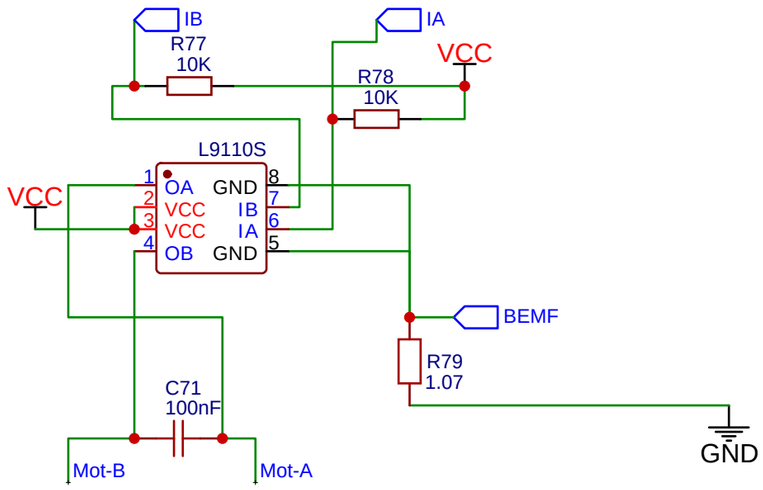
L9110 driver chips supports DC voltages from 2.5 to 12 V, caters continuous current of 800 mA, and has a maximum peak current of 1.5 to 2 A

L9110 as single VCC for both control logic and motor driver circuits
we can run the module from a 3-V DC supply for 3-V DC motors and from 5 V for 5-V DC motors

IA = PWM (or not) for speed control
IB = direction (forward / reverse) control.
BEMF = back electromotive force (used as endstop sensor)
VCC = 3.3V or 5V (must be the same as logic controller)

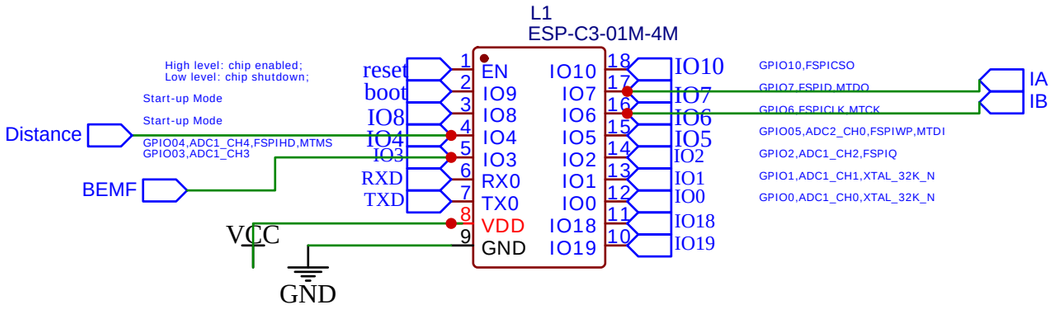
L9110 as single VCC for both control logic and motor driver circuits
So we can run the module from 3.3V controller (ESP) for 3-V DC motors and from 5 V (Arduino) for 5-V DC motors
Caters continuous current of 800 mA, and has a maximum peak current of 1.5 to 2 A



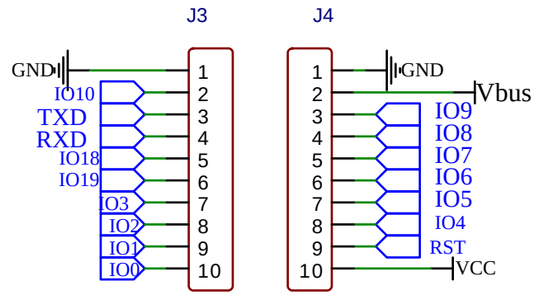
TITLE: L9110s motor controller		REV: 1.0
	Company: Your Company	Sheet: 1/1
	Date: 2022-01-27 Drawn By: nliaudat	

ESP-C3-01M-4M

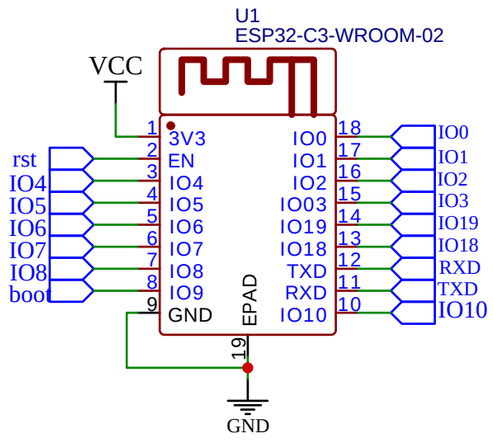
~3$
2x2cm



Headers (not used)



Alternate (Esp-C3-Wroom)



TITLE: ESP32-C3		REV: 1.0
	Company:	Sheet: 1/1
	Date: 2022-02-17 Drawn By:	

https://www.hackster.io/adamb314/super-accurate-300-robot-arm-15f1d2
https://www.oshwhub.com/XKLS-Team/ITR8307-3a8f17fe54bd496f923a885928c7e8d6
https://tams-www.informatik.uni-hamburg.de/publications/2017/3D-Printed%20Low-Cost%20Modular%20Force%20Sensors.pdf
https://programmer.help/blogs/reflective-infrared-photocell-itr8307.html
https://ieeexplore.ieee.org/abstract/document/9133543

Reflective optical interrupter
1-5mm distance sensor
2mm height
~0.15$

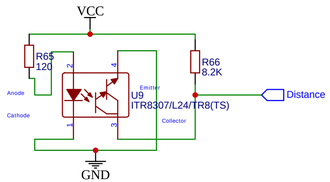
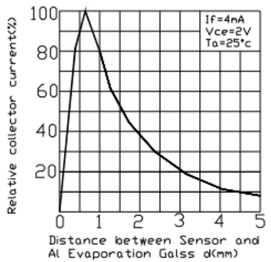
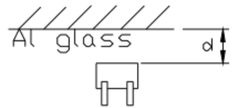


Fig.1 Relative Collector Current vs. Distance between Sensor and Al Evaporation Galss



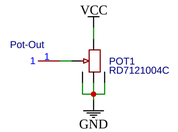


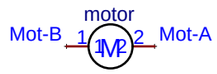
TITLE: Sheet_1	REV: 1.0
Company: Your Company	Sheet: 1/1
Date: 2022-01-25 Drawn By: nliaudat	

Kodak neutral card	
White side (reference medium)	**100%**
Gray side	20%
Paper	
Typewriting paper	94%
Drawing card, white (Schoeller Durex)	100%
Card, light gray	67%
Envelope (beige)	100%
Packing card (light brown)	84%
Newspaper paper	97%
Pergament paper	30-42%
Black on white typewriting paper	
Drawing ink (Higgins, Pelikan, Rotring)	4-6%
Foil ink (Rotring)	50%
Fiber-tip pen (Edding 400)	10%
Fiber-tip pen, black (Stabilo)	76%
Photocopy	7%
Plotter pen	
HP fiber–tip pen (0.3 mm)	84%
Black 24 needle printer (EPSON LQ-500)	28%
Ink (Pelikan)	100%
Pencil, HB	26%

Plastics, glass	
White PVC	90%
Gray PVC	11%
Blue, green, yellow, red PVC	40-80%
White polyethylene	90%
White polystyrene	120%
Gray partinax	9%
Fiber glass board material	
Without copper coating	12-19%
With copper coating on the reverse side	30%
Glass, 1 mm thick	9%
Plexiglass, 1 mm thick	10%
Metals	
Aluminum, bright	110%
Aluminum, black anodized	60%
Cast aluminum, matt	45%
Copper, matt (not oxidized)	110%
Brass, bright	160%
Gold plating, matt	150%
Textiles	
White cotton	110%
Black velvet	1.5%

Linear potentiometer 10mm travel
~0.45$

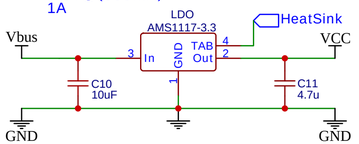




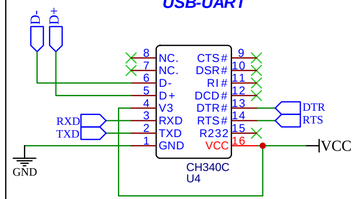
TITLE: Sheet_1		REV: 1.0
	Company: Your Company	Sheet: 1/1
	Date: 2022-02-16 Drawn By: nliaudat	

REGULATOR LDO

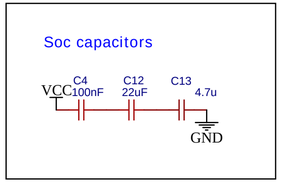
0.18$
1.3V@(800mA)
1A



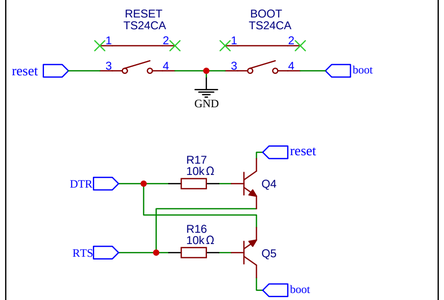
USB-UART



Soc capacitors

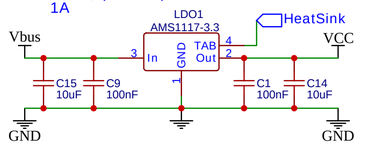


Buttons



TITLE: power		REV: 1.0
	Company:	Sheet: 1/1
	Date: Drawn By:	

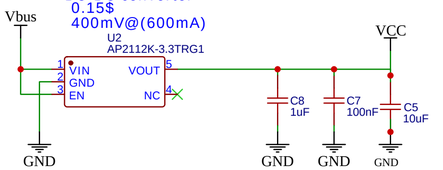
0.18$
1.3V@(800mA)
1A

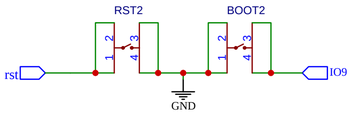


https://oshwlab.com/nicosandller/ams1117-3-3

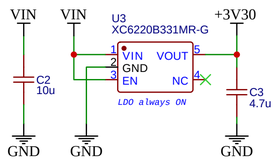
OLD not in stock

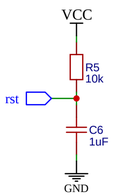
DC-DC converter
0.15$
400mV@(600mA)



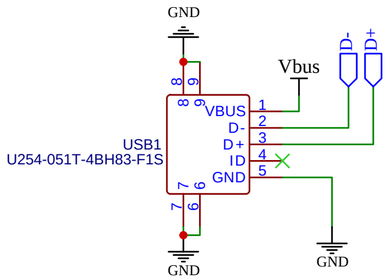


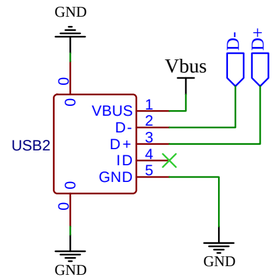
REGULATOR (LDO1): SOC MODULE





micro usb female





Board to Board connectors

Female connectors

P1
Header-Female-2.54_1x2

P2
Header-Female-2.54_1x2

P3
Header-Female-2.54_1x2

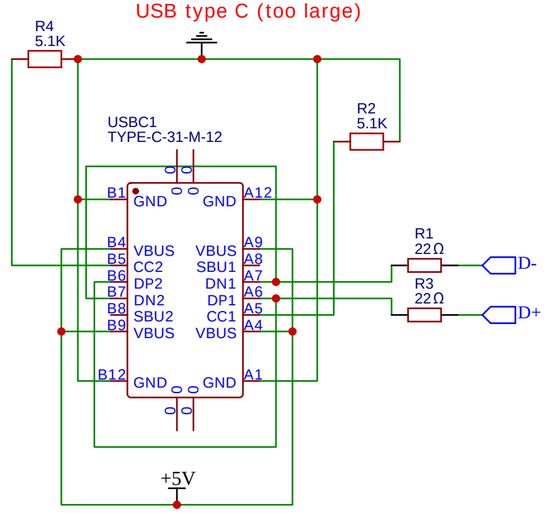
Male connectors

H1
210S-1*2P L=11.6MMGold-plated black

H2
210S-1*2P L=11.6MMGold-plated black

H3
210S-1*2P L=11.6MMGold-plated black

USB type C (too large)



TITLE: connectors		REV: 1.0
	Company: Your Company	Sheet: 1/1
	Date: 2022-02-17 Drawn By: nliaudat	