

ARM MCU, SAM 32 Family SAM D Series Microcontrollers, ARM Cortex-M0+, 32bit, 48 MHz, 256 KB, 32 KB

Manufacturers	Microchip Technology, Inc
Package/Case	VQFN-48
Product Type	Embedded Processors & Controllers
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for ATSAMD21G18A-MUT or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

General Description

A low-power, high-performance Microchip's ARM® Cortex®-M0+ based flash microcontroller, the ATSAMD21G18 is ideal for a wide range of home automation, consumer, metering, and industrial applications. It features:

256KB of flash and 32KB of SRAM

Up to 48MHz operating frequency

Six serial communication modules (SERCOM) configurable as UART/USART, SPI or I2C, three 16-bit timer/counters, 32-bit Real-Time Clock and calendar, 20 PWM channels, one 14-channel 12-bit ADC, one 10-bit DAC

Full Speed USB Device and embedded Host

Support for up to 120 touch channels

1.62V to 3.63V power supply

Easy pin migration to SAMD21G and SAMD21J devices

Supported by Atmel Studio, ASF and the SAM D21 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

Micro Trace Buffer

Memories

256KB in-system self-programmable Flash

32KB SRAM Memory

System

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

Internal and external clock options with 48MHz Digital Frequency Locked Loop (DFLL48M) and 48MHz to 96MHz fractional

External Interrupt Controller (EIC)

16 external interrupts

One non-maskable interrupt

Two-pin Serial Wire Debug (SWD) programming, test and debugging interface

Drop in compatible with SAM D20

Low Power

Idle and standby sleep modes

Sleep Walking peripherals

Peripherals

12-channel Direct Memory Access Controller (DMAC)

12-channel Event System

Up to 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

Three 24-bit Timer/Counters for Control (TCC), with extended functions:

Up to four compare channels with optional complementary output

Generation of synchronized pulse width modulation (PWM) pattern across port pins

Deterministic fault protection, fast decay and configurable dead-time between complementary output

Dithering that increase resolution with up to 5 bit and reduce quantization error

32-bit Real Time Counter (RTC) with clock/calendar function

Watchdog Timer (WDT)

CRC-32 generator

One full-speed (12Mbps) Universal Serial Bus (USB) 2.0 interface

Embedded device function

Eight endpoints

Six Serial Communication Interfaces (SERCOM), each configurable to operate as either:

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

I2C Bus up to 3.4MHz

SMBUS/PMBUS

SPI

LIN slave

12-bit, 350ksps Analog-to-Digital Converter (ADC) with up to 14 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

38 GPIO pins

Packages

48-pin TQFP, QFN, WLCSP

Operating Voltage

1.62V – 3.63V

(1P) CATALOG P/N : **ATSAMD21G18A-MUT**



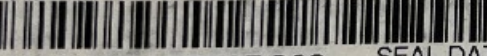
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LEAD: 48

(Q) QTY
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(P) CUST. P/N: **ATSAMD21G18A-MUT**



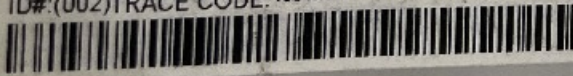
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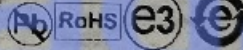
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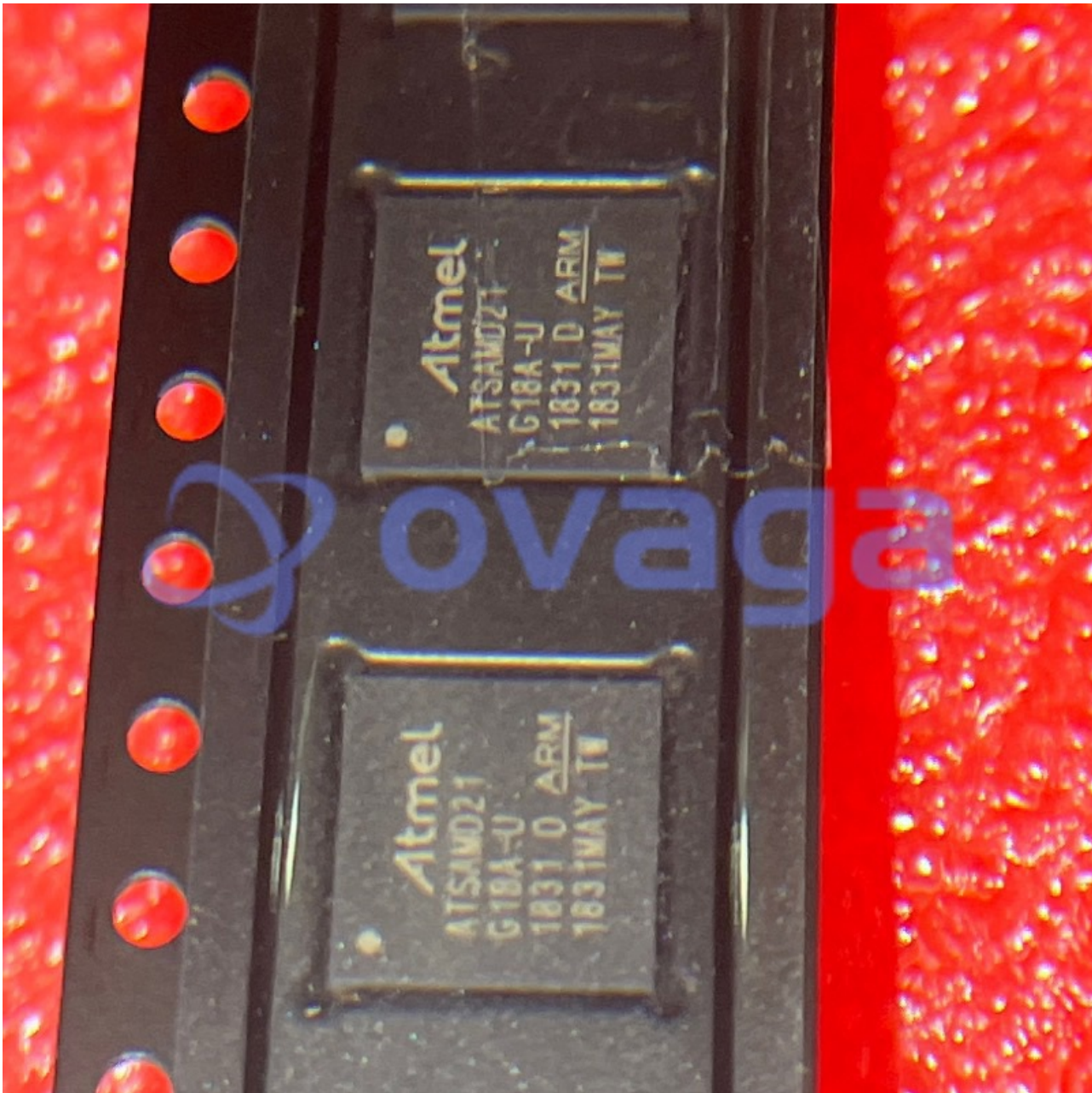
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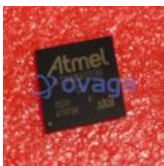
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