CAN BUS Power Rail

https://de.aliexpress.com/item/1005005829877910.html

DC Buck 80 V to 5V 1 A
(if we implement RGB strip, get 10A)

Never powered Down so that emergency signal keep blinking

Conn_01x04 CAN IN J1 — CANH, CANL

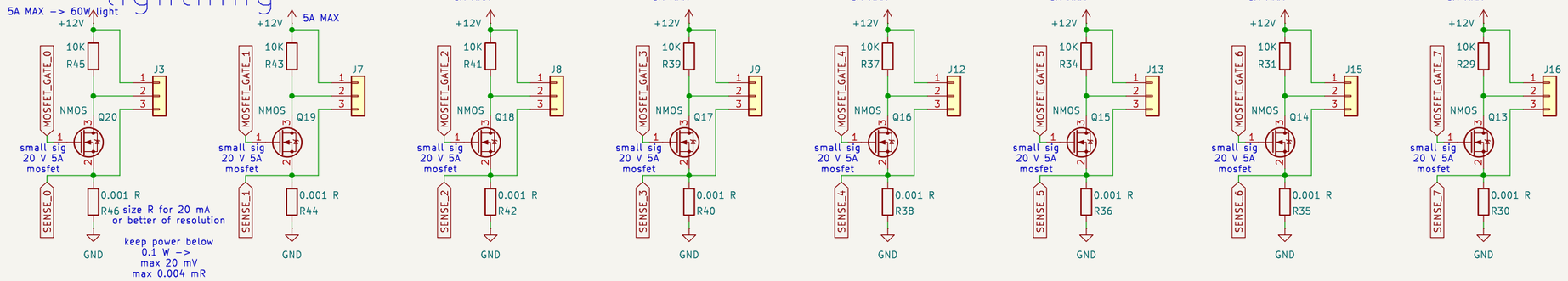
Conn_01x04 CAN OUT J2 — CANH, CANL

DC Buck 80 V to 12V 10 A

https://de.aliexpress.com/item/1005009210793105.html

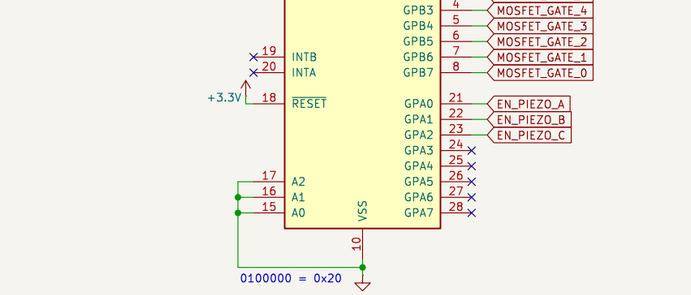
lightning

5A MAX -> 60W light



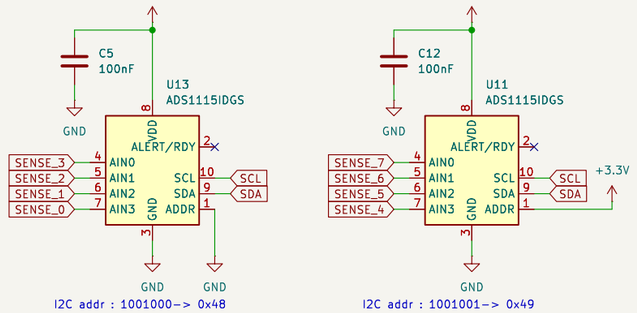
Compute

3v3 provided by internal LDO of ESP32 devboard



ADC for current sensing

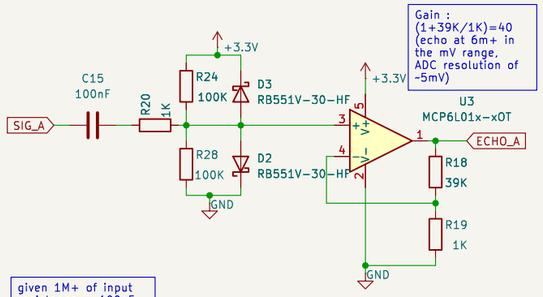
this is mainly to detect fault in the lightning system (dead lamp) but it can also be used (crudely) if one choose to do PWM to dim the light and control the current



GPIO

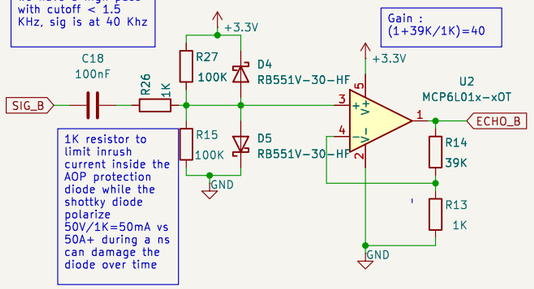
proximity sensor

Gain : (1+39K/1K)=40 (echo at 6m+ in the mV range, ADC resolution of ~5mV)



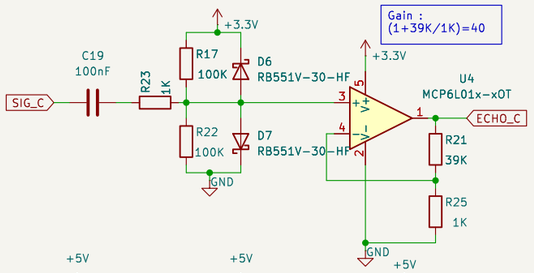
given 1M+ of input resistance + 100nF, we have a high pass with cutoff < 1.5 KHz, sig is at 40 Khz

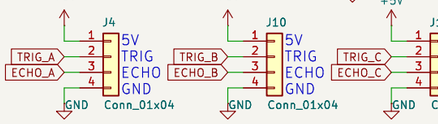
Gain : (1+39K/1K)=40

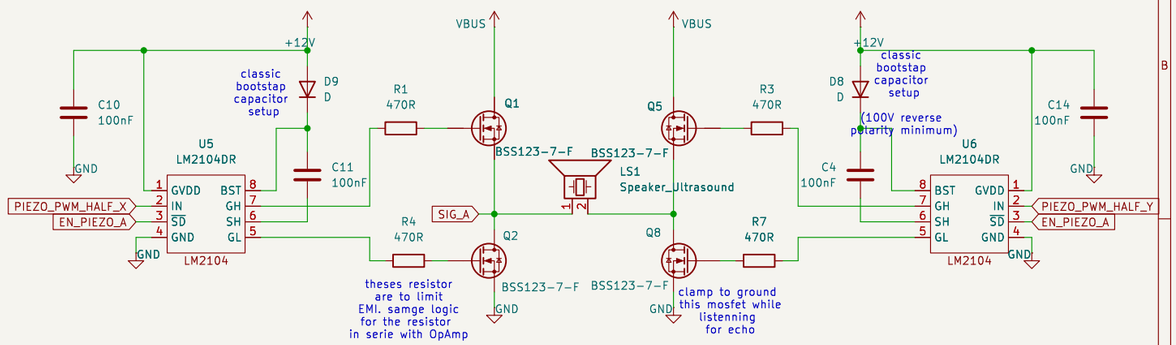


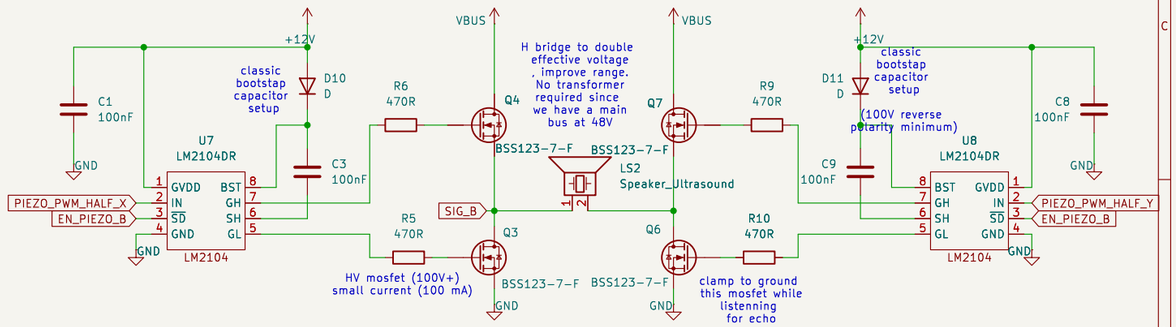
1K resistor to limit inrush current inside the AOP protection diode while the shottky diode polarize 50V/1K=50mA vs 50A+ during a ns can damage the diode over time

Gain : (1+39K/1K)=40

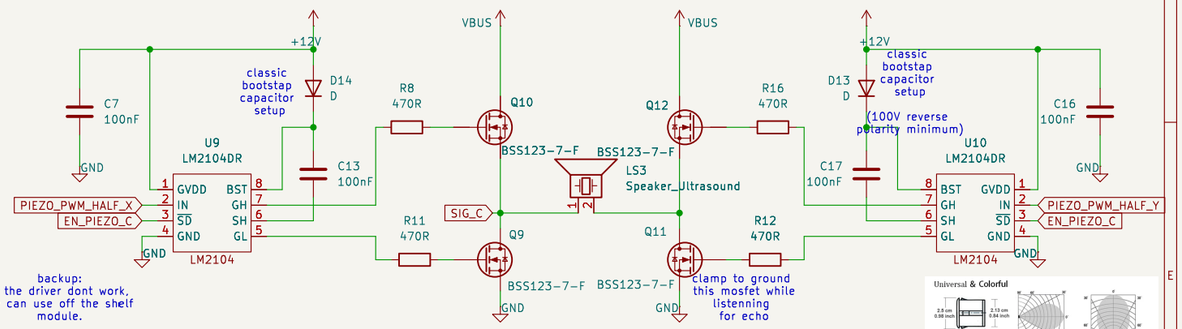




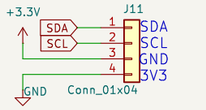




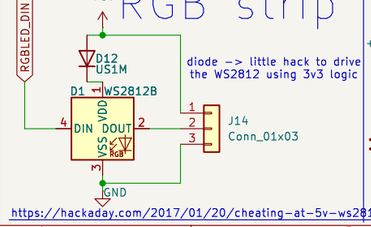
backup: if the driver dont work, we can use off the shelf module.



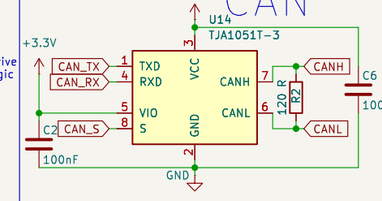
daylight sensor



RGB strip



CAN



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