644PR231  | ATmega644P  | RF231 | 64  | 1 | 4  | 2.4 GHz | -101 | 3 | 1.8-3.6V | 32 | Now |
| ATmega1281R231  | ATmega1281  | RF231 | 128 | 4 | 8  | 2.4 GHz | -101 | 3 | 1.8-3.6V | 54 | Now |
| ATmega1280R231  | ATmega1280  | RF231 | 128 | 4 | 8  | 2.4 GHz | -101 | 3 | 1.8-3.6V | 86 | Now |
| ATmega1284PR231 | ATmega1284P | RF231 | 128 | 4 | 16 | 2.4 GHz | -101 | 3 | 1.8-3.6V | 32 | Now |
| ATmega2561R231  | ATmega2561  | RF231 | 256 | 4 | 8  | 2.4 GHz | -101 | 3 | 1.8-3.6V | 54 | Now |
| ATmega2560R231  | ATmega2560  | RF231 | 256 | 4 | 8  | 2.4 GHz | -101 | 3 | 1.8-3.6V | 86 | Now |

#### AT86RF212 Bundles

|                 |             |       |     |   |    |             |      |    |          |    |     |
|-----------------|-------------|-------|-----|---|----|-------------|------|----|----------|----|-----|
| ATmega644PR212  | ATmega644P  | RF212 | 64  | 1 | 4  | 800/900 MHz | -110 | 10 | 1.8-3.6V | 32 | Now |
| ATmega1281R212  | ATmega1281  | RF212 | 128 | 4 | 8  | 800/900 MHz | -110 | 10 | 1.8-3.6V | 54 | Now |
| ATmega1280R212  | ATmega1280  | RF212 | 128 | 4 | 8  | 800/900 MHz | -110 | 10 | 1.8-3.6V | 86 | Now |
| ATmega1284PR212 | ATmega1284P | RF212 | 128 | 4 | 16 | 800/900 MHz | -110 | 10 | 1.8-3.6V | 32 | Now |
| ATmega2561R212  | ATmega2561  | RF212 | 256 | 4 | 8  | 800/900 MHz | -110 | 10 | 1.8-3.6V | 54 | Now |
| ATmega2560R212  | ATmega2560  | RF212 | 256 | 4 | 8  | 800/900 MHz | -110 | 10 | 1.8-3.6V | 86 | Now |

#### Evaluation/Development Kits

|                 |  |  |  |  |  |  |  |  |  |  |     |
|-----------------|--|--|--|--|--|--|--|--|--|--|-----|
| ATAVRRZRAVEN    | 2.4 GHz 802.15.4 Evaluation and Starter Kit  |  |  |  |  |  |  |  |  |  | Now |
| ATAVRRAVEN      | 2.4 GHz 802.15.4 Raven Board   |  |  |  |  |  |  |  |  |  | Now |
| ATAVRRZUSBSTICK | 2.4 GHz 802.15.4 USB Stick   |  |  |  |  |  |  |  |  |  | Now |
| ATAVRRZ600      | RF Accessory Kit AT86RF230, AT86RF231, AT86RF212                                     |  |  |  |  |  |  |  |  |  | Now |
| ATJTAGIC2       | AVR Low-cost In-Circuit Emulator Supporting All AVR with debugWIRE or JTAG Interface |  |  |  |  |  |  |  |  |  | Now |
| ATAVRISP2       | AVRISP Programmer for All AVR ISP Devices  |  |  |  |  |  |  |  |  |  | Now |
| ATSTK500        | STK500 AVR Starter Kit with AVR Studio Interface                                     |  |  |  |  |  |  |  |  |  | Now |
| ATSTK600        | Starter Kit and Development System for AVR and AVR32                                 |  |  |  |  |  |  |  |  |  | Now |

Note: 1. All MCU Wireless parts are RoHS compliant.

## MICROCONTROLLERS (CONTINUED)

### AVR32 32-bit Microcontrollers/Application Processors

#### AP7 Family (Application Processors)

| Part Number | SRAM (Kbytes) | Vector Multiplier Co-proc. | Ether. MAC 10/100 | USB  | LCD Controller | USART | PWM (Channel) | Max I/O Pins | Audio DAC (16-bit) | Ext. Bus Interface | SDRAM Interface | 16-bit Timer | RTC | SPI | Audio       | Camera Interf. | PS/2 | SSC | TWI | MCI | Watch. Timer | POR | ECCC | Power Supply (V)             | Package  | Speed (MHz) | Availability |
|-------------|---------------|----------------------------|-------------------|------|----------------|-------|---------------|--------------|--------------------|--------------------|-----------------|--------------|-----|-----|-------------|----------------|------|-----|-----|-----|--------------|-----|------|------------------------------|----------|-------------|--------------|
| AT32AP7000  | 32            | Y                          | 2                 | 1xHS | 2048x2048      | 4     | 4             | 160          | Stereo             | Y                  | Y               | 6            | 1   | 2   | AC97, 3xI2S | CMOS           | Y    | 3   | 1   | 1   | Y            | Y   | Y    | 1.65-1.95 Core<br>3.0-3.6 IO | BGA256   | 150         | Now          |
| AT32AP7001  | 32            | Y                          | 0                 | 1xHS | -              | 4     | 4             | 90           | Stereo             | Y                  | Y               | 6            | 1   | 2   | AC97, 3xI2S | CMOS           | Y    | 3   | 1   | 1   | Y            | Y   | Y    | 1.65-1.95 Core<br>3.0-3.6 IO | QFP208   | 150         | Now          |
| AT32AP7002  | 32            | Y                          | 0                 | 1xHS | 2048x2048      | 4     | 4             | 85           | Stereo             | Y                  | Y               | 6            | 1   | 2   | AC97, 3xI2S | CMOS           | Y    | 3   | 1   | 1   | Y            | Y   | Y    | 1.65-1.95 Core<br>3.0-3.6 IO | BGA196   | 150         | Now          |
| AT32AP7200  | 64            | Y                          | 2                 | -    | 2048x2048      | 6     | 4             | 146          | Stereo             | Y                  | Y               | 3            | 1   | 4   | AC97, 3xI2S | -              | -    | 3   | 1   | 1   | Y            | Y   | Y    | 1.08-1.32 Core<br>3.0-3.6 IO | CTBGA324 | 200         | 4Q2008       |

#### Evaluation/Development Kits

|             |  |     |
|-------------|--|-----|
| ATAVRONEKIT | AVR ONE! Development Tool for On-chip Debugging and Programming of All AVR32 Devices | Now |
| ATJTAGICE2  | AVR Low-cost In-Circuit Emulator Supporting All AVR with debugWIRE or JTAG Interface | Now |
| ATNGW100    | AVR32 Network Gateway Kit – A Linux® Plug-and-Play Evaluation Platform               | Now |
| ATSTK1000   | Starter Kit for AT32AP7xxx Devices   | Now |

Note: 1. All AP7 Family parts are RoHS compliant.



## MICROCONTROLLERS (CONTINUED)

### AVR32 32-bit Microcontrollers (Continued)

#### UC3 Family

| Part Number  | Flash (Kbytes) | RAM (Bytes) | Ether. MAC 10/100 | USB  | USB On-the-Go | USART | PWM (Channel) | Max I/O Pins | Ext. Bus Interface | System Bus | Peripheral DAM Ch. | 16-bit Timer | OS Timer | RTC | SPI | SSC | TWI | Watch. Timer | POR | Power Supply (V) | Package   | Speed (MHz) | Availability |
|--------------|----------------|-------------|-------------------|------|---------------|-------|---------------|--------------|--------------------|------------|--------------------|--------------|----------|-----|-----|-----|-----|--------------|-----|------------------|-----------|-------------|--------------|
| AT32UC3A0128 | 128            | 32          | 1                 | 1xFS | Y             | 4     | 13            | 109          | 1                  | 6          | 7                  | 3            | 1        | Y   | 2   | 1   | 1   | Y            | Y   | 3.0-3.6          | QFP144    | 66          | Now          |
| AT32UC3A0256 | 256            | 64          | 1                 | 1xFS | Y             | 4     | 13            | 109          | 1                  | 6          | 7                  | 3            | 1        | Y   | 2   | 1   | 1   | Y            | Y   | 3.0-3.6          | QFP144    | 66          | Now          |
| AT32UC3A0512 | 512            | 64          | 1                 | 1xFS | Y             | 4     | 13            | 109          | 1                  | 6          | 7                  | 3            | 1        | Y   | 2   | 1   | 1   | Y            | Y   | 3.0-3.6          | QFP144    | 66          | Now          |
| AT32UC3A1128 | 128            | 32          | 1                 | 1xFS | Y             | 4     | 13            | 69           | 0                  | 6          | 7                  | 3            | 1        | Y   | 2   | 1   | 1   | Y            | Y   | 3.0-3.6          | QFP100    | 66          | Now          |
| AT32UC3A1256 | 256            | 64          | 1                 | 1xFS | Y             | 4     | 13            | 69           | 0                  | 6          | 7                  | 3            | 1        | Y   | 2   | 1   | 1   | Y            | Y   | 3.0-3.6          | QFP100    | 66          | Now          |
| AT32UC3A1512 | 512            | 64          | 1                 | 1xFS | Y             | 4     | 13            | 69           | 0                  | 6          | 7                  | 3            | 1        | Y   | 2   | 1   | 1   | Y            | Y   | 3.0-3.6          | QFP100    | 66          | Now          |
| AT32UC3B064  | 64             | 16          | 0                 | 1xFS | Y             | 3     | 13            | 44           | 0                  | 5          | 7                  | 3            | 1        | Y   | 1   | 1   | 1   | Y            | Y   | 3.0-3.6          | QFP/MLF64 | 60          | Now          |
| AT32UC3B0128 | 128            | 32          | 0                 | 1xFS | Y             | 3     | 13            | 44           | 0                  | 5          | 7                  | 3            | 1        | Y   | 1   | 1   | 1   | Y            | Y   | 3.0-3.6          | QFP/MLF64 | 60          | Now          |
| AT32UC3B0256 | 256            | 32          | 0                 | 1xFS | Y             | 3     | 13            | 44           | 0                  | 5          | 7                  | 3            | 1        | Y   | 1   | 1   | 1   | Y            | Y   | 3.0-3.6          | QFP/MLF64 | 60          | Now          |
| AT32UC3B164  | 64             | 16          | 0                 | 1xFS | -             | 2     | 13            | 28           | 0                  | 5          | 7                  | 3            | 1        | Y   | 1   | 0   | 1   | Y            | Y   | 3.0-3.6          | QFP/MLF48 | 60          | Now          |
| AT32UC3B1128 | 128            | 32          | 0                 | 1xFS | -             | 2     | 13            | 28           | 0                  | 5          | 7                  | 3            | 1        | Y   | 1   | 0   | 1   | Y            | Y   | 3.0-3.6          | QFP/MLF48 | 60          | Now          |
| AT32UC3B1256 | 256            | 32          | 0                 | 1xFS | -             | 2     | 13            | 28           | 0                  | 5          | 7                  | 3            | 1        | Y   | 1   | 0   | 1   | Y            | Y   | 3.0-3.6          | QFP/MLF48 | 60          | Now          |

#### Evaluation/Development Kits

|                   |  |     |
|-------------------|--|-----|
| ATAVRONEKIT       | AVR ONE! Development Tool for On-chip Debugging and Programming of All AVR32 Devices   | Now |
| ATEVK1100         | Evaluation Kit for AVR32 UC3A Series   | Now |
| ATEVK1101         | Evaluation Kit for AVR32 UC3B Series   | Now |
| ATJTAGIC2         | AVR Low-cost In-Circuit Emulator Supporting All AVR with debugWIRE or JTAG Interface   | Now |
| ATSTK600          | Starter Kit and Development System for AVR and AVR32   | Now |
| ATSTK600-TQFP48   | The STK600-TQFP48 Contains a Socket Board and Adapter Boards for 48-pins, 0.5 mm Pitch TQFP Devices and Is an Expansion Module for STK600.   | Now |
| ATSTK600-TQFP64-2 | The STK600-TQFP64-2 Contains a Socket Board and Adapter Boards for 64-pins, 0.5 mm Pitch TQFP Devices and Is an Expansion Module for STK600. | Now |
| ATSTK600-TQFP100  | The STK600-TQFP100 Contains a Socket Board and Adapter Boards for 100-pins, 0.5 mm Pitch TQFP Devices and Is an Expansion Module for STK600. | Now |
| ATSTK600-TQFP144  | The STK600-TQFP144 Contains a Socket Board and Adapter Boards for 144-pins, 0.5 mm Pitch TQFP Devices and Is an Expansion Module for STK600. | Now |

Note: 1. All UC3 Family parts are RoHS compliant.



## MICROCONTROLLERS (CONTINUED)

### AT91SAM ARM-based Microcontrollers

### ARM7™-based Microcontrollers

| Part Number   | Flash (Kbytes) | SRAM (Kbytes) | External Bus Interface | Peripheral DMA (Channels) | UART | SPI | TWI | SSC/I2S | MC | CAN | USB Device | Ethernet MAC 10/100 | Triple-DES/AES Engine | Timers | PWM Controller | High Current Pads | RTC/RTT | 10-bit ADC Channel | 10-bit DAC Channel | Power-On Reset | Brown Out Detection | I/O Voltage Domain (V) | Clock Speed (MHz) | Packages       | Availability |
|---------------|----------------|---------------|------------------------|---------------------------|------|-----|-----|---------|----|-----|------------|---------------------|-----------------------|--------|----------------|-------------------|---------|--------------------|--------------------|----------------|---------------------|------------------------|-------------------|----------------|--------------|
| AT91SAM7L128  | 128            | 6             | -                      | 11                        | 1    | 1   | 1   | -       | -  | -   | -          | -                   | -                     | 4      | 4              | 4                 | 1       | 4                  | -                  | 1              | 1                   | 2.5/3.3                | 36                | QFP128, BGA144 | Now          |
| AT91SAM7L64   | 64             | 6             | -                      | 11                        | 1    | 1   | 1   | -       | -  | -   | -          | -                   | -                     | 4      | 4              | 4                 | 1       | 4                  | -                  | 1              | 1                   | 2.5/3.3                | 36                | QFP128, BGA144 | Now          |
| AT91SAM7X512  | 512            | 128           | -                      | 11                        | 3    | 2   | 1   | 1       | -  | 1   | FS         | 1                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP100, BGA100 | Now          |
| AT91SAM7X256  | 256            | 64            | -                      | 11                        | 3    | 2   | 1   | 1       | -  | 1   | FS         | 1                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP100, BGA100 | Now          |
| AT91SAM7X128  | 128            | 32            | -                      | 11                        | 3    | 2   | 1   | 1       | -  | 1   | FS         | 1                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP100, BGA100 | Now          |
| AT91SAM7XC512 | 512            | 128           | -                      | 11                        | 3    | 2   | 1   | 1       | -  | 1   | FS         | 1                   | 1                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP100, BGA100 | Now          |
| AT91SAM7XC256 | 256            | 64            | -                      | 11                        | 3    | 2   | 1   | 1       | -  | 1   | FS         | 1                   | 1                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP100, BGA100 | Now          |
| AT91SAM7XC128 | 128            | 32            | -                      | 11                        | 3    | 2   | 1   | 1       | -  | 1   | FS         | 1                   | 1                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP100, BGA100 | Now          |
| AT91SAM7S512  | 512            | 64            | -                      | 11                        | 3    | 1   | 1   | 1       | -  | -   | FS         | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP64, QFN64   | Now          |
| AT91SAM7S256  | 256            | 64            | -                      | 11                        | 3    | 1   | 1   | 1       | -  | -   | FS         | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP64, QFN64   | Now          |
| AT91SAM7S128  | 128            | 32            | -                      | 11                        | 3    | 1   | 1   | 1       | -  | -   | FS         | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP64, QFN64   | Now          |
| AT91SAM7S64   | 64             | 16            | -                      | 11                        | 3    | 1   | 1   | 1       | -  | -   | FS         | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP64, QFN64   | Now          |
| AT91SAM7S321  | 32             | 8             | -                      | 11                        | 3    | 1   | 1   | 1       | -  | -   | FS         | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP64, QFN64   | Now          |
| AT91SAM7S32   | 32             | 8             | -                      | 9                         | 3    | 1   | 1   | 1       | -  | -   | -          | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP48, QFN48   | Now          |
| AT91SAM7S161  | 16             | 4             | -                      | 11                        | 3    | 1   | 1   | 1       | -  | -   | FS         | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP64, QFN64   | Now          |
| AT91SAM7S16   | 16             | 4             | -                      | 9                         | 3    | 1   | 1   | 1       | -  | -   | -          | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 55                | QFP48, QFN48   | Now          |
| AT91SAM7SE512 | 512            | 32            | 1                      | 11                        | 3    | 1   | 1   | 1       | -  | -   | FS         | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 48                | QFP128, BGA144 | Now          |
| AT91SAM7SE256 | 256            | 32            | 1                      | 11                        | 3    | 1   | 1   | 1       | -  | -   | FS         | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 48                | QFP128, BGA144 | Now          |
| AT91SAM7SE32  | 32             | 8             | 1                      | 11                        | 3    | 1   | 1   | 1       | -  | -   | FS         | -                   | -                     | 5      | 4              | 4                 | 1       | 8                  | -                  | 1              | 1                   | 3.3                    | 48                | QFP128, BGA144 | Now          |
| AT91SAM7A3    | 256            | 32            | -                      | 19                        | 4    | 2   | 1   | 2       | 1  | 2   | FS         | -                   | -                     | 11     | 8              | -                 | 1       | 16                 | -                  | 3              | -                   | 3.3                    | 60                | QFP100         | Now          |
| AT91M55800A   | -              | 8             | 1                      | 10                        | 3    | 1   | -   | -       | -  | -   | -          | -                   | -                     | 7      | -              | -                 | 1       | 8                  | 2                  | -              | -                   | 3.3/5.0                | 33                | QFP176, BGA176 | Now          |
| AT91M42800A   | -              | 8             | 1                      | 8                         | 2    | 2   | -   | -       | -  | -   | -          | -                   | -                     | 8      | -              | -                 | 1       | -                  | -                  | -              | -                   | 3.3/5.0                | 33                | QFP144, BGA144 | Now          |
| AT91FR40162S  | 2M             | 256           | 1                      | 4                         | 2    | -   | -   | -       | -  | -   | -          | -                   | -                     | 4      | -              | -                 | -       | -                  | -                  | -              | -                   | 3.3                    | 75                | BGA121         | Now          |
| AT91R40008    | -              | 256           | 1                      | 4                         | 2    | -   | -   | -       | -  | -   | -          | -                   | -                     | 4      | -              | -                 | -       | -                  | -                  | -              | -                   | 3.3                    | 75                | QFP100         | Now          |
| AT91M40800    | -              | 8             | 1                      | 4                         | 2    | -   | -   | -       | -  | -   | -          | -                   | -                     | 4      | -              | -                 | -       | -                  | -                  | -              | -                   | 1.8/3.3                | 40                | QFP100         | Now          |

#### Evaluation/Development Kits

|               |   |            |
|---------------|---|------------|
| AT91SAM7L-EK  | Eval. Kit for AT91SAM7L Products (SAM7L128 and SAM7L64); Includes IAR™ Toolchain (32-Kbyte Limited Compiler)  | On Request |
| AT91SAM7L-EK2 | Eval. Kit for AT91SAM7L Products (SAM7L128 and SAM7L64); Includes IAR Toolchain (32-Kbyte Limited Compiler)   | March 2008 |
| AT91SAM7S-EK  | Eval. Kit for AT91SAM7S Products (SAM7S16 to SAM7S512); Includes IAR Toolchain (32-Kbyte Limited Compiler)    | Now        |
| AT91SAM7SE-EK | Eval. Kit for AT91SAM7SE Products (SAM7SE32 to SAM7SE512); Includes IAR Toolchain (32-Kbyte Limited Compiler) | Now        |
| AT91SAM7X-EK  | Eval. Kit for AT91SAM7X Products (SAM7X128 to SAM7X512); Includes IAR Toolchain (32-Kbyte Limited Compiler)   | Now        |
| AT91SAM7A3-EK | Eval. Kit for AT91SAM7A3  | Now        |
| AT91EB55      | Eval. Kit for AT91M55800A   | Now        |
| AT91EB42      | Eval. Kit for AT91M42800A   | Now        |
| AT91EB40A     | Eval. Kit for AT91FR40162S, AT91R40008 and AT91M40800   | Now        |

Note: 1. All ARM7-based Microcontrollers parts are RoHS compliant.