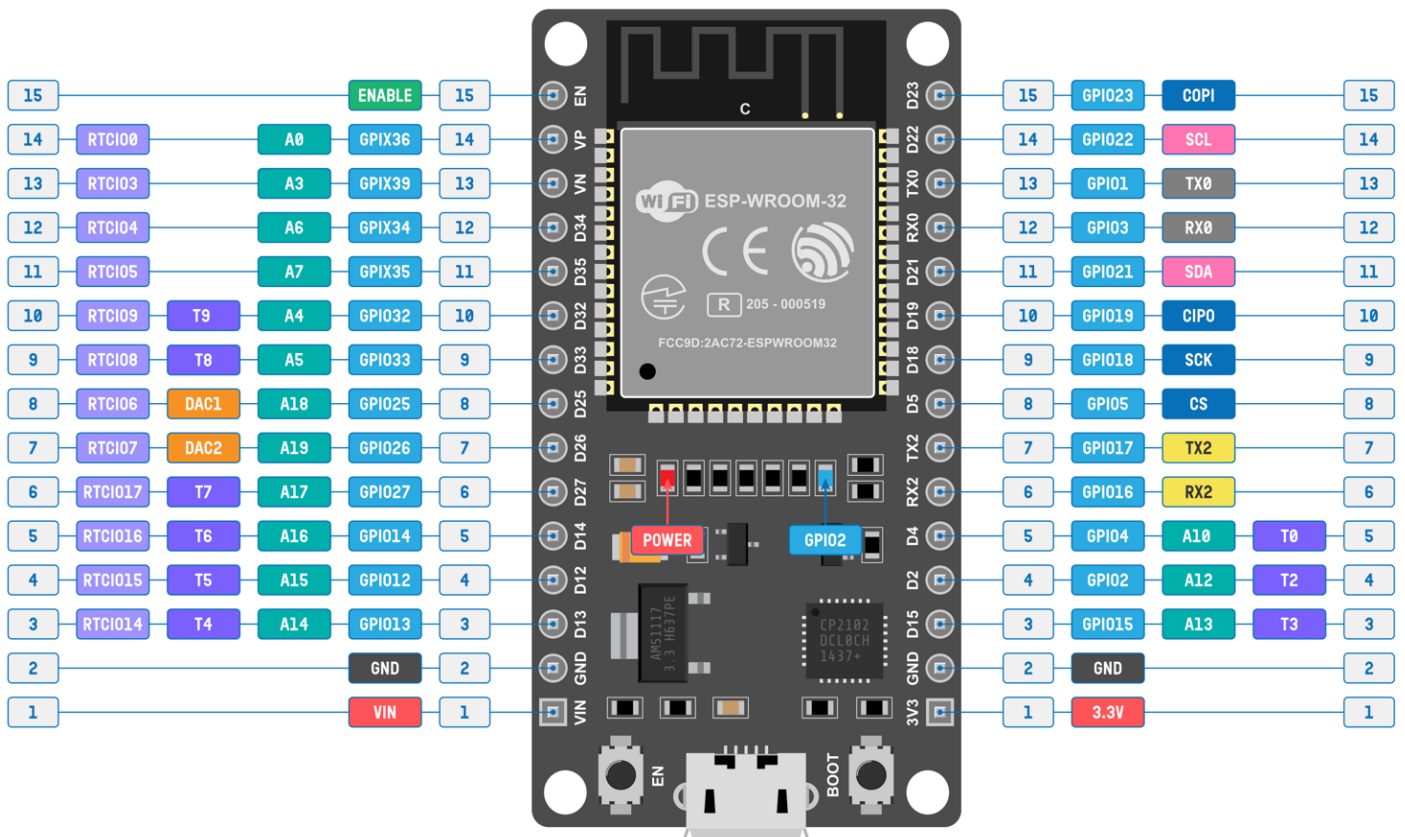


ESP32 - Pinout



- VP stands for **Voltage Positive**
- VN stands for **Voltage Negative**



Category	GPIO Pins	Typical Use Cases	Sensors/Modules	Syntax/Functions
Power Pins	3.3V, GND, VIN	Powering modules (VIN = 5V input)	All sensors/modules need GND and VCC	--
General I/O (Safe)	4, 13, 14, 15, 16, 17, 27	Simple digital read/write	LEDs, relays, buzzers, PBs, TTP223, REED, LM393 (digital), PIR (HC-SR501)	pinMode(13, OUTPUT); digitalWrite(13, HIGH);
ADC(1) Input	32, 33 Input only: 34, 35, 36, 39	Analog sensor input (0–3.3V)	YL-69 (analog), LM393 (analog), KY-038 mic (analog)	analogRead(32);
DAC Output	25, 26	Analog output (PWM-like for LED dimming, audio)	Rare for sensors (used for output control)	dacWrite(25, value); // value = 0–255
SPI (Default)	23(MOSI), 19(MISO), 18(SCK), 5(SS/CS)	High-speed modules	RFID, SD card, TFT, flash	SPI.begin(); digitalWrite(5, LOW);
I2C (Default)	21 (SDA), 22 (SCL)	Smart I2C sensors	OLED, RTC, MPU6050, EEPROM	Wire.begin(21, 22);
UART (Serial)	1 (TX0), 3 (RX0), 16 (TX2), 17 (RX2)	GPS, GSM, Serial monitor	Serial monitor, GSM, GPS	Serial.begin(115200); Serial2.begin(9600, SERIAL_8N1, 17, 16);
LED	2	On Board LED	Built-in LED	--