

Introduction

The Atmel® ATmega48/V/ 88/V /168/V is a low-power CMOS 8-bit microcontroller based on the AVR® enhanced RISC architecture. By executing powerful instructions in a single clock cycle, the ATmega48/V/ 88/V /168/V achieves throughputs close to 1MIPS per MHz. This empowers system designer to optimize the device for power consumption versus processing speed.

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Feature

High Performance, Low Power Atmel®AVR® 8-Bit Microcontroller Family

- Advanced RISC Architecture
 - 131 Powerful Instructions
 - Most Single Clock Cycle Execution
 - 32 x 8 General Purpose Working Registers
 - Fully Static Operation
 - Up to 20 MIPS Throughput at 20MHz
 - On-chip 2-cycle Multiplier
- High Endurance Non-volatile Memory Segments
 - 4K/8K/16KBytes of In-System Self-Programmable Flash program Memory
 - 256/512/512Bytes EEPROM
 - 512/1K/1KBytes Internal SRAM
 - Write/Erase Cycles: 10,000 Flash/100,000 EEPROM
 - Data Retention: 20 years at 85°C/100 years at 25°C⁽¹⁾
 - Optional Boot Code Section with Independent Lock Bits
 - In-System Programming by On-chip Boot Program
 - True Read-While-Write Operation
 - Programming Lock for Software Security
- Atmel® QTouch® Library Support
 - Capacitive Touch Buttons, Sliders and Wheels
 - QTouch and QMatrix® Acquisition
 - Up to 64 sense channels

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3. Ordering Information

3.1. ATmega48/V

Speed [MHz] ⁽³⁾	Power Supply [V]	Ordering Code ⁽²⁾	Package ⁽¹⁾	Operational Range
10	1.8V - 5.5V	ATmega48V-10AUR ⁽⁵⁾	32A	Industrial (-40°C to 85°C)
		ATmega48V-10MUR ⁽⁵⁾	32M1-A	
		ATmega48V-10AU	32A	
		ATmega48V-10MMU	28M1	
		ATmega48V-10MMUR ⁽⁵⁾	28M1	
		ATmega48V-10MMH ⁽⁴⁾	28M1	
		ATmega48V-10MMHR ⁽⁴⁾⁽⁵⁾	28M1	
		ATmega48V-10MU	32M1-A	
		ATmega48V-10PU	28P3	
20	2.7 - 5.5	ATmega48-20AUR ⁽⁵⁾	32A	Industrial (-40°C to 85°C)
		ATmega48-20MUR ⁽⁵⁾	32M1-A	
		ATmega48-20AU	32A	
		ATmega48-20MMU	28M1	
		ATmega48-20MMUR ⁽⁵⁾	28M1	
		ATmega48-20MMH ⁽⁴⁾	28M1	
		ATmega48-20MMHR ⁽⁴⁾⁽⁵⁾	28M1	
		ATmega48-20MU	32M1-A	
		ATmega48-20PU	28P3	

Note:

1. This device can also be supplied in wafer form. Please contact your local Atmel sales office for detailed ordering information and minimum quantities.
2. Pb-free packaging, complies to the European Directive for Restriction of Hazardous Substances (RoHS directive). Also Halide free and fully Green.
3. Please refer to *Speed Grades* for Speed vs. V_{CC}
4. Tape & Reel.
5. NiPdAu Lead Finish.

Package Type	
28M1	28-pad, 4 x 4 x 1.0 body, Lead Pitch 0.45mm Quad Flat No-Lead/Micro Lead Frame Package (QFN/MLF)
28P3	28-lead, 0.300" Wide, Plastic Dual Inline Package (PDIP)
32M1-A	32-pad, 5 x 5 x 1.0 body, Lead Pitch 0.50mm Quad Flat No-Lead/Micro Lead Frame Package (QFN/MLF)
32A	32-lead, Thin (1.0mm) Plastic Quad Flat Package (TQFP)