

INDUSTRIAL PRODUCT DATASHEET

Seeed Studio XIAO ESP32-S3(Tape & Reel)

Production-ready Seeed Studio XIAO ESP32-S3 (Tape & Reel) board with ESP32-S3, Wi-Fi/BLE 5.0, and low-power design for IoT, wearable, and smart home applications.

SKU

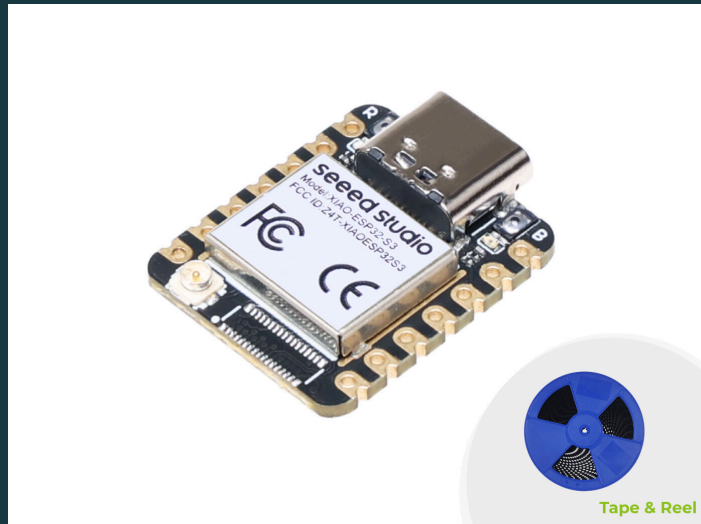
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UPDATED

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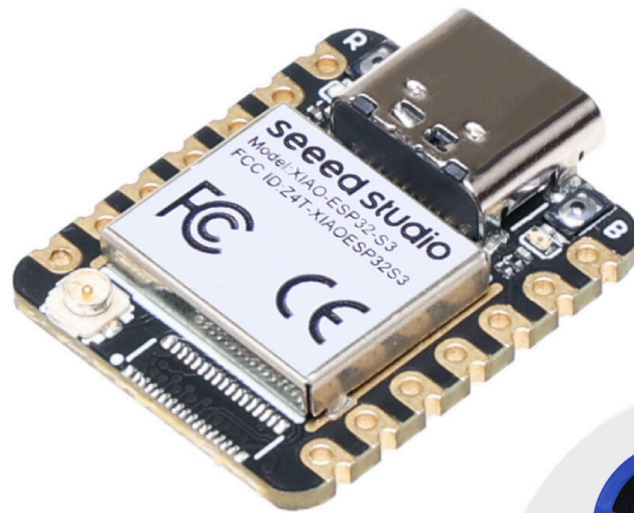
PRICE

\$6.90(Excl. VAT)



Tape & Reel

Overview



Tape & Reel

The Seeed Studio XIAO ESP32-S3 (Tape & Reel) is a thumb-sized, production-ready microcontroller board designed for Surface Mount Technology (SMT) assembly and supplied in Tape & Reel packaging without pin headers or an external antenna. It integrates the ESP32-S3 dual-core Xtensa processor running up to 240 MHz, 2.4 GHz Wi-Fi and BLE 5.0 connectivity, lithium battery charge management, and low-power modes down to 14 μA for space-limited projects such as wearables and rapid prototyping.

Key Features

Note:

This 100092361, Seeed Studio XIAO ESP32-S3(Tape & Reel) is specifically designed for Surface Mount Technology (SMT) production. This variant comes in a Tape & Reel package for seamless integration into automated assembly lines.

No pin headers included.

This product does not include the external antenna. If you require an external antenna, please refer to the 2.4GHz FPC Antenna for XIAO ESP32-S3

- **Powerful MCU Board:** Incorporate the ESP32-S3 32-bit, dual-core, Xtensa processor running at up to 240MHz, mounted multiple development ports, Arduino / MicroPython supported
- **Outstanding RF performance:** Supports 2.4GHz WiFi and BLE 5.0 dual wireless communication, support 100m+ remote communication when connected with U.FL antenna
- **Elaborate Power Design:** Lithium battery charge management capability, offer 4 power consumption model which allows for deep sleep mode with power consumption as low as 14μA
- **Thumb-sized Compact Design:** 21 x 17.8mm, adopting the classic form factor of XIAO, suitable for space limited projects like wearable devices
- **Perfect for Production:** Breadboard-friendly & SMD design, no components on the back

Production-Ready Design with Fusion PCBA Support

Being the 8th member of the [Seeed Studio XIAO, the smallest Arduino boards for tinyML](#), XIAO ESP32C6 remains the classic XIAO design. All these features make it a perfect fit for either space-limited projects such as wearables, or a production-ready unit for your PCBA designs. Through our [Turn Your XIAO Projects into Reality with Fusion: 30% Off PCBA - Latest News from Seeed Studio %](#), you can not only enjoy the lowest unit prices for all XIAO modules from our Fusion Open Parts Library, but also fabricate and scale your XIAO-based PCBA designs at low cost (30% off) with FREE Design for Manufacturing consulting services, streamlining your journey from prototype to production.

Note:

XIAO SoM User Manual open-sources all hardware and software materials of XIAO, providing professional product design guidelines to help you accelerate ideas off the ground, streamline product design, providing a seamless experience from module selection to mass production. You can check [here](#) to see more info.

Starter Kit with free Course for all Electronics Neophytes and Enthusiasts

Seeed Studio has provided the [Grove Starter Kit](#) along with [free and detailed courses](#) for you quickly get started with microcontrollers and electronics, regarding all the Seeed Studio XIAO boards, promising you a great learning experience. Not only programming but also electronics knowledge is not required, you will be taken step by step, from **understanding the basic concepts to exercising the simple projects individually**, finally being able to **build complex, interesting, wearable projects** on your own, owing a **practical electronic product prototype** from the course.

Seeed Studio XIAO Kit Courses | Seeed Studio Wiki

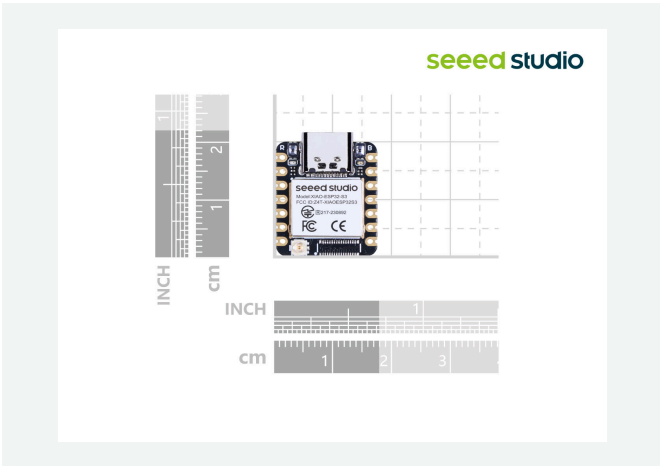
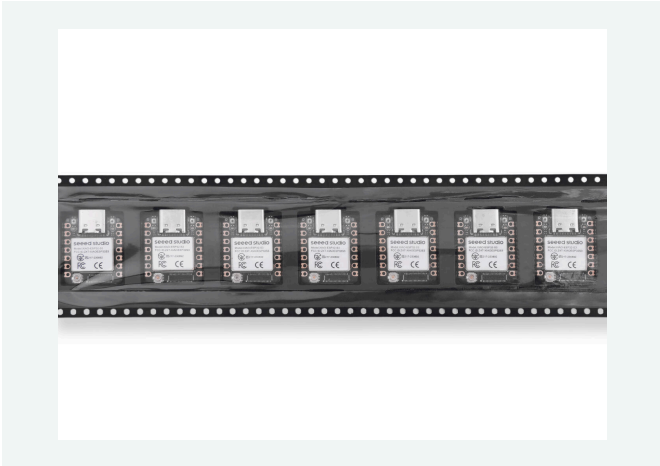
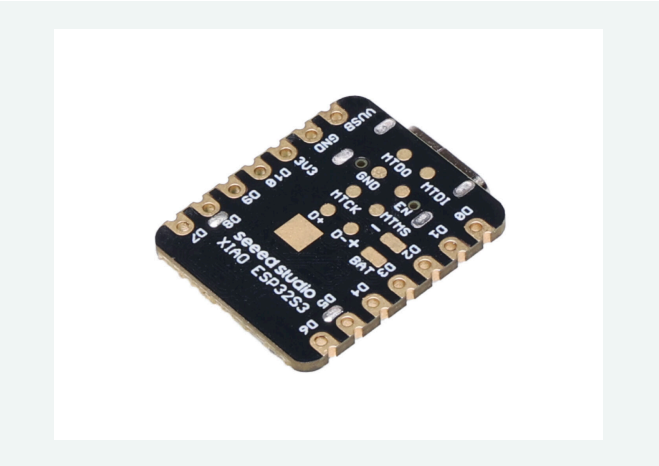
You can have access to the [Seeed Studio Grove ecosystem](#) by connecting it to the compatible [Seeed Studio XIAO expansion board](#). We have developed more than [400 Grove modules](#), covering a wide range of applications that can fulfill various needs. For example, you can utilize the accelerometer on XIAO nRF52840 Sense combined with Edge Impulse to enable [motion recognition](#) by connecting with a [Grove - OLED Display 0.66" \(SSD1306\)- IIC - 3.3V/5V](#). Get started and explore the infinite possibilities of the Seeed Studio XIAO series!

Grove

If you are interested in programming embedded machine learning, we have [Codecraft](#) visual programming that can help you quickly start your own TinyML project. And we have set up a [#tinymml](#) channel on our Discord server, please click to join for 24/7 making, sharing, discussing, and helping each other out.

We already have 15 XIAO products based on different solutions in the XIAO family, to help you better understand the differences and choose the most suitable part for your projects, please refer to the [Seeed Studio XIAO Series Page](#).

Product Gallery

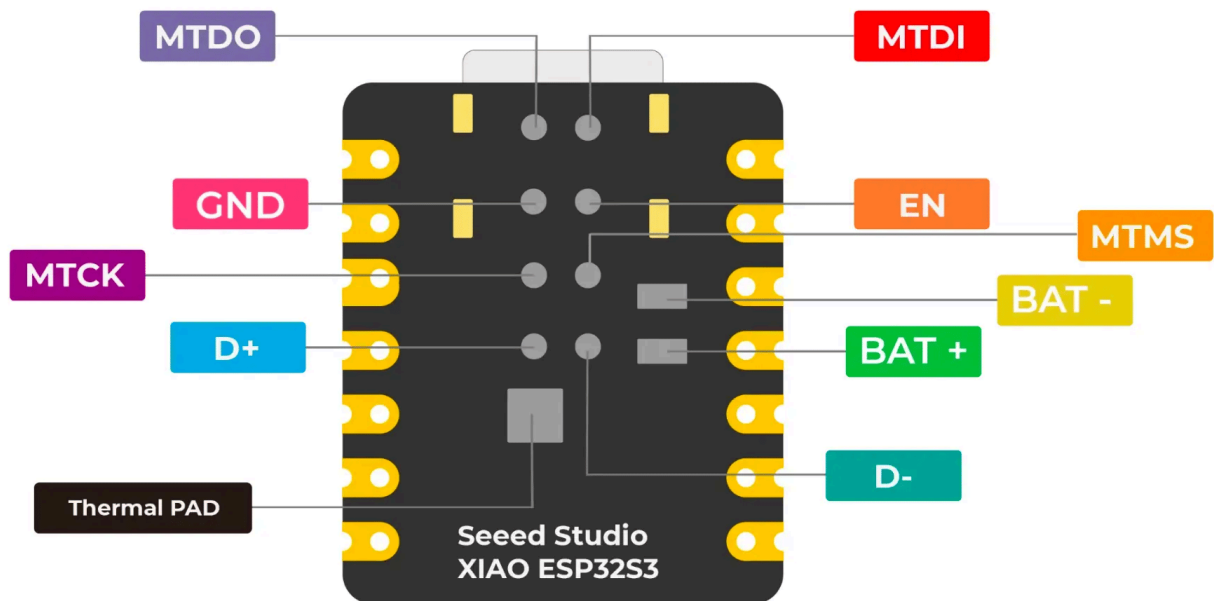
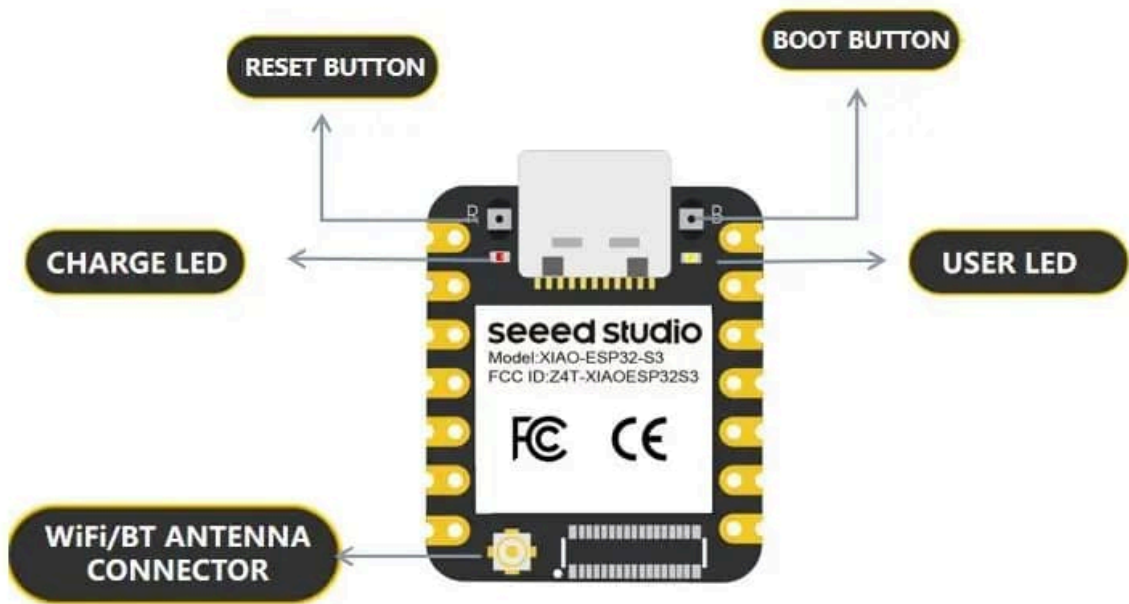


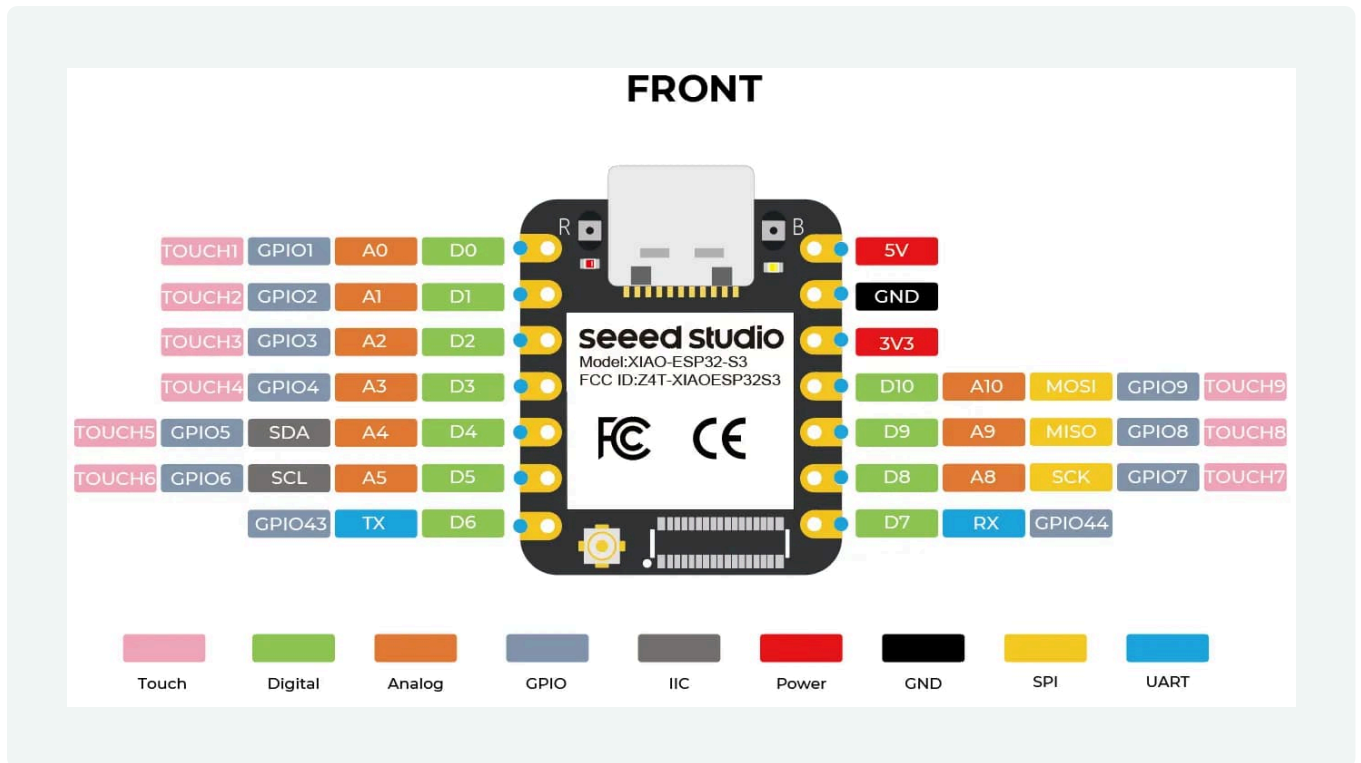
Specification

Parameter	Seeed Studio XIAO ESP32-S3(Tape & Reel)	Seeed Studio XIAO ESP32-S3(Tape & Reel)
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Processor	ESP32-S3R8 SoC	ESP32-C3 SoC
	Xtensa LX7 dual-core, 32-bit processor running up to 240 MHz	RISC-V single-core 32-bit chip processor with a four-stage pipeline that operates at up to 160 MHz
Wireless	Complete 2.4GHz WiFi subsystem	
	Bluetooth Low Energy 5.0 / Bluetooth Mesh	
On-chip Memory	8MB PSRAM & 8MB Flash	400KB SRAM & 4MB Flash
Interface	1x UART 1x IIC 1x SPI 11x GPIO(PWM) 9x ADC 1x User LED 1x Charge LED	1x UART 1x IIC 1x SPI 11x GPIO(PWM) 4x ADC 1x Charge LED
	1x Reset button 1x Boot button	
Dimensions	21 x 17.8mm	
Power (Typ.)	Input voltage (Type-C): 5V Input voltage (BAT): 3.7V	Input voltage (Type-C): 5V Input voltage (BAT): 3.7V
	Circuit operating Voltage: - Type-C: 5V@19mA - BAT: 3.8V@22mA	Circuit operating Voltage: - USB:5V@9mA - BAT:3.8V@9mA
	Charging current: 50mA(Fast) / 3.8mA(Trickle)	Charging current: 380mA(Fast) / 40mA(Trickle)
Low Power Consumption Mode (Typ.) (Supply Power: 3.8V)	Modem-sleep Mode: 27 mA Light-sleep Mode: 2mA Deep Sleep Mode: 14 μ A	Modem-sleep Mode: 24 mA Light-sleep Mode: 3 mA Deep Sleep Mode: 44 μ A
WiFi Enabled Power Consumption (Typ.)	Active Mode: 220 mA	Active Mode: 103 mA
BLE Enabled Power Consumption (Typ.)	Activex Mode: 217 mA	/
Working Temperature	-40°C ~ 65°C	-40°C ~ 85°C

Hardware Overview





Applications

- Internet of Things
- Wearable devices
- Smart Homes
- Robotics
- Health monitoring
- Education
- Low-Power(LP) networking
- Rapid prototyping

Part List

Seeed Studio XIAO ESP32-S3 (Tape&Reel)	x1
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Compliance & Logistics

HSCODE	8543709990
USHSCODE	8517180050
UPC	
EUHSCODE	8543709099
COO	CHINA

Resource Links

- <https://www.seeedstudio.com/Seeed-Studio-XIAO-ESP32-S3-Tape-Reel-p-6640.html>
- [Wiki-XIAO ESP32-S3 Series Resources](#)
- [Seeed Studio XIAO Use Case](#)
- [TinyML Case Studies](#)
- [3D Printing "Case" Studies](#)

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