H-Bridge

Max. 11.8V
VM
10nF, 16V min, X7R
VCC

C2 10uF
IC1
2.2uF, 6.3V

VM   VCP
GND   VINT

AIN1 AOUT1   AOUT1
AIN2 AOUT2   AOUT2

BIN1 AISEN
BIN2

SLEEP BOUT1   BOUT1
FAULT BOUT2   BOUT2
       PAD
       BISEN

GND

DRV8833PWPR

C1   C3

GND

CON3
1
2
4UCON-19963

CON2
1
2
4UCON-19963

GND

Annotations for channel A outputs are reversed on PCB, that is AOUT1 = 2 and AOUT2 = 1

Pinout

VCC

PIN1

RESET 1   RST
3V3   2   3.3V
       3   5V
       5   GND
       4   GND
VM   6   VIN

GND
POT

7   A0
8   A1
9   A2
10 A3
11 A4
12 A5

28   AREF
27   GND
26   D13   LED
25   D12   AIN2
24   D11   AIN1
23   D10   BIN2
22   D9   BIN1
21   D8   BUZZER

20   D7   BUTTON
19   D6   SERVO2
18   D5   SERVO1
17   D4   BTAT
16   D3   SCL   DIP4
15   D2   SDA   DIP3
14   D1   RX   DIP2
13   D0   TX   DIP1

I2C port (optional)

External pull-ups not required, use internal ones.

VCC

R13 10K
R12 10K

SDA   X1-1
      X1-2
SCL   X1-3
      X1-4

MICROMATCH-4

GND

Footprint

SDA ② ④ SCL
VCC ① ③ GND

Power input

VCC   VM

CON1
1
2
3
4UCON-19836

GND

VM can be at maximum 11.8V as it's the absolute maximum rating of the h-bridge to which it's directly connected.

Potentiometer

VCC
POT

E
S
10K
JP3
AB
JUMPER

POT 10K
A
R4
GND

Protection resistor

Servo motors

VCC   VCC

SERVO1 JP1   SERVO2 JP2
        1   1
        2   2
        3   3

GND   GND

Buzzer

SG1
BUZZER   R5   SJ2
         1K   1   2   BUZZER

GND

Solder jumper connected by default

Button

SJ1
1   2   RESET

BTN BUTTON
     3 4
     1 2
R3
10K   BUTTON

GND

Can be used as a MCU reset button or a normal button. The 10K resistor is for short-circuit protection in case the pin is used as output (high level) and the button is clicked.

Bluetooth (optional)

Bluetooth AT mode selector
For HC-05 model only

RX

R7 1K
TX   1
      2

IC2

UART-TX   PIO(11)   34
UART-RX
           PIO(8)   31

R10 2K

GND

3V3   12   3V3
       13   GND0

GND

GND1   BLUETOOTH   GND2   21

BTAT
R9 1K
R11 2K

R8 1K

LED2
STATUS

GND

Cannot be used when DIP-Switch is mounted!

See datasheet for AT commands

DIP switch

VCC

SW DIP-2
ON 4 3
SW1
    1 2

RX (1)
TX (0)

R1 10K
R2 10K

GND

Do not mount when Bluetooth module is mounted!

Mount holes

GND

H1
MOUNT-PAD-ROUND3.2

H2
MOUNT-PAD-ROUND3.2

LED   1K   LED
      R6   LED1

GND

Optional LED on the shield as it occludes the one on the PRismino.

Serial Peripheral Interface

ISP1

MISO   1 2   +5
SCK   3 4   MOSI
RESET 5 6   GND

GND

Robopoly Shield

robopoly

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EPFL