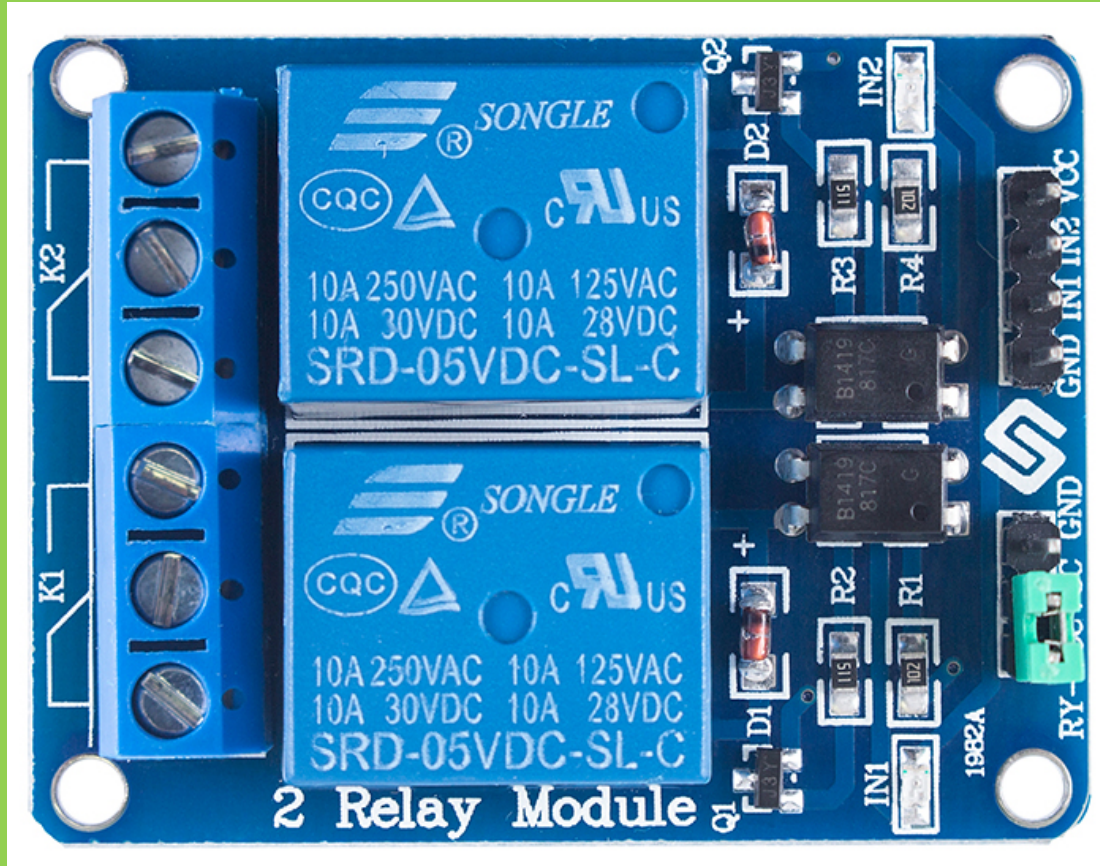


Pi Club Sharing Session

2-Channel 5V Active Low Relay Module

Sunday, 7 May 2023 @ TRL

2-Channel 5V Active Low Relay Module

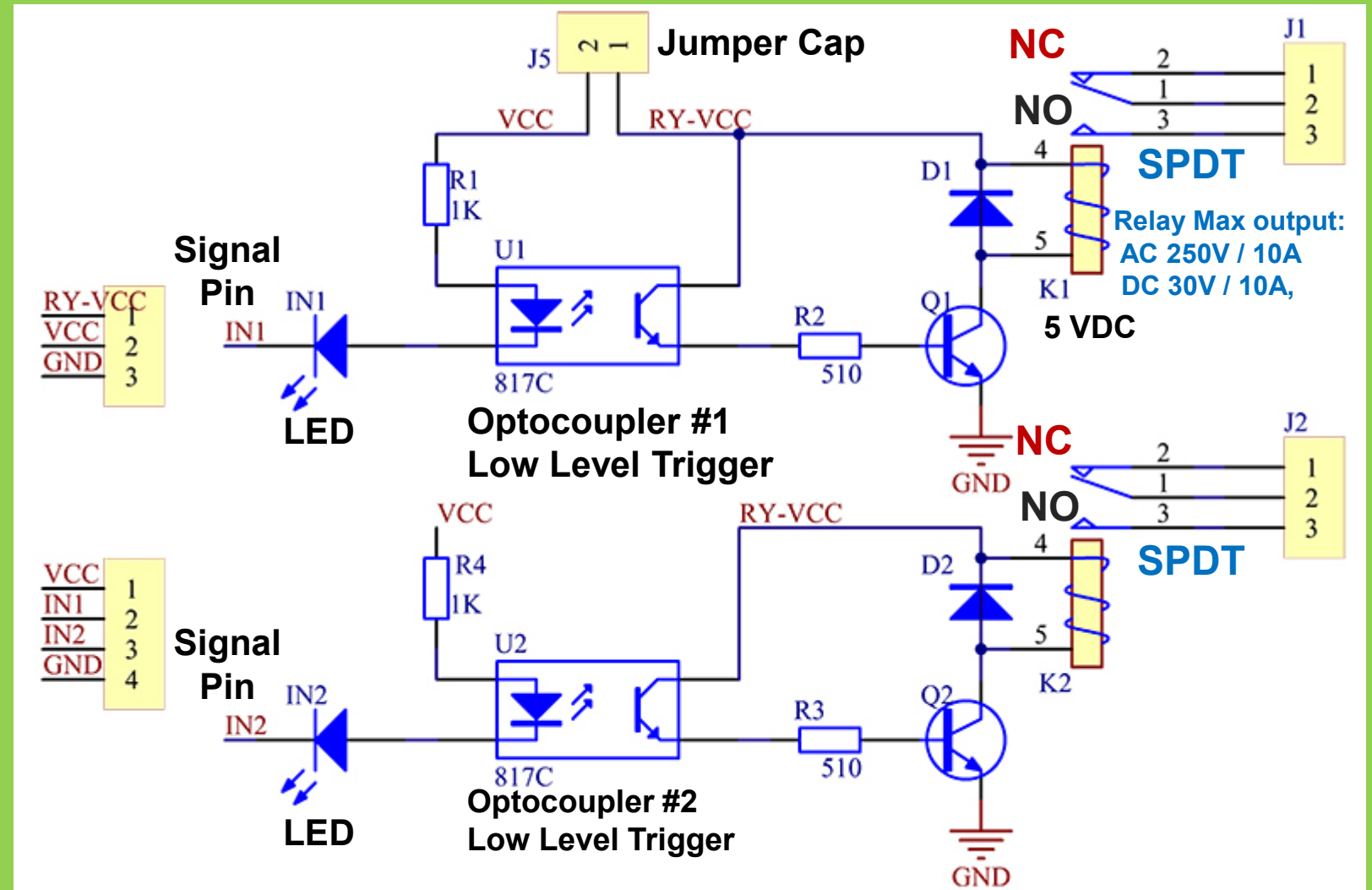


Above are two Relay Breakout Board with two 5V activated relays (3.3V compatible)

2-Channel 5V Active Low Relay Module

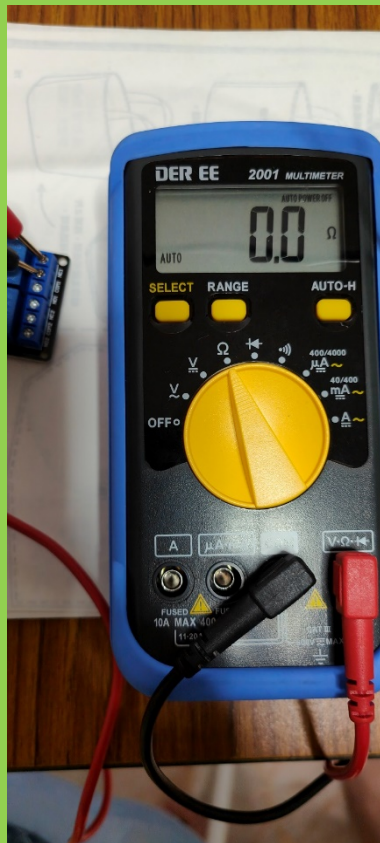
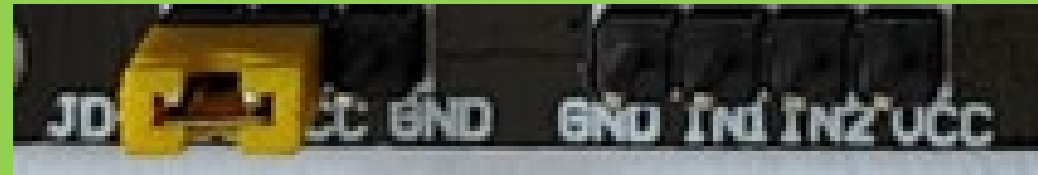


Note:
Control signal is 3.3VDC compatible,
yet the RY-VCC needs to be 5VDC.





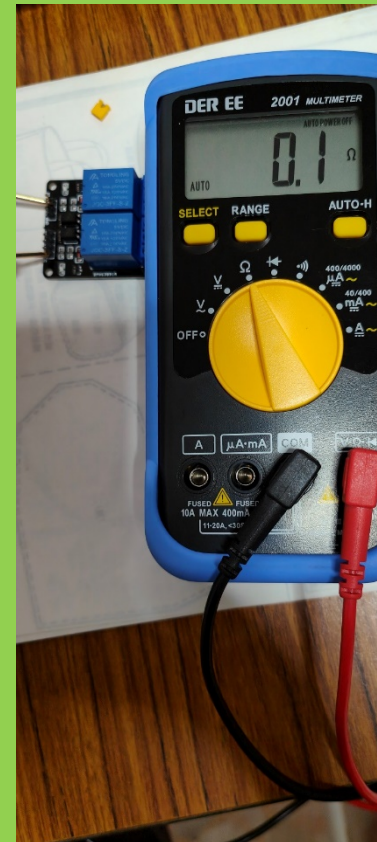
Jumper Cap



Res. Between COM and NC



Res. Between COM and NO

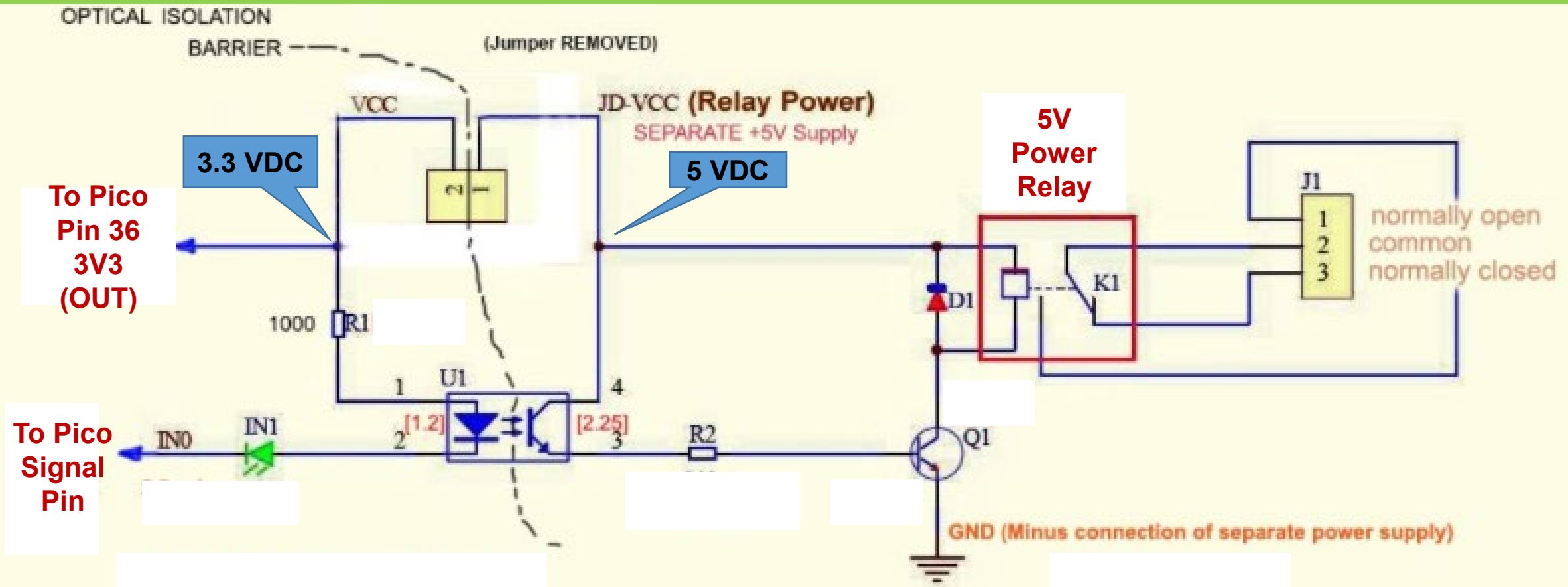


Res. Between Vcc terminals



Res. Between GND terminals

2-Channel 5V Active Low Relay Module

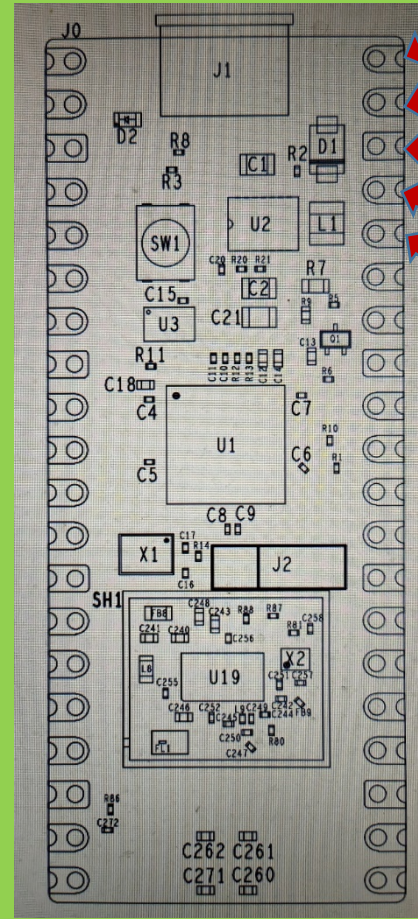


RPi Pico W Component Layout

Micro-USB
Power Connector

VBUS – VSYS
Protection Schottky Diode

Buck-Boost
Voltage
Regulator



Pin 40 - VBUS (USB power) 5 VDC

Pin 39 - VSYS 1.8 to 5.5 VDC

The 8 GROUND pins are all
electrically connected

Pin 37 – 3V3_EN (Pull low to power off the Pico)

Pin 36 – 3V3 (OUT) – max 300 mA

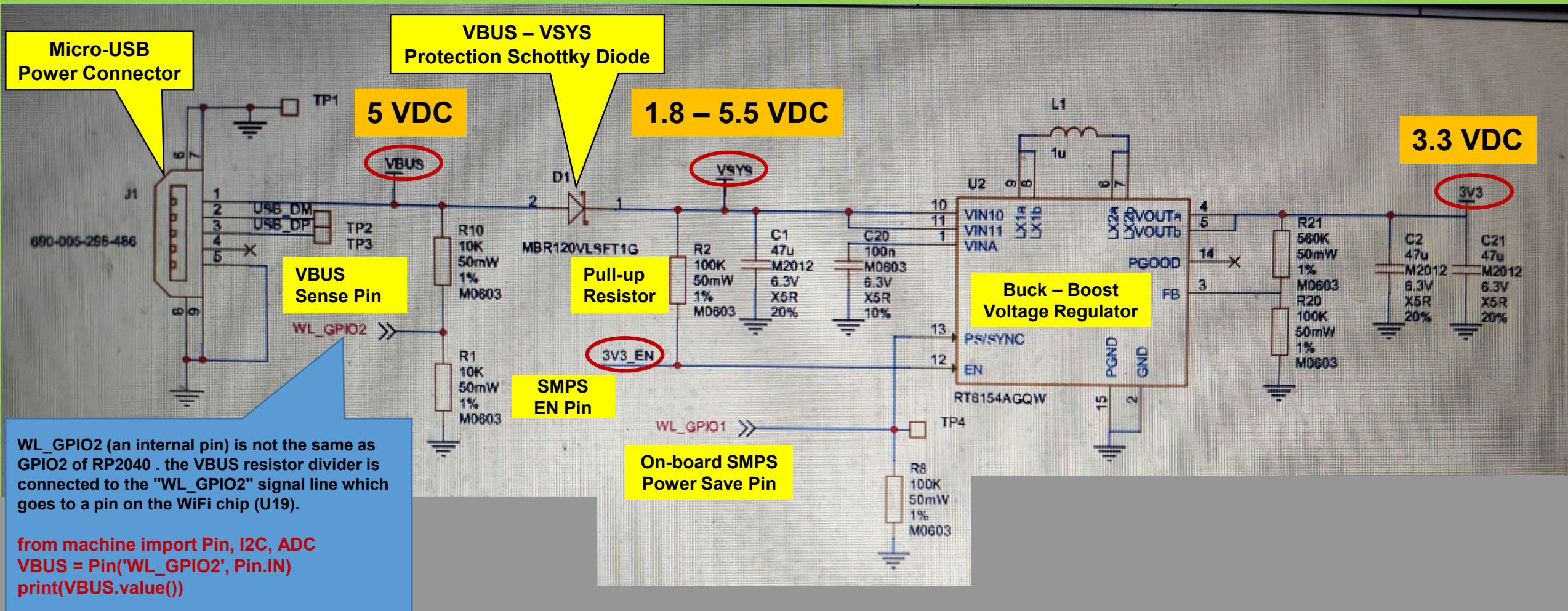
RPi Pico W Power Supply Circuitry

Pin 40 - VBUS (USB power) 5 VDC

Pin 39 - VSYS 1.8 to 5.5 VDC

Pin 37 – 3V3_EN (Pull low to power off the Pico)

Pin 36 – 3V3 (OUT) – max 300 mA



Why 5V and 3.3V voltage levels have become standard in electronics?

1. Historical Precedent:

The 5V voltage level has been used in digital electronics for many decades, dating back to the early days of TTL (transistor-transistor logic) integrated circuits in the 1960s. As digital electronics evolved and became more complex, the 5V standard was carried forward into new designs. Similarly, the 3.3V voltage level was introduced in the 1990s as a lower-power alternative to 5V, and it has since become widely adopted.

Why 5V and 3.3V voltage levels have become standard in electronics?

2. Compatibility:

Many digital components, such as microcontrollers, sensors, and communication modules, are designed to work with either 5V or 3.3V power supplies. Using one of these standard voltage levels simplifies the task of connecting these components together, as it eliminates the need for level-shifting circuits or other complex interface arrangements.

Why 5V and 3.3V voltage levels have become standard in electronics?

3. Power consumption:

As electronics have become more portable and power-efficient, lower voltage levels have become more attractive. Lower voltages result in lower power consumption, which can extend battery life and reduce heat dissipation. For example, 3.3V is commonly used in microcontroller-based systems, as it allows the use of low-power CMOS (complementary metal-oxide-semiconductor) technology.

Why 5V and 3.3V voltage levels have become standard in electronics?

4. Manufacturing and cost:

Using standard voltage levels (5V and 3.3V) simplifies the design and manufacture of electronic components, as it allows for economies of scale in production. Additionally, regulators and other components that operate at these voltage levels are readily available and inexpensive.

End of Sharing Session