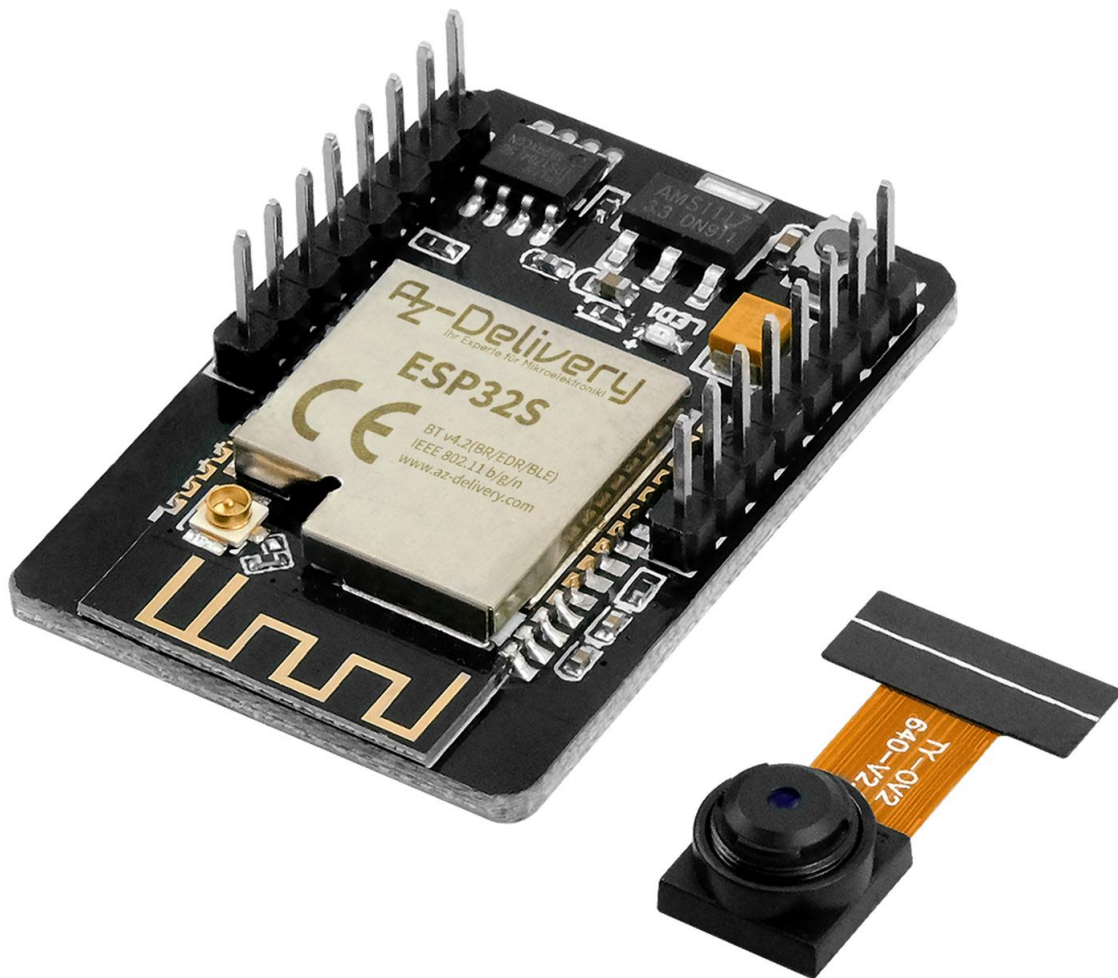


ESP32-Cam

Datasheet

# ESP32-Cam

AI-Thinker Model



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## Specifications

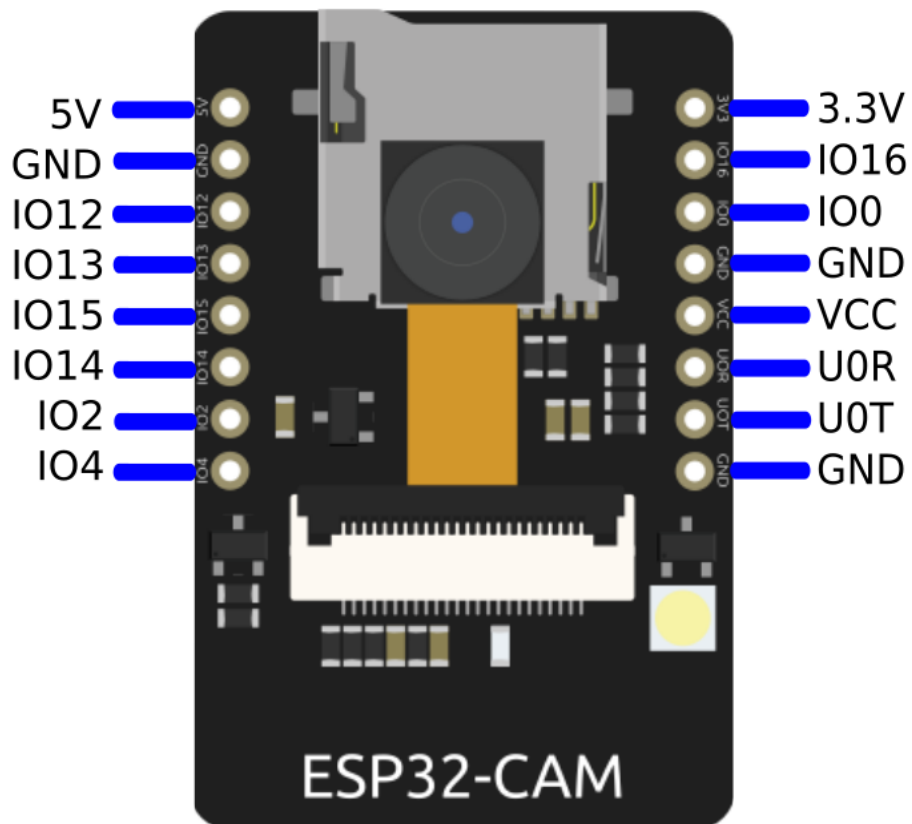
SPI Flash	4 MB
RAM	520KB SRAM + 4M PSRAM
Bluetooth	Bluetooth 4.2 BR/EDR and BLE standards
Wi-Fi	802.11 b/g/n
Support interface	UART, SPI, I2C, PWM
Support TF card	Max. 4GB
IO port	9
UART Baudrate	Default 115200 bps
Image Output Format	JPEG (OV2640 support only), BMP, GRAYSCALE
Spectrum Range	2412~2484 MHz
Antenna	Onboard PCB antenna, gain 2dBi
Transmit Power	802.11b: 17±2 dBm (@11Mbps) 802.11g: 14±2 dBm (@54Mbps) 802.11n: 13±2 dBm (@MCS7)
Receiving Sensitivity	CCK, 1 Mbps: -90 dBm CCK, 11 Mbps: -85 dBm 6 Mbps (½ BPSK): -88 dBm 54 Mbps(¾ 6-QAM): -70 dBm MCS7(65 Mbps, 72.2 Mbps): -67 dBm
Power Supply Range	5V
Operating Temperature	-20°C ~ 85°C
Dimensions	27 x 40.5 x 4.5 mm

## Internal Pin Connections

<b>CAM</b>	<b>ESP32</b>
D0	PIN 5
D1	PIN 18
D2	PIN 19
D3	PIN 21
D4	PIN 36
D5	PIN 39
D6	PIN 34
D7	PIN 35
XCLK	PIN 0
PCLK	PIN 22
VSYNC	PIN 25
HREF	PIN 23
SDA	PIN 26
SCL	PIN 27
POWER PIN	PIN 32

<b>SD</b>	<b>ESP32</b>
CLK	PIN 14
CMD	PIN 15
DATA0	PIN 2
DATA1/Flash lamp	PIN 4
DATA2	PIN 12
DATA3	PIN 13

## Pinout



## Pin description

Pin	Function description
5V	Power input 5V
3.3V	Power input 3.3V
VCC	Power output 3.3V
GND	Ground
IO12	GPIO12, ADC2_CH5, TOUCH5, RTC_GPIO15, MTDI, HSPIQ, HS2_DATA2, SD_DATA2, EMAC_TXD3
IO13	GPIO13, ADC2_CH4, TOUCH4, RTC_GPIO14, MTCK, HSPID, HS2_DATA3, SD_DATA3, EMAC_RX_ER
IO15	GPIO15, ADC2_CH3, TOUCH3, MTDO, HSPICS0, RTC_GPIO13, HS2_CMD, SD_CMD, EMAC_RXD3
IO14	GPIO14, ADC2_CH6, TOUCH6, RTC_GPIO16, MTMS, HSPICLK, HS2_CLK, SD_CLK, EMAC_TXD2
IO2	GPIO2, ADC2_CH2, TOUCH2, RTC_GPIO12, HSPIWP, HS2_DATA0, SD_DATA0
IO4	GPIO4, ADC2_CH0, TOUCH0, RTC_GPIO10, HSPIHD, HS2_DATA1, SD_DATA1, EMAC_TX_ER
IO16	GPIO16, HS1_DATA4, U2RXD, EMAC_CLK_OUT

**ESP32-Cam**

IO0	GPIO0, ADC2_CH1, TOUCH1, RTC_GPIO11, CLK_OUT1, EMAC_TX_CLK
U0R	GPIO3, U0RXD, CLK_OUT2
U0T	GPIO1, U0TXD, CLK_OUT3, EMAC_RXD2