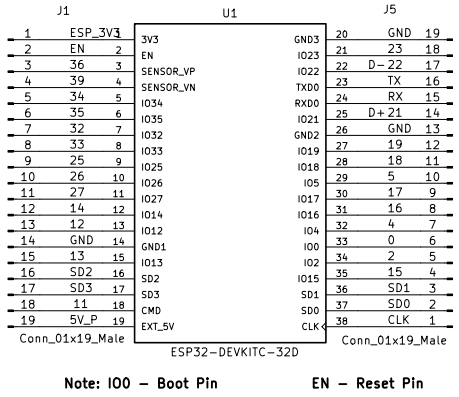
SRA DEVELOPMENT BOARD – 2024

MICROCONTROLLER

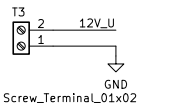
ESP32



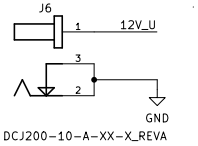
Note: IO0 – Boot Pin EN – Reset Pin

POWER CIRCUITRY

12V–GND Terminal

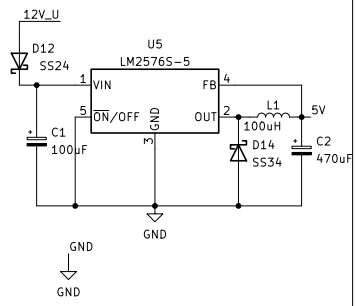


12V–DC Power Jack



LM2576: Buck Regulator

Converts 12V Input to 5V Output

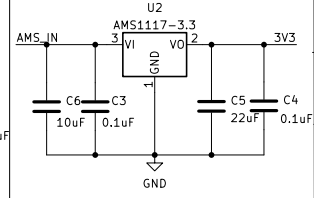


1N5399 <=> SS24 (2A rated Schottky diode)

1N5822 <=> SS34 (3A rated Schottky diode)

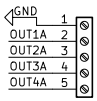
AMS1117: Linear Regulator

Converts 5V Input to 3.3V Output



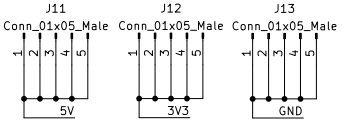
MOTOR PORTS

Output Terminal Blocks



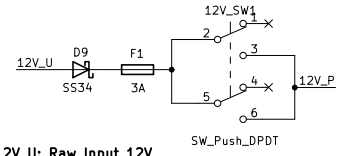
STANDARD VOLTAGE PORTS

5V, 3.3V & GND



DPDT SWITCHES

12V Input–>Motor Supply

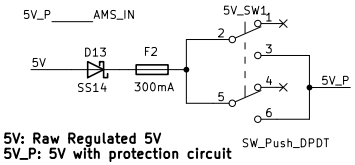


12V_U: Raw Input 12V
12V_P: 12V with protection circuit

1N5822 <=> SS34 (3A Schottky diode)

RUEF160 PTC Resetable Fuse I_trip = 3.2A; I_hold = 1.6A

5V Regulated–>MCU Supply



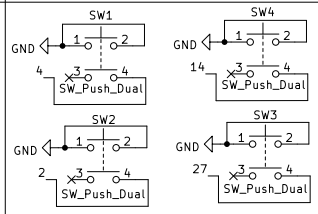
5V: Raw Regulated 5V
5V_P: 5V with protection circuit

1N581* (1N5819/1N5419) <=>
SS15 (Vf=0.7V)
SS12 (Vf=0.5V)
(1A Schottky rectifier)

RXEF050 PTC Resetable Fuse I_trip = 1A; I_hold = 0.5A

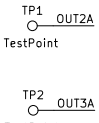
PUSH BUTTONS

Motor Forward–Backward



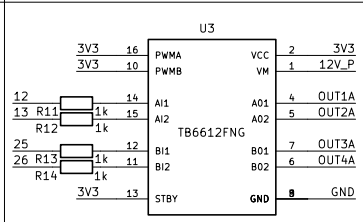
TESTPOINTS

Motor Output Pins

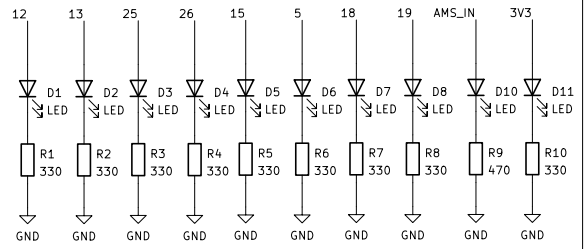


MOTOR DRIVER

TB6612FNG

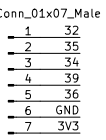


LED ARRAY

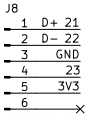


SENSOR PORTS (JST CONN.)

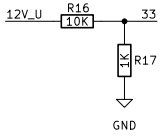
LSA



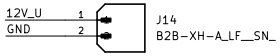
MPU



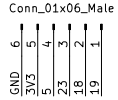
Voltage divider for battery charge sensing



Battery Port

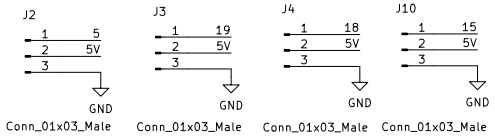


SPI Port



SERVO PORTS

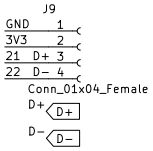
3–Pin 5V Servos



DRILLS

Mounting Holes

OLED PORT



GPIO 21 – SCL
GPIO 22 – SDA
GPIO 23 – INT