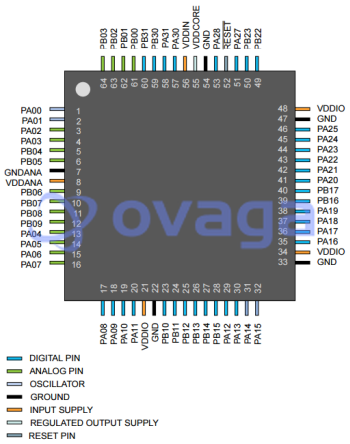
ATSAMD20E15A-MU

Data Sheet

MCU 32-bit ARM Cortex M0+ RISC 32KB Flash 1.8V/2.5V/3.3V 32-Pin QFN EP Tray

Manufacturers	Microchip Technology, Inc
Package/Case	VQFN-32
Product Type	Embedded Processors & Controllers
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for ATSAMD20E15A-MU or Email to us: sales@ovaga.com We will contact you in 12 hours. RFQ

General Description

A low-power, high-performance Microchip'sARM® Cortex®-M0+ based flash microcontroller, the ATSAMD20E15 is ideal for a wide range of home automation, consumer, metering, and industrial applications. It features:

32KB of Flash and 4KB of SRAM

48MHz operating frequency

Four serial communication modules (SERCOM) configurable as UART/USART, SPI or I2C, six 16-bit timer/counters, 32-bit Real Time clock and calendar, 10 PWM channels, one 10-channel 12-bit ADC, one 10-bit DAC

Support for up to 60 touch channels

1.62V to 3.63V power supply

Easy pin migration to SAMD20G and SAMD20J devices

Supported by Atmel Studio, ASF and the SAM D20 Xplained Pro kit

Supported by MPLAB X IDE and MPLAB Harmony.

Features

Processor

ARM Cortex-M0+ CPU running at up to 48MHz

Single-cycle hardware multiplier

Memories

32KB in-system self-programmable Flash

4KB SRAM memory

System

Power-on reset (POR) and brown-out detection (BOD)

Internal and external clock options with 48MHdigital frequency locked loop (DFLL48M) and 48MHto 96MHz

fractional digital phase locked loop (FDPLL96M)

External interrupt controller (EIC)

16 external interrupts

One non-maskable interrupt

Two-pin serial wire debug (SWD) programming, test and debugging interface

Low power

Idle and standby sleep modes

SleepWalking peripherals

Peripherals

8-channel event system

Five 16-bit timer/counters (TC), configurable as either:

One 16-bit TC with compare/capture channels

One 8-bit TC with compare/capture channels

One 32-bit TC with compare/capture channels, by using two TCs

32-bit real time counter (RTC) with clock/calendar function

Watchdog timer (WDT)

CRC-32 generator

Up to six serial communication interfaces (SERCOM), each configurable to operate as either:

USART with full-duplex and single-wire half-duplex configuration

I2C up to 40kHz

SPI

One 12-bit, 350ksps analog-to-digital converter (ADC) with 10 channels

Differential and single-ended input

1/2x to 16x programmable gain stage

Automatic offset and gain error compensation

Oversampling and decimation in hardware to support 13-, 14-, 15- or 16-bit resolution

10-bit, 350ksps digital-to-analog converter (DAC)

Two analog comparators (AC) with window compare function

Peripheral Touch Controller (PTC)

256-channel capacitive touch and proximity sensing

I/O

26 GPIO pins

Packages

32-pin TQFP, QFN

Operating voltage

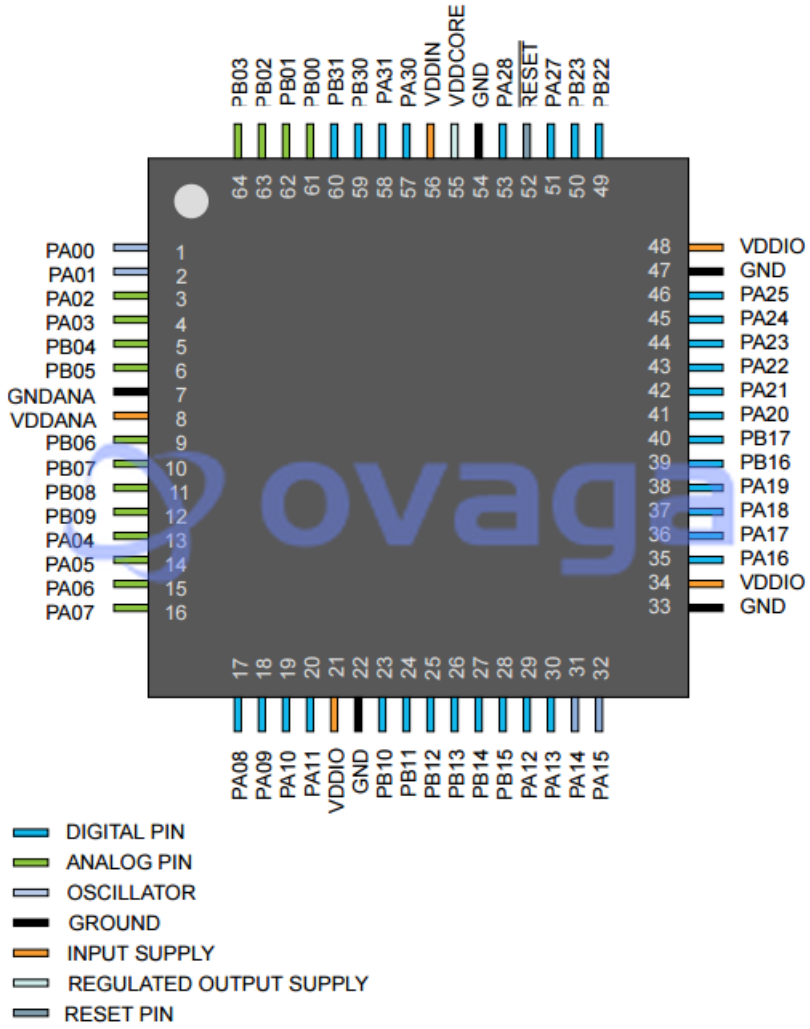
1.62V to 3.63V

Power Consumption

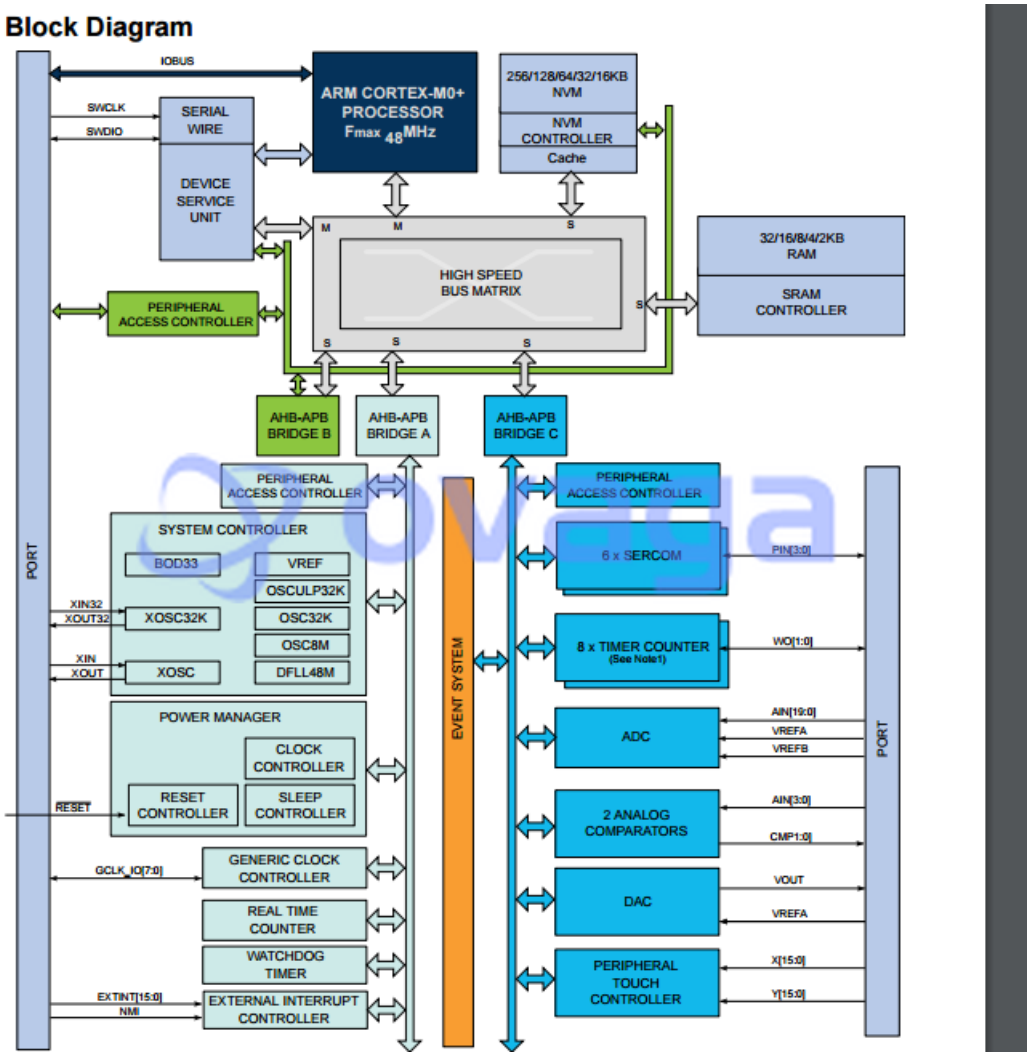
Down to 70µA/MHz in active mode

Down to 8µA running the peripheral Touch Controller

Temperature range


PB03 PB02 PB01 PB00 PB31 PB30 PA31 PA30 VDDIN VDDCORE GND PA28 RESET PA27 PB23 PB22
64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49
PA00 1
PA01 2
PA02 3
PA03 4
PB04 5
PB05 6
GNDANA 7
VDDANA 8
PB06 9
PB07 10
PB08 11
PB09 12
PA04 13
PA05 14
PA06 15
PA07 16
48 VDDIO
47 GND
46 PA25
45 PA24
44 PA23
43 PA22
42 PA21
41 PA20
40 PB17
39 PB16
38 PA19
37 PA18
36 PA17
35 PA16
34 VDDIO
33 GND
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
PA08 PA09 PA10 PA11 VDDIO GND PB10 PB11 PB12 PB13 PB14 PB15 PA12 PA13 PA14 PA15
DIGITAL PIN
ANALOG PIN
OSCILLATOR
GROUND
INPUT SUPPLY
REGULATED OUTPUT SUPPLY
RESET PIN

Block Diagram



Related Products

[ATSAMA5D36A-CU](#)

Microchip Technology, Inc

LFBGA-324

[ATMEGA32M1-AU](#)

Microchip Technology, Inc

TQFP-32

[ATXMEGA128D3-AU](#)

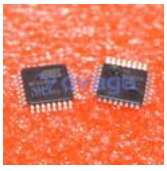
Microchip Technology, Inc

TQFP-64

[ATTINY2313V-10SU](#)

Microchip Technology, Inc

SOIC-20



[ATMEGA64M1-15AZ](#)

Microchip Technology, Inc

TQFP-32

[ATMEGA16L-8PU](#)

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PDIP-40

[ATTINY48-MU](#)

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VQFN-32

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SOT-23-6