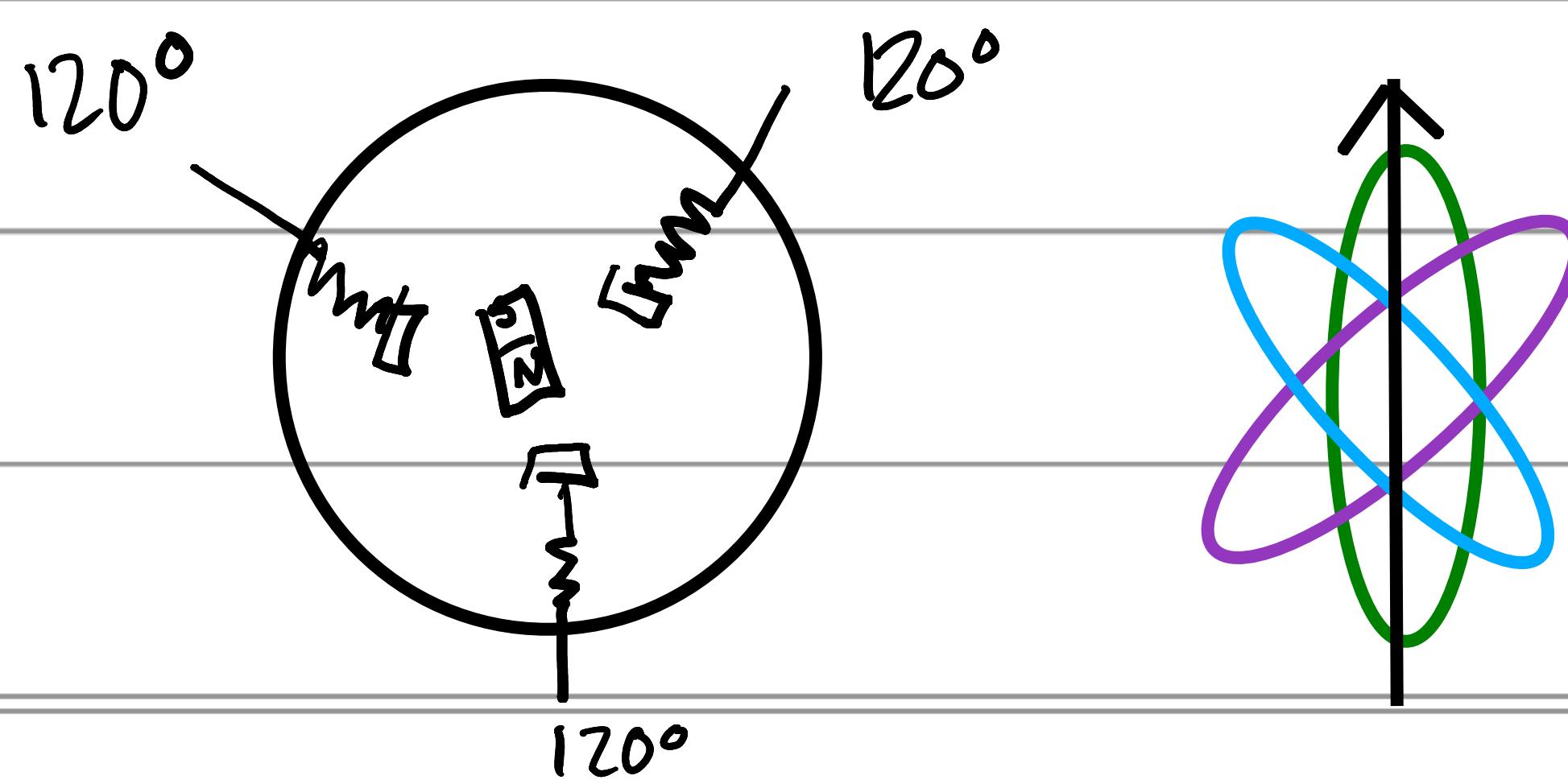
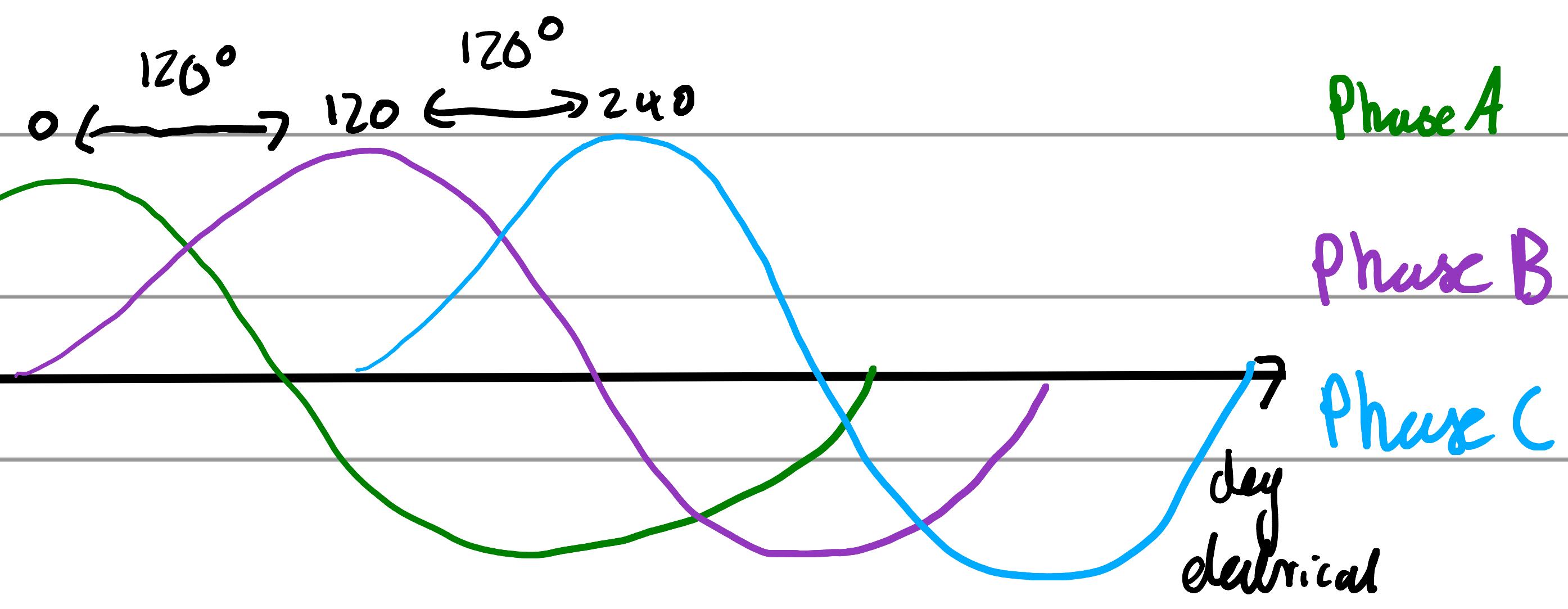
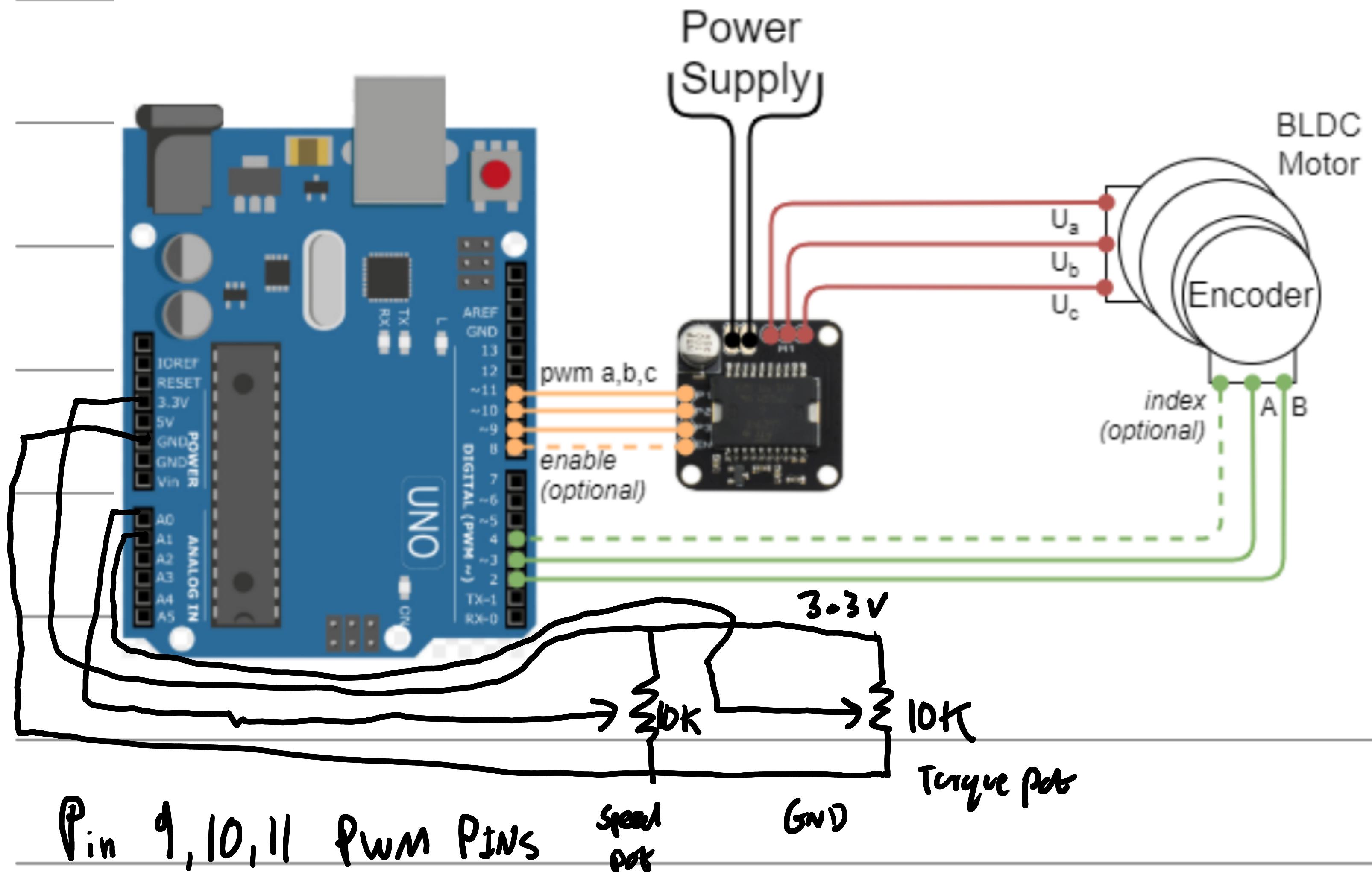
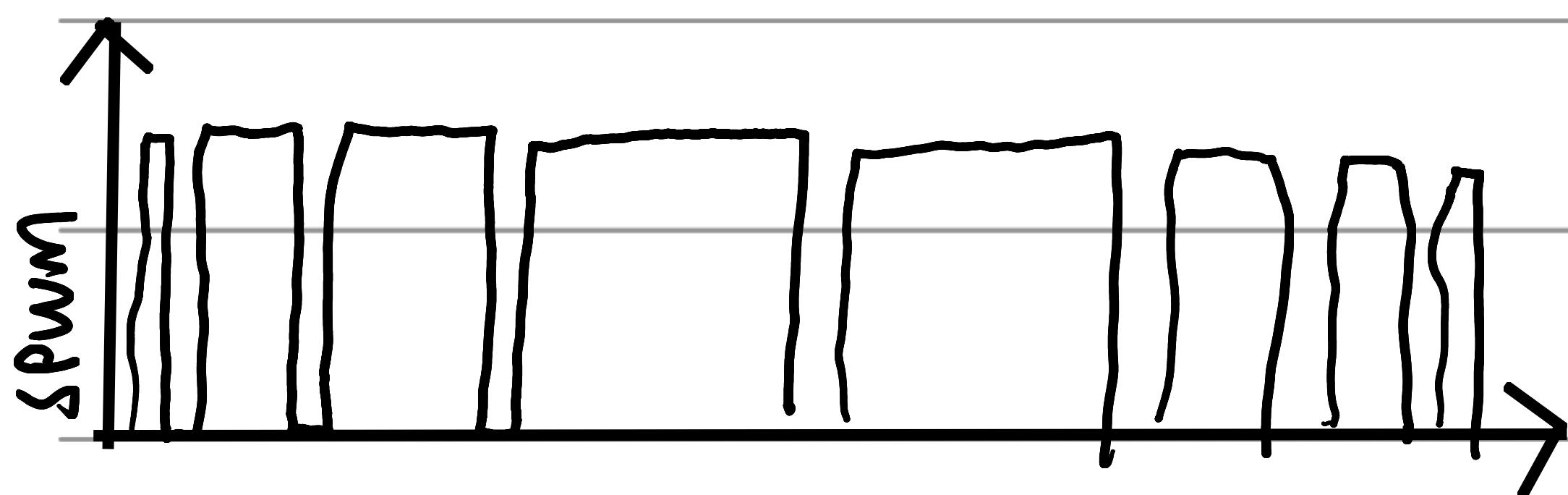
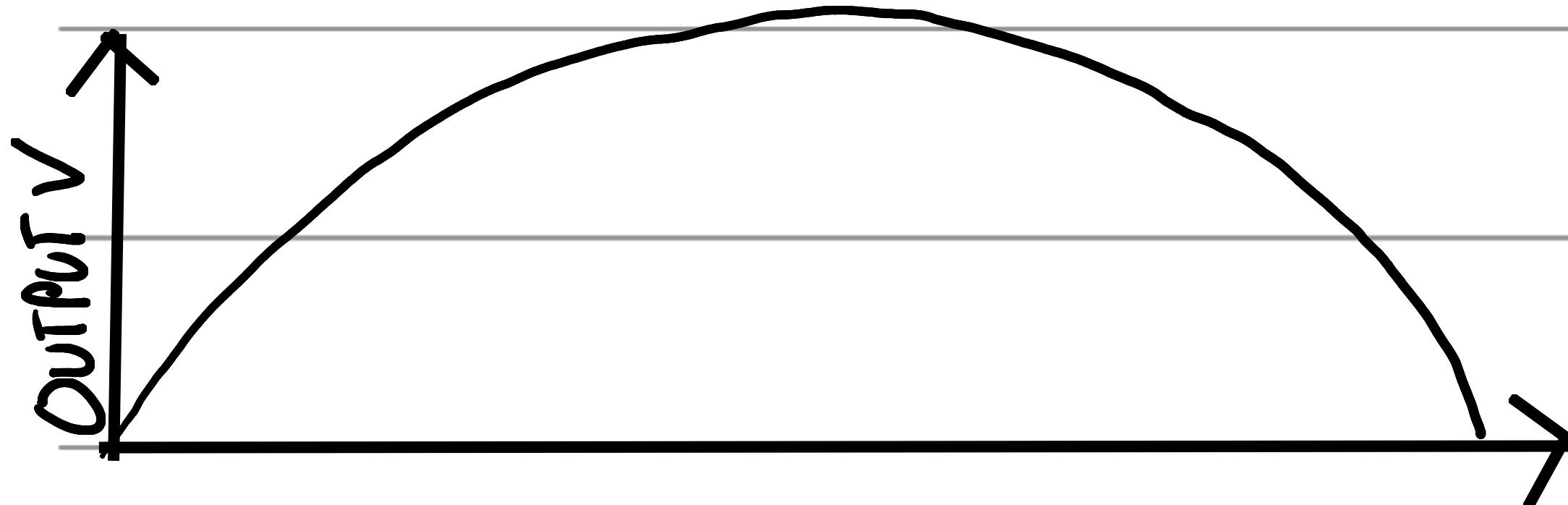


# L6234D breakout + uno 3phase driver



Use the Arduino to create the sinusoidal waves & the L6234 to amplify the signal. & apply them to the motor.

How to create such signals from PWM, SPWM modules  
The signals to generate an approximate sinusoidal signal. One changes the width of the PWM signal that follow a sine wave amplitude



Degrees to radians  $1^{\circ} \text{ deg} \times \frac{\pi}{180} = 0.0174533^{\circ} \text{ rad}$

int electrical-degrees-phase A = 0

phase B = 120

phase C = 240

loop electrical angle

loop: electrical-degrees-phase A % = 360

-phase B % = 360

-phase C % = 360

get SPWM duty

SPWM-phase-A =  $\sin((\text{double}) \text{electrical-deg-phase-A} \times \pi / 180) \times 127.5 + 127.5$

phase-B

-phase B

phase-C

-phase C

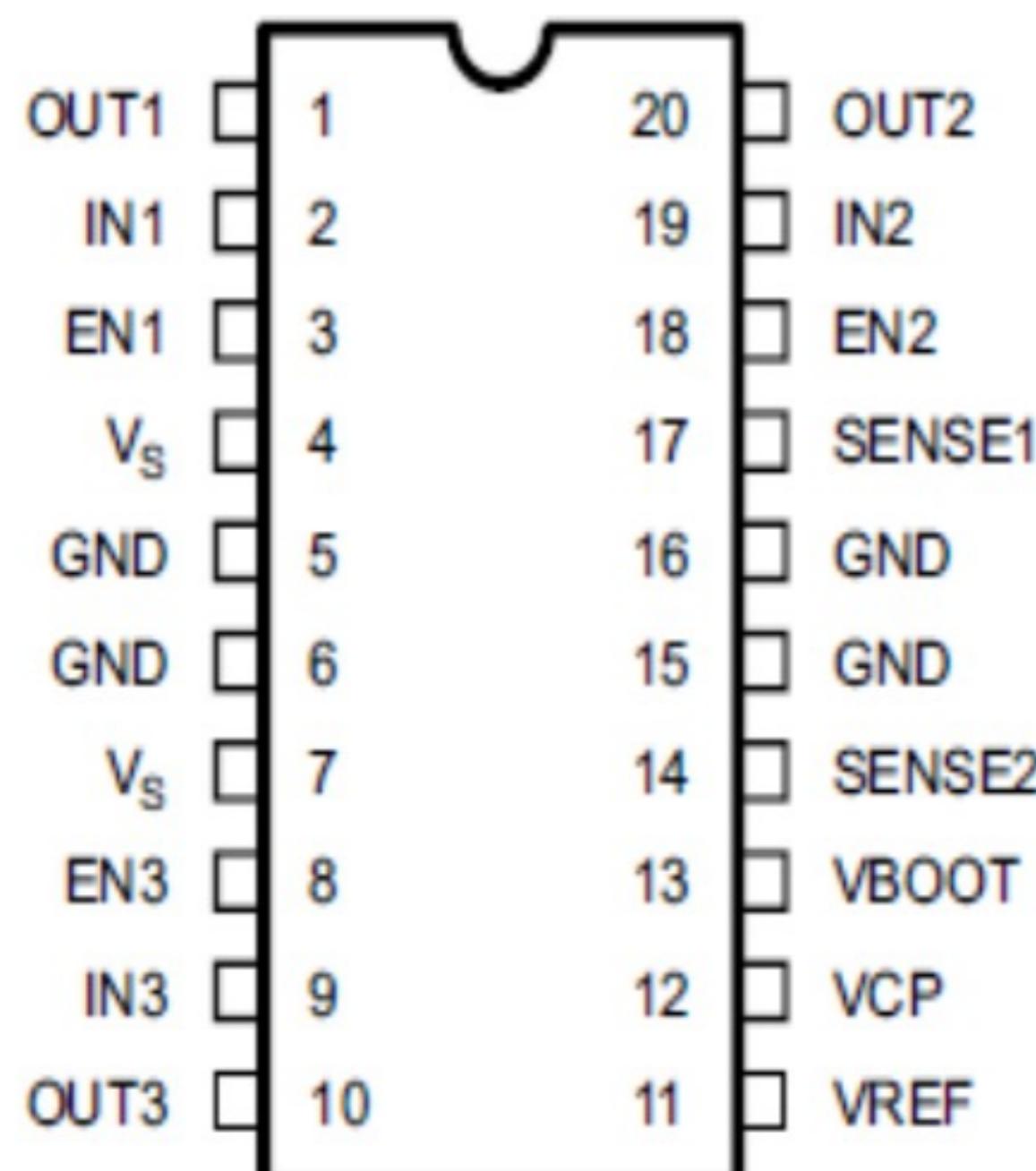
write duty

analogWrite( MbotPhaseA, SPWM-phase-A \* amplitude )

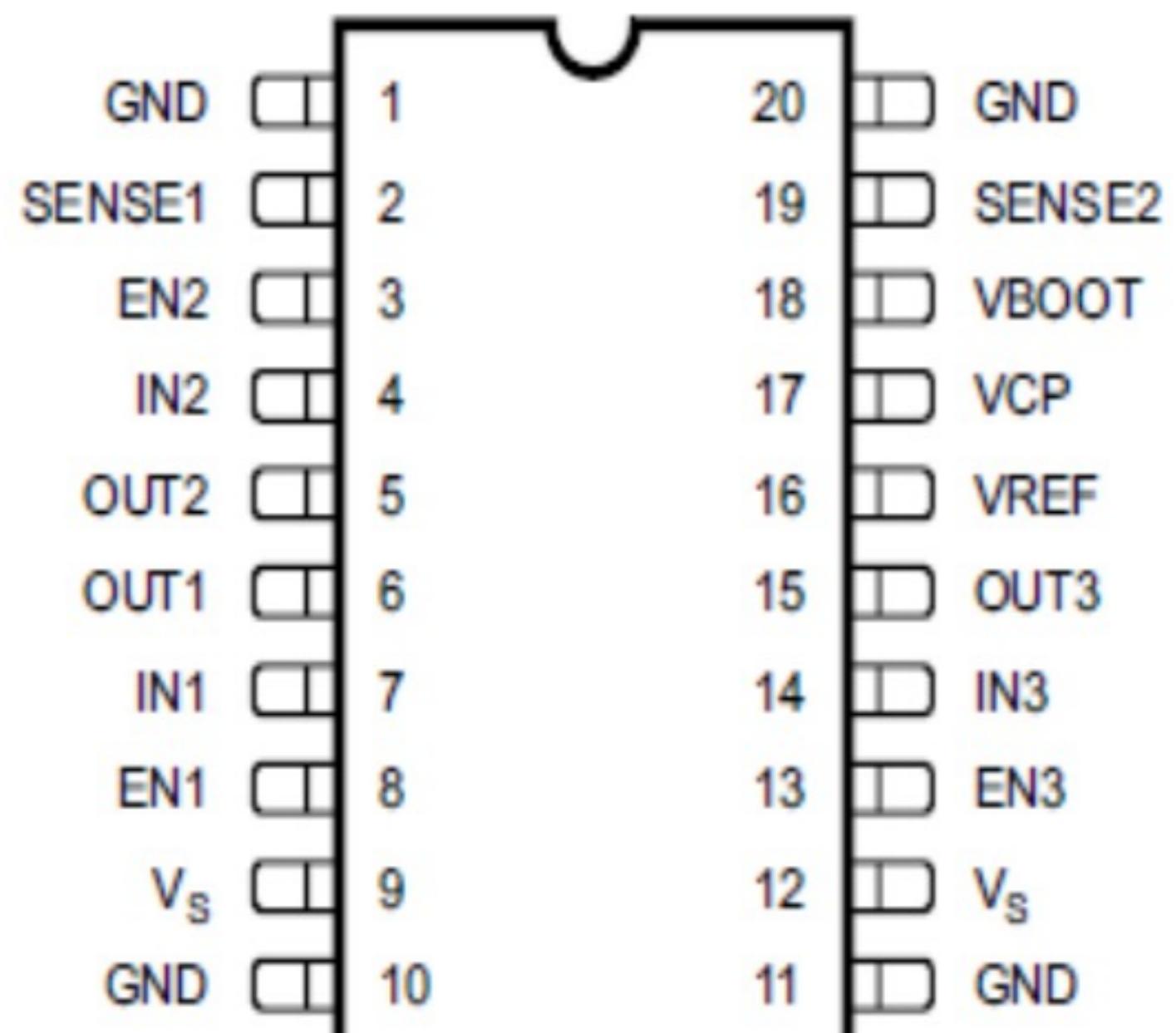
delay (some speed interval).

extra ... set pump clocks. etc

L6234 Pin out

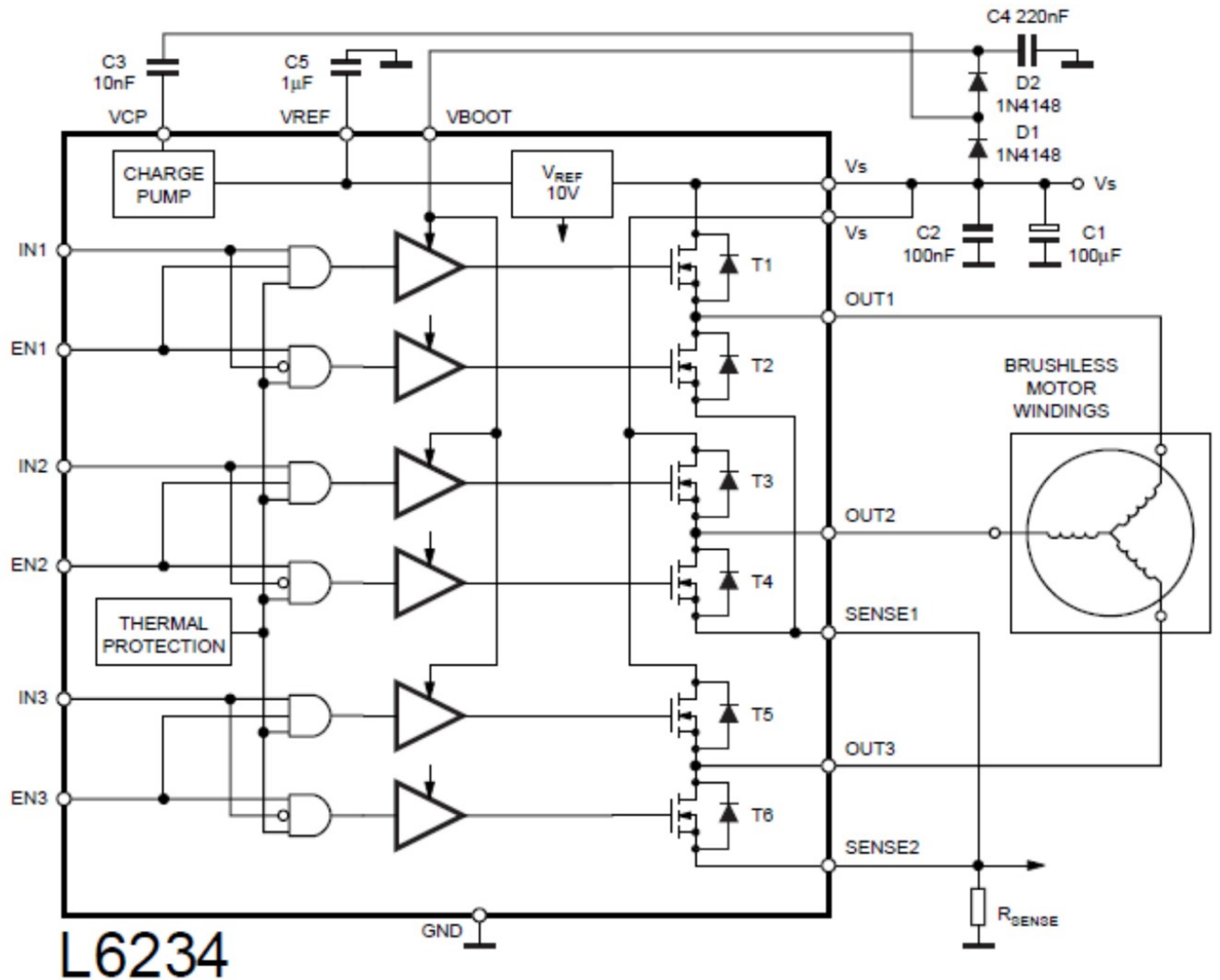


POWER DIP (16+2+2)



PowerSO20

# L6234 Datasheet Circuit



Components

$R_{sense} \approx 1\Omega$

$0.12\mu F$

(1:  $100\mu F$  polarised 25V · (4:  $220nF$  224 ·

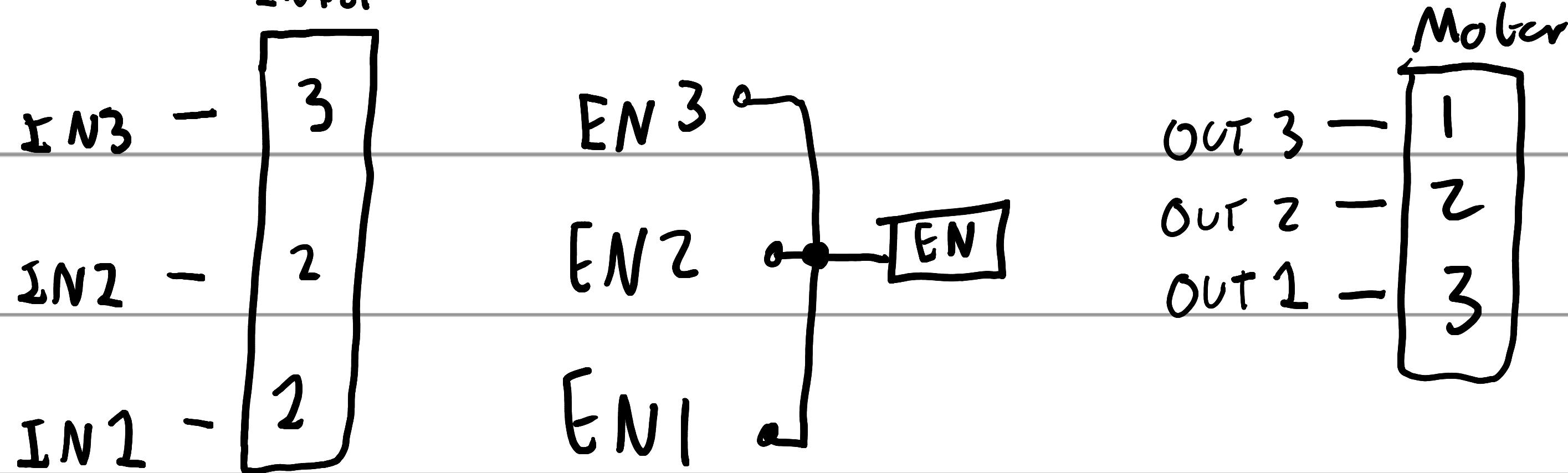
(2:  $100nF$  104 ·

(5:  $1\mu F$  105 ·

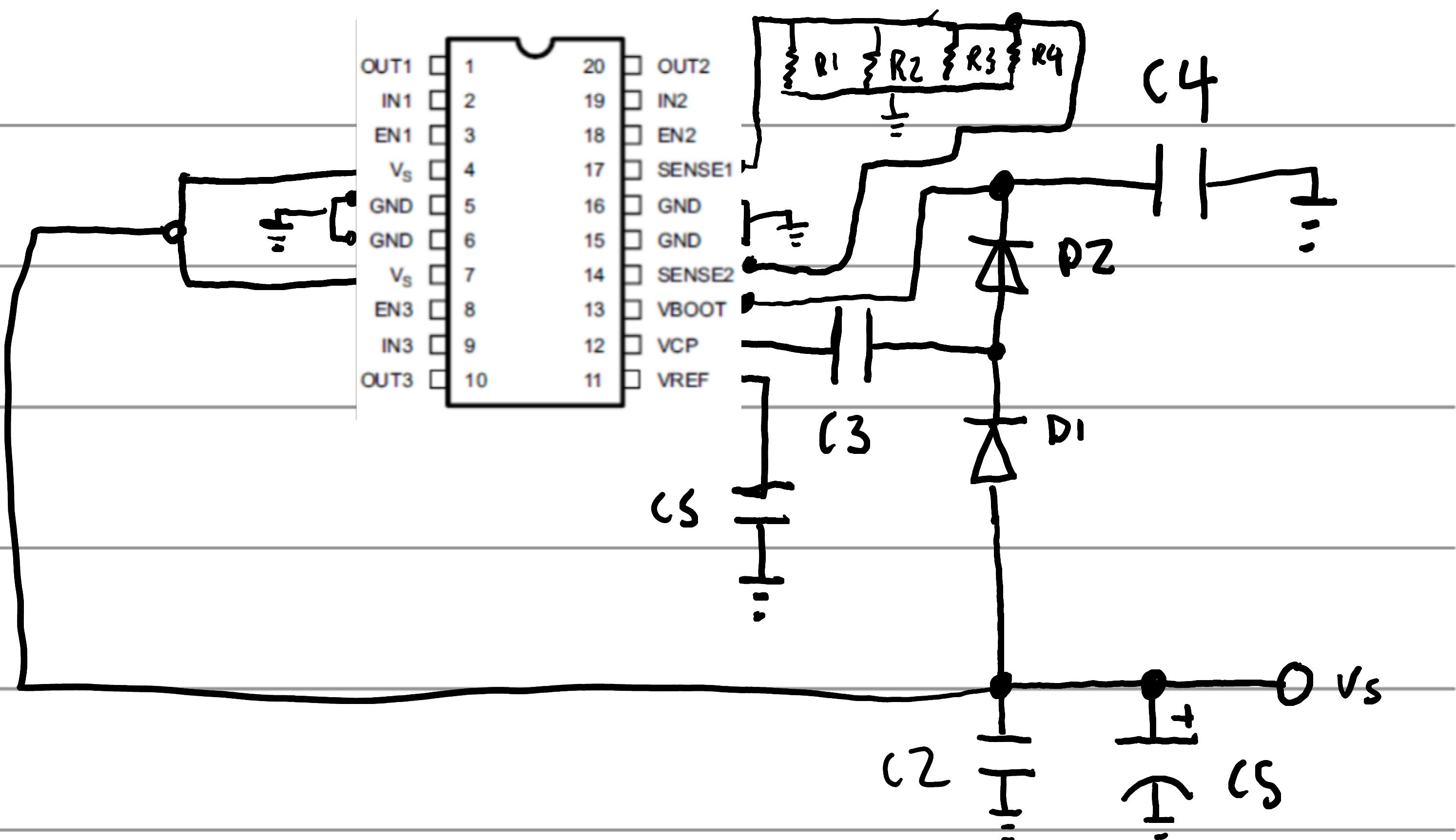
(3:  $10nF$  103 ·

D1/D2: 1N4148 ·

# DIP 20 circuit

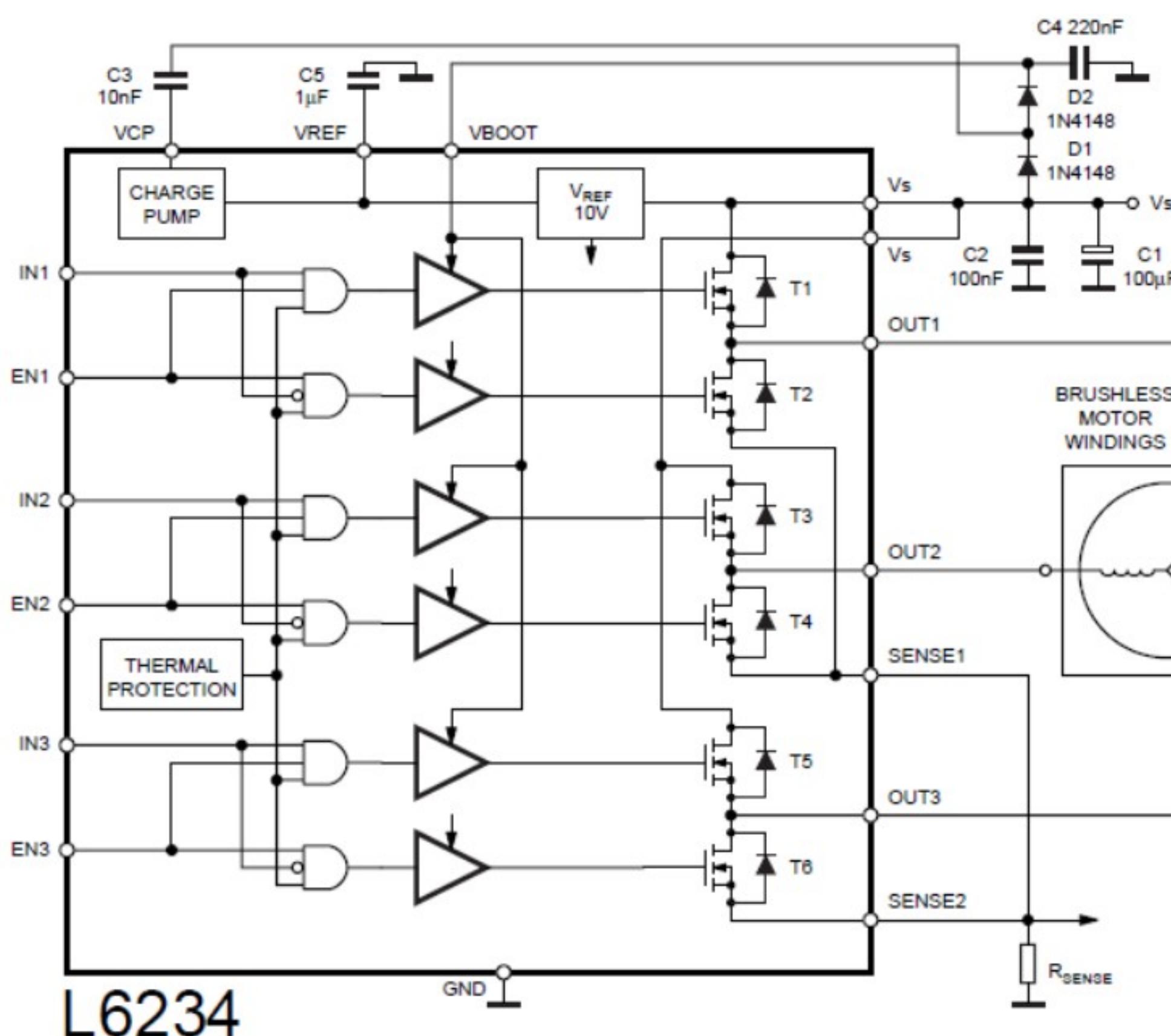


$R_1, R_2, R_3, R_4$  1Ω



Alternative

sense1  
sense2



Performance, added millisecond loop timer. ~10ms at full speed.

int32 → int16

double → float -

Disabling mult print 2ms

# Perf board circuit

