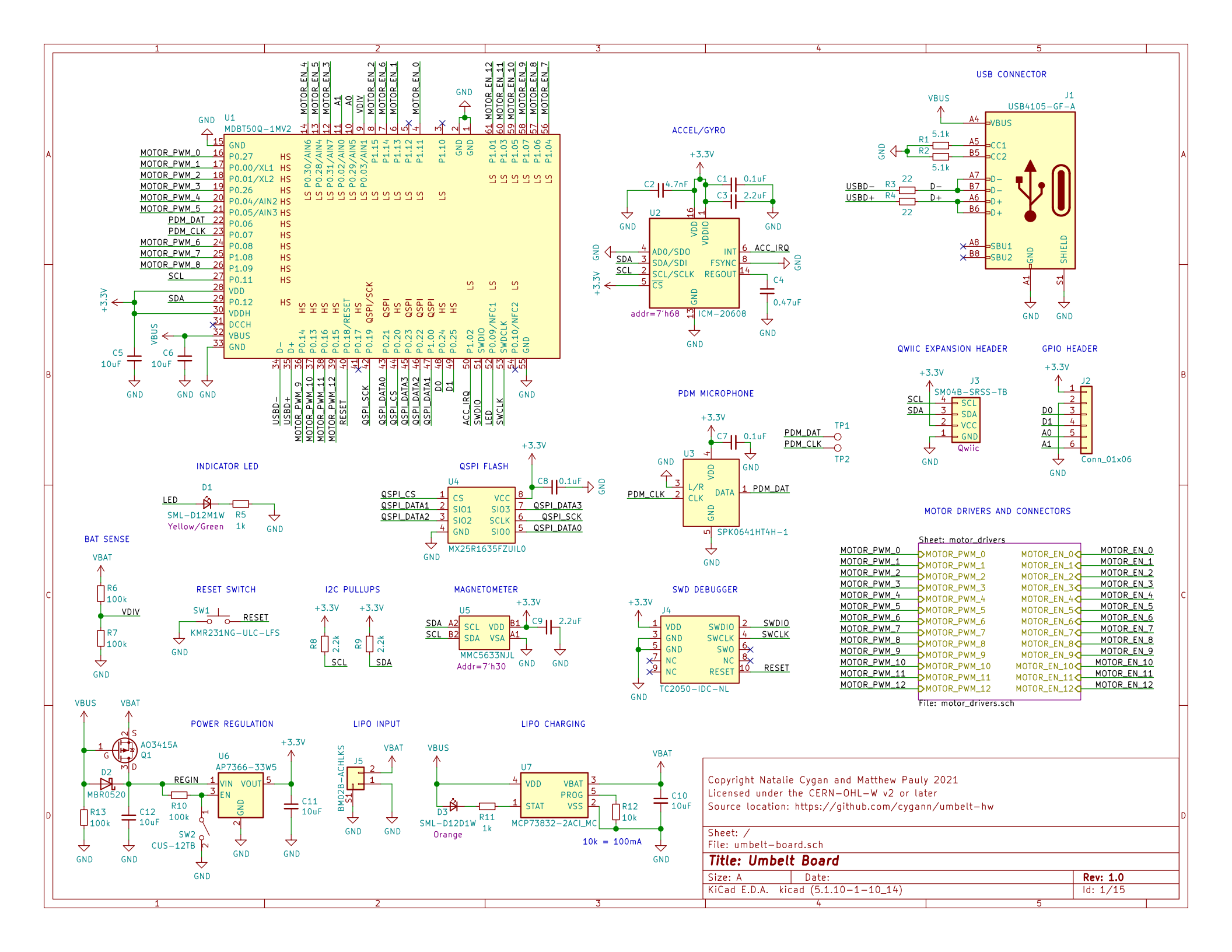
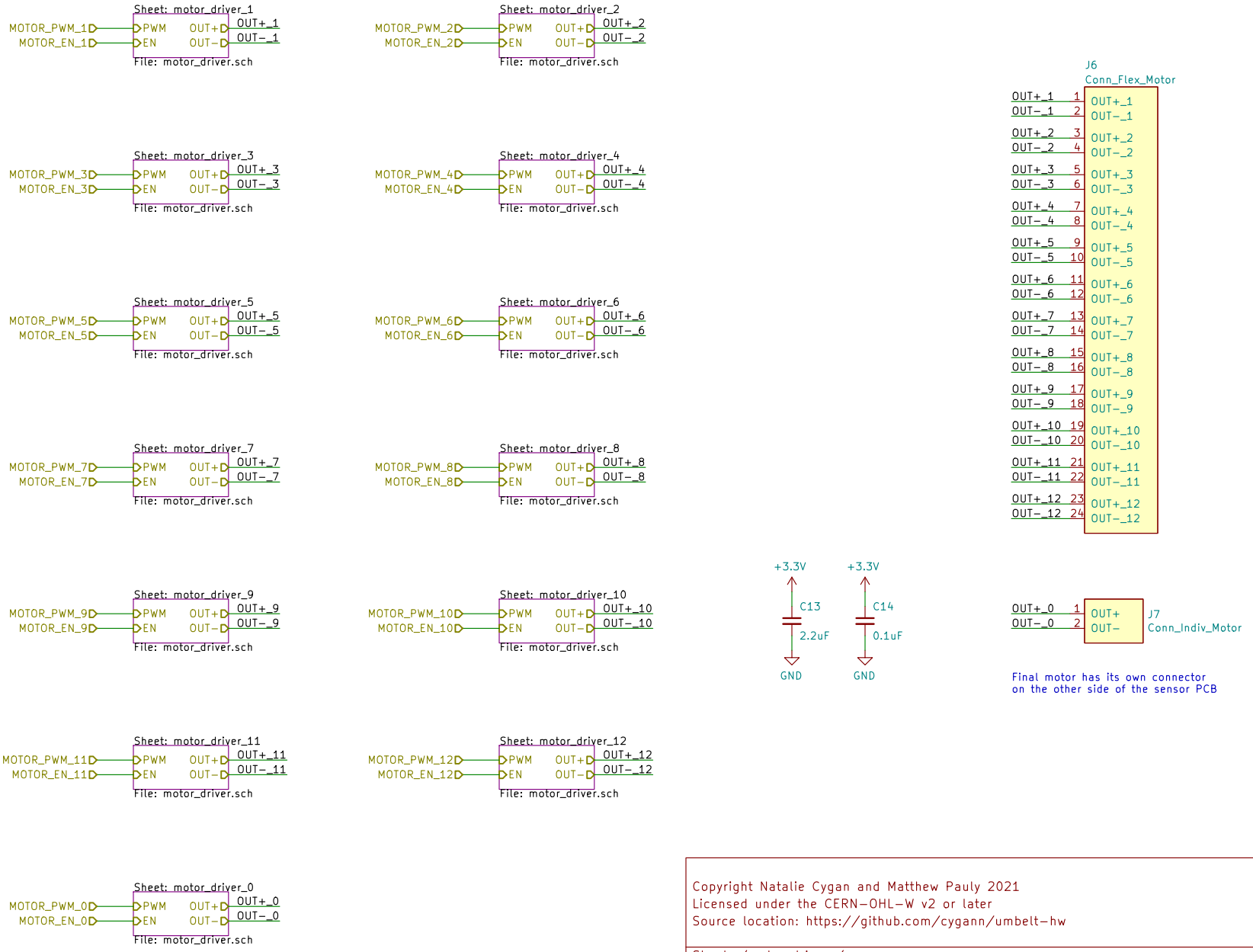
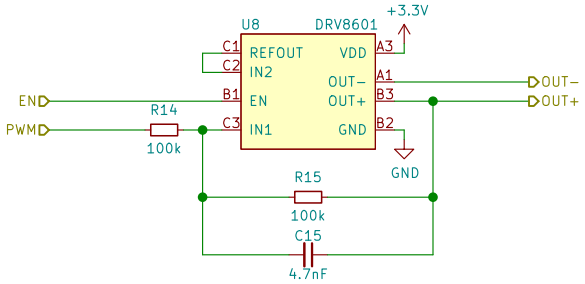

U1
MDBT50Q-1MV2
MOTOR_PWM_0
MOTOR_PWM_1
MOTOR_PWM_2
MOTOR_PWM_3
MOTOR_PWM_4
MOTOR_PWM_5
PDM_DAT
PDM_CLK
MOTOR_PWM_6
MOTOR_PWM_7
MOTOR_PWM_8
SCL
SDA
VBUS
C5 10uF
C6 10uF
ACCEL/GYRO
U2
ICM-20608
addr=7'h68
C1 0.1uF
C2 4.7nF
C3 2.2uF
C4 0.47uF
ACC_IRQ
USB CONNECTOR
J1
USB4105-GF-A
R1 5.1k
R2 5.1k
R3 22
R4 22
USBD-
USBD+
QWIIC EXPANSION HEADER
J3
SM04B-SRSS-TB
Qwiic
GPIO HEADER
J2
Conn_01x06
PDM MICROPHONE
U3
SPK0641HT4H-1
C7 0.1uF
PDM_DAT
PDM_CLK
TP1
TP2
INDICATOR LED
D1
SML-D12M1W
Yellow/Green
R5 1k
LED
QSPI FLASH
U4
MX25R1635FZUIL0
C8 0.1uF
QSPI_CS
QSPI_DATA0
QSPI_DATA1
QSPI_DATA2
QSPI_DATA3
QSPI_SCK
MOTOR DRIVERS AND CONNECTORS
Sheet: motor_drivers
File: motor_drivers.sch
BAT SENSE
R6 100k
R7 100k
VDIV
RESET SWITCH
SW1
KMR231NG-ULC-LFS
RESET
I2C PULLUPS
R8 2.2k
R9 2.2k
SCL
SDA
MAGNETOMETER
U5
MMC5633NJL
Addr=7'h30
C9 2.2uF
SWD DEBUGGER
J4
TC2050-IDC-NL
SWDIO
SWCLK
RESET
POWER REGULATION
U6
AP7366-33W5
Q1
AO3415A
D2
MBR0520
R10 100k
R13 100k
C11 10uF
C12 10uF
SW2
CUS-12TB
REGIN
LIPO INPUT
J5
BM02B-ACHLKS
LIPO CHARGING
U7
MCP73832-2ACI_MC
D3
SML-D12D1W
Orange
R11 1k
R12 10k
C10 10uF
10k = 100mA
Copyright Natalie Cygan and Matthew Pauly 2021
Licensed under the CERN-OHL-W v2 or later
Source location: https://github.com/cygann/umbelt-hw
Sheet: /
File: umbelt-board.sch
Title: Umbelt Board
Size: A
Date:
Rev: 1.0
KiCad E.D.A. kicad (5.1.10-1-10_14)
Id: 1/15



Sheet: /motor_drivers/
File: motor_drivers.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 2/15

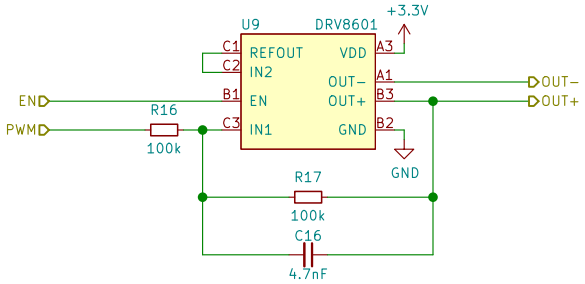


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_1/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 3/15

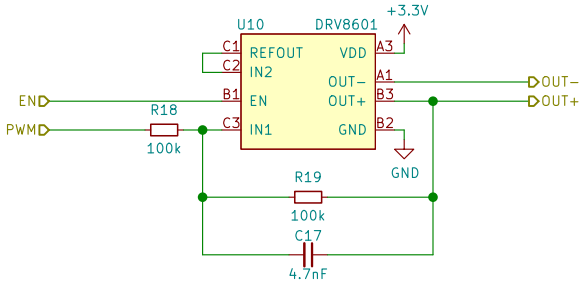


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_2/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 4/15

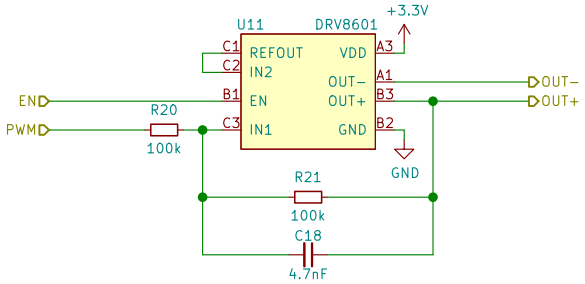


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_3/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 5/15

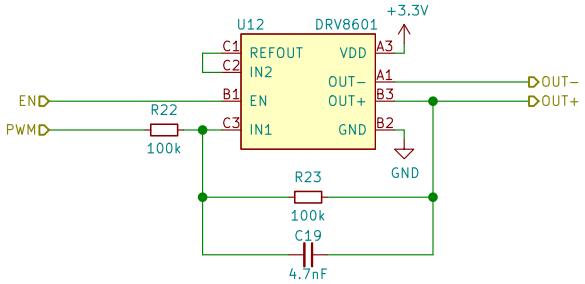


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_4/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 6/15

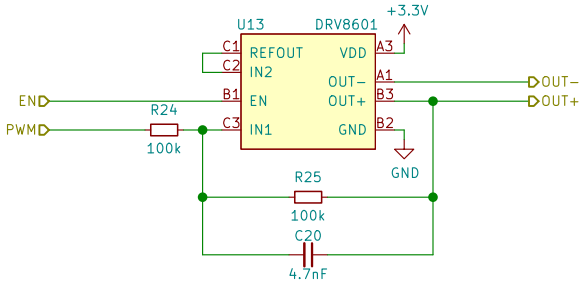


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_5/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 7/15

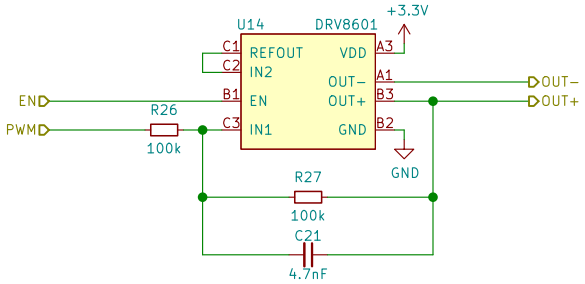


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_6/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 8/15

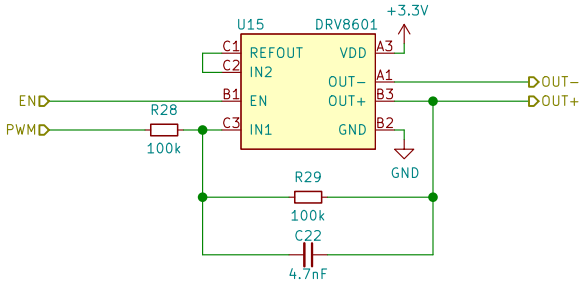


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_7/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 9/15

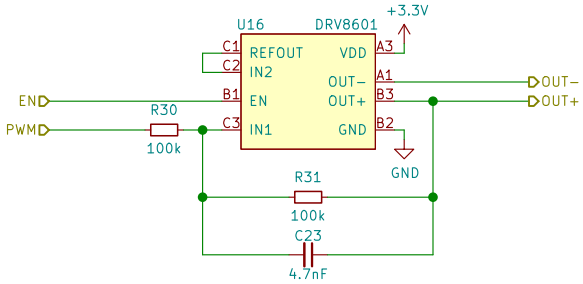


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_8/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 10/15

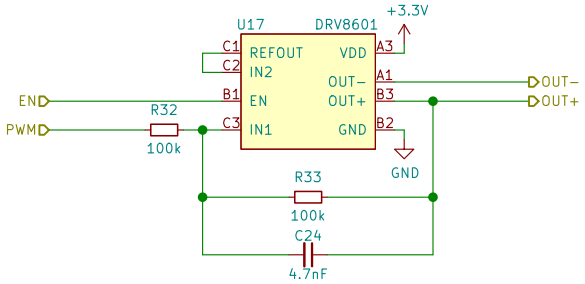


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_9/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 11/15

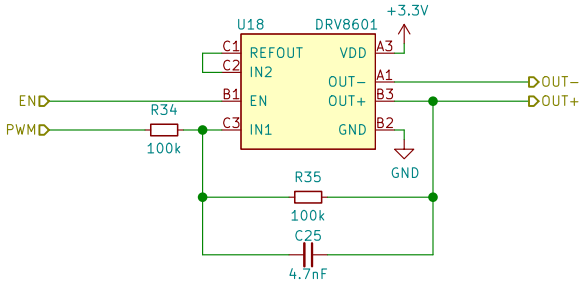


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_10/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 12/15

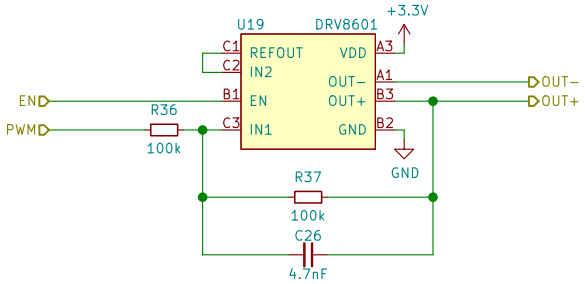


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_11/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 13/15

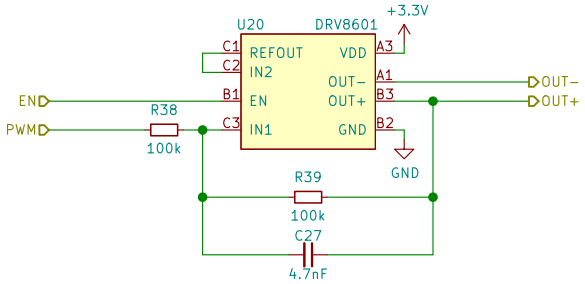


Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_12/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 14/15



Fc = 340Hz. 1.1ms 0−90% rise time.

Sheet: /motor_drivers/motor_driver_0/
File: motor_driver.sch

Title: Umbelt Board

Size: A	Date:	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.10−1−10_14)		Id: 15/15