IC MCU 8BIT 32KB FLASH 44TQFP

Manufacturers	Microchip Technology, Inc
Package/Case	TQFP-44
Product Type	Embedded Processors & Controllers
RoHS	
Lifecycle	

Images are for reference only

Please submit RFQ for ATMEGA324PB-ANR or Email to us: sales@ovaga.com We will contact you in 12 hours.   RFQ

General Description

The high-performance Microchip picoPower 8-bit AVR RISC-basedmicrocontroller combines 32kB ISP flash memory with read-while-writecapabilities, 1kB EEPROM, 2kB SRAM, 39 general purpose I/O lines, 32general purpose working registers, five flexible timer/counters withcompare modes, internal and external interrupts, three USARTs withwake-up on start of transmission, two byte-oriented 2-wire serialinterface, two SPI serial ports, one 8-channel 10-bit ADC with optionaldifferential input stage with programmable gain, programmable watchdogtimer with internal oscillator, a JTAG (IEEE 1149.1 compliant) testinterface for on-chip debugging and programming, and six softwareselectable power saving modes. The device operates between 1.8-5.5volts.

The ATmega324PB features the successful QTouch PeripheralTouch Controller (PTC). The PTC acquires signals in order to detecttouch on capacitive sensors, and supports both self- andmutual-capacitance sensors. The ATmega324PB PTC is supported by theMicrochip QTouch Composer development tool (QTouch Library projectbuilder and QTouch Analyzer). It provides a faster and less complexcapacitive touch implementation in any application.

It supports 32buttons in self-capacitance mode, or up to 256 buttons inmutual-capacitance mode. Mix-and-match mutual-and self-capacitancesensors is possible, and only one pin is required per electrodenoexternal components are required, giving savings on the BOM costcompared to competing solutions.

By executing powerfulinstructions in a single clock cycle, the device achieves throughputsapproaching 1 MIPS per MHz, balancing power consumption and processingspeed.

Features

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

32KBytes of In-System Self-Programmable Flash program memory

1KBytes EEPROM

2KBytes Internal SRAM

Write/Erase Cycles: 10,000 Flash/100,000 EEPROM

Data retention: 20 years at 85°C

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

Peripheral Features

Peripheral Touch Controller (PTC)

Capacitive Touch Buttons, Sliders and Wheels

24 Self-Cap Channels and 144 Mutual Cap Channels

Two 8-bit Timer/Counters with Separate Prescaler and Compare Mode

Three 16-bit Timer/Counters with Separate Prescaler, Compare Mode, and Capture Mode

Real Time Counter with Separate Oscillator

Ten PWM Channels

8-channel 10-bit ADC in TQFP and QFN/MLF package

ThreeProgrammable Serial USARTs

Two Master/Slave SPI Serial Interfaces

Two Byte-Oriented 2-Wire Serial Interfaces (Philips I2C Compatible)

Programmable Watchdog Timer with Separate On-chip Oscillator

On-Chip Analog Comparator

Interrupt and Wake-Up on Pin Change

Special Microcontroller Features

Power-On Reset and Programmable Brown-Out Detection

Internal 8 MHz Calibrated Oscillator

External and Internal Interrupt Sources

Six Sleep Modes: Idle, ADC Noise Reduction, Power-save, Power-down, Standby, and Extended Standby

Clock Failure Detection Mechanism and Switch to Internal 8 MHz RC Oscillator in case of Failure

Individual Serial Number to Represent a Unique ID

I/O and Packages

27 Programmable I/O Lines

32-pin TQFP and 32-pin QFN/MLF

Operating Voltage:

1.8 - 5.5V

Temperature Range:

Speed Grade:

0 - 4MHz @ 1.8 - 5.5V

0 - 10MHz @ 2.7 - 5.5.V
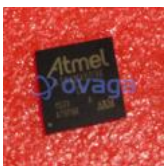
0 - 20MHz @ 4.5 - 5.5V

Power Consumption at 1MHz, 1.8V, 25°C

Active Mode: 0.24mA

Power-Down Mode: 0.2μA

Power-Save Mode: 1.3μA (Including 32kHz RTC)

Related Products

ATSAMA5D36A-CU

Microchip Technology, Inc

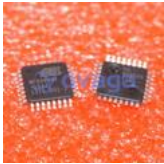LFBGA-324

ATMEGA32M1-AU

Microchip Technology, Inc

TQFP-32

ATXMEGA128D3-AU

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TQFP-64

ATTINY2313V-10SU

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SOIC-20

ATMEGA64M1-15AZ

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TQFP-32

ATMEGA16L-8PU

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PDIP-40

ATTINY48-MU

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VQFN-32

ATTINY4-TSHR

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