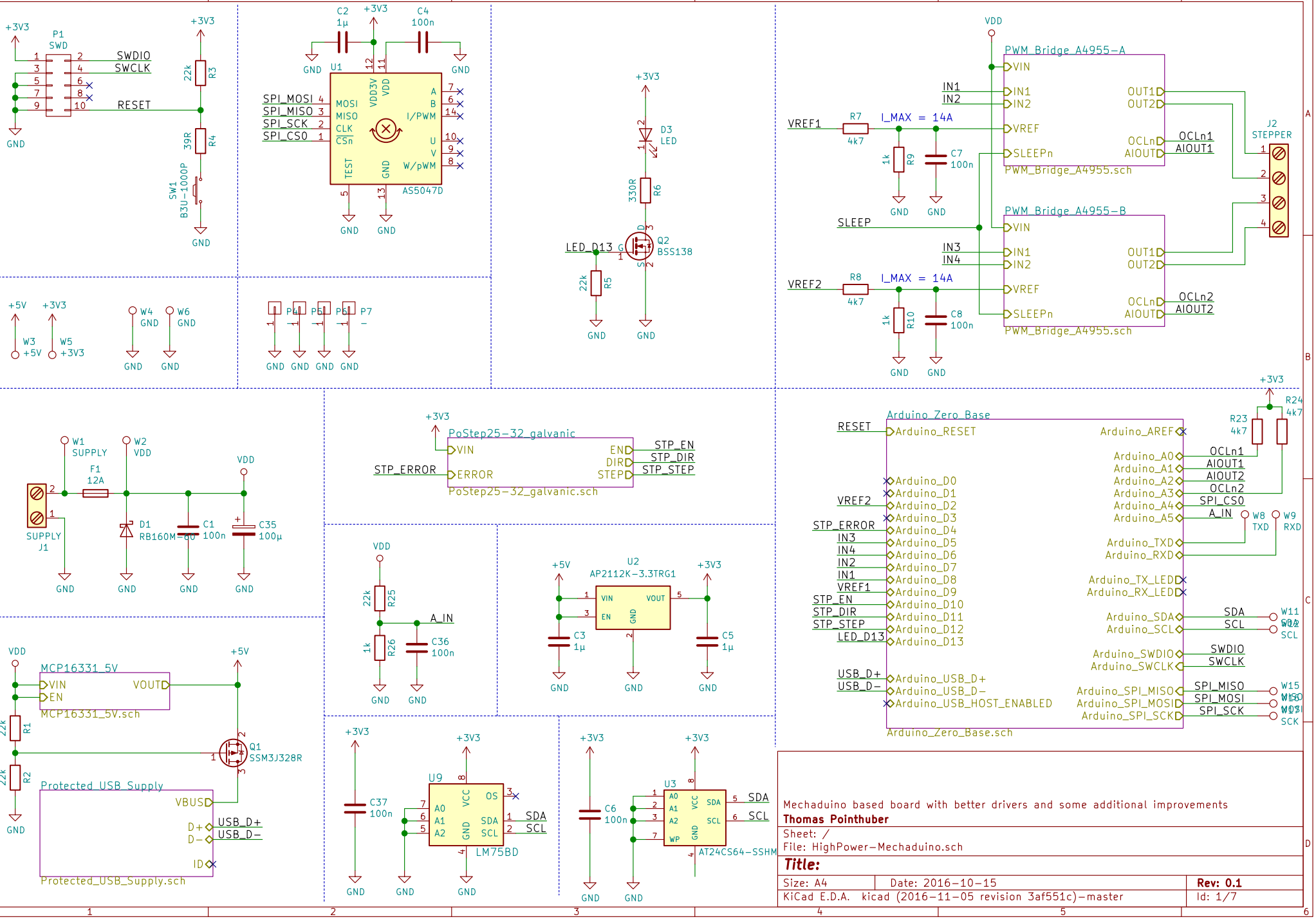
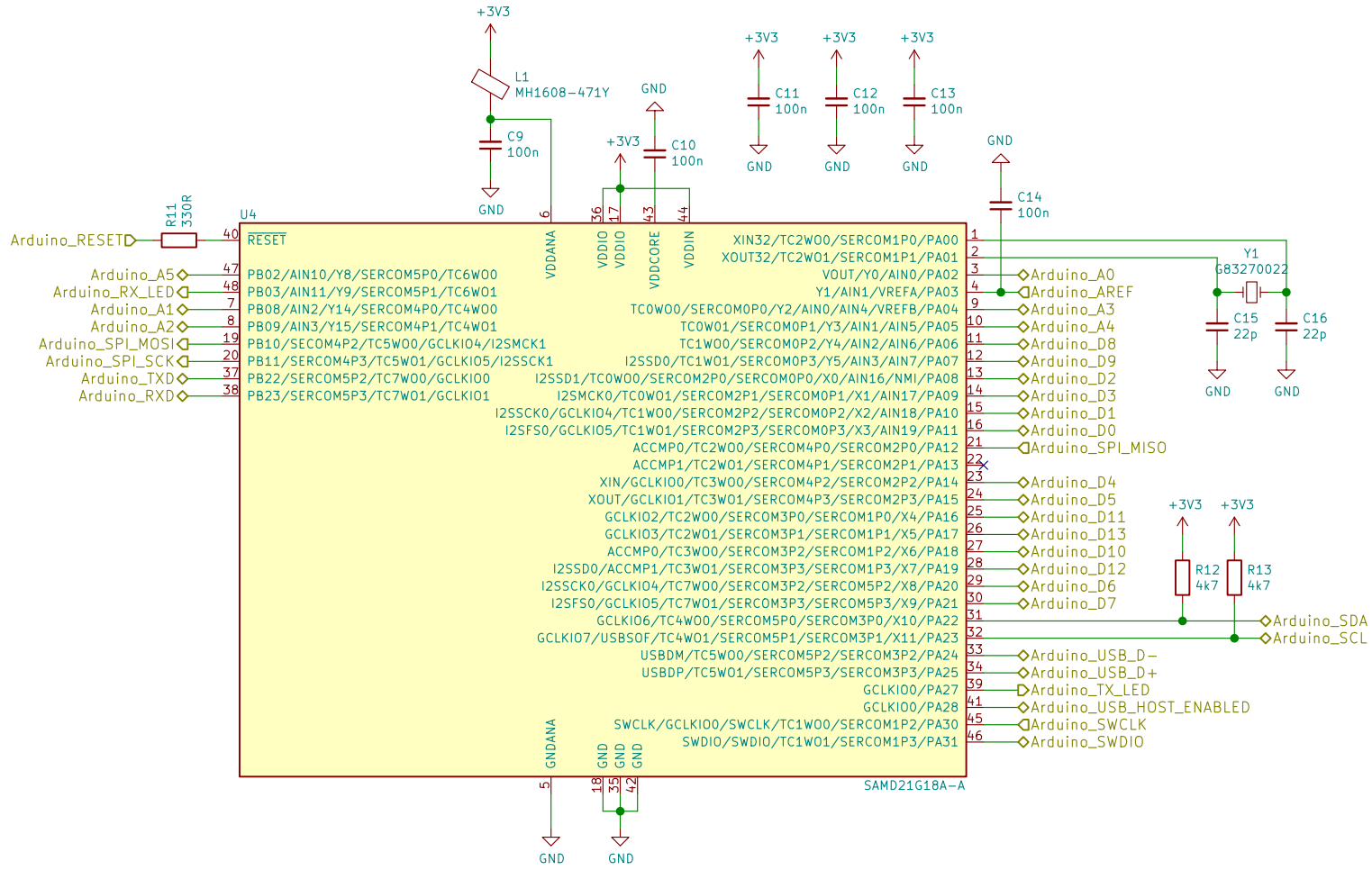

P1
SWD
SWDIO
SWCLK
RESET
R3
22k
R4
39R
SW1
B3U-1000P
C2
1µ
C4
100n
U1
SPI_MOSI
SPI_MISO
SPI_SCK
SPI_CS0
MOSI
MISO
CLK
CSn
VDD3V
VDD
I/PWM
W/pWM
TEST
AS5047D
D3
LED
330R
R6
Q2
BSS138
LED_D13
R5
22k
PWM_Bridge_A4955-A
PWM_Bridge_A4955-B
PWM_Bridge_A4955.sch
VIN
IN1
IN2
VREF
SLEEPn
OUT1
OUT2
OCLn
AIOUT
VREF1
VREF2
R7
R8
4k7
I_MAX = 14A
R9
R10
1k
C7
C8
100n
SLEEP
IN3
IN4
OCLn1
OCLn2
AIOUT1
AIOUT2
J2
STEPPER
W3
+5V
W5
+3V3
W4
W6
P5
P6
P7
W1
SUPPLY
W2
VDD
F1
12A
SUPPLY
J1
D1
RB160M-60
C1
100n
C35
100µ
PoStep25-32_galvanic
PoStep25-32_galvanic.sch
STP_ERROR
STP_EN
STP_DIR
STP_STEP
ERROR
EN
DIR
STEP
R25
22k
R26
1k
A_IN
C36
100n
U2
AP2112K-3.3TRG1
VIN
VOUT
EN
GND
C3
1µ
C5
1µ
MCP16331_5V
MCP16331_5V.sch
R1
R2
Q1
SSM3J328R
Protected_USB_Supply
Protected_USB_Supply.sch
VBUS
D+
D-
ID
USB_D+
USB_D-
U9
LM75BD
C37
100n
U3
AT24CS64-SSHM
C6
100n
A0
A1
A2
WP
SDA
SCL
Arduino_Zero_Base
Arduino_Zero_Base.sch
Arduino_RESET
Arduino_AREF
Arduino_D0
Arduino_D1
Arduino_D2
Arduino_D3
Arduino_D4
Arduino_D5
Arduino_D6
Arduino_D7
Arduino_D8
Arduino_D9
Arduino_D10
Arduino_D11
Arduino_D12
Arduino_D13
Arduino_USB_D+
Arduino_USB_D-
Arduino_USB_HOST_ENABLED
Arduino_A0
Arduino_A1
Arduino_A2
Arduino_A3
Arduino_A4
Arduino_A5
Arduino_TXD
Arduino_RXD
Arduino_TX_LED
Arduino_RX_LED
Arduino_SDA
Arduino_SCL
Arduino_SWDIO
Arduino_SWCLK
Arduino_SPI_MISO
Arduino_SPI_MOSI
Arduino_SPI_SCK
R23
4k7
R24
4k7
W8
TXD
W9
RXD
W11
W15
Mechaduino based board with better drivers and some additional improvements
Thomas Pointhuber
Sheet: /
File: HighPower-Mechaduino.sch
Title:
Size: A4
Date: 2016-10-15
Rev: 0.1
KiCad E.D.A. kicad (2016-11-05 revision 3af551c)-master
Id: 1/7




Minimal Schematic to create an Arduino Zero compatible board

**Thomas Pointhuber**

Sheet: /Arduino_Zero_Base/
File: Arduino_Zero_Base.sch

**Title: Arduino Zero base schematic**

| Size: A4 | Date: 2016-10-15 | **Rev: 0.1** |
|---|---|---|
| KiCad E.D.A. kicad (2016-11-05 revision 3af551c)-master | | Id: 2/7 |

## CALCULATIONS

### ISET

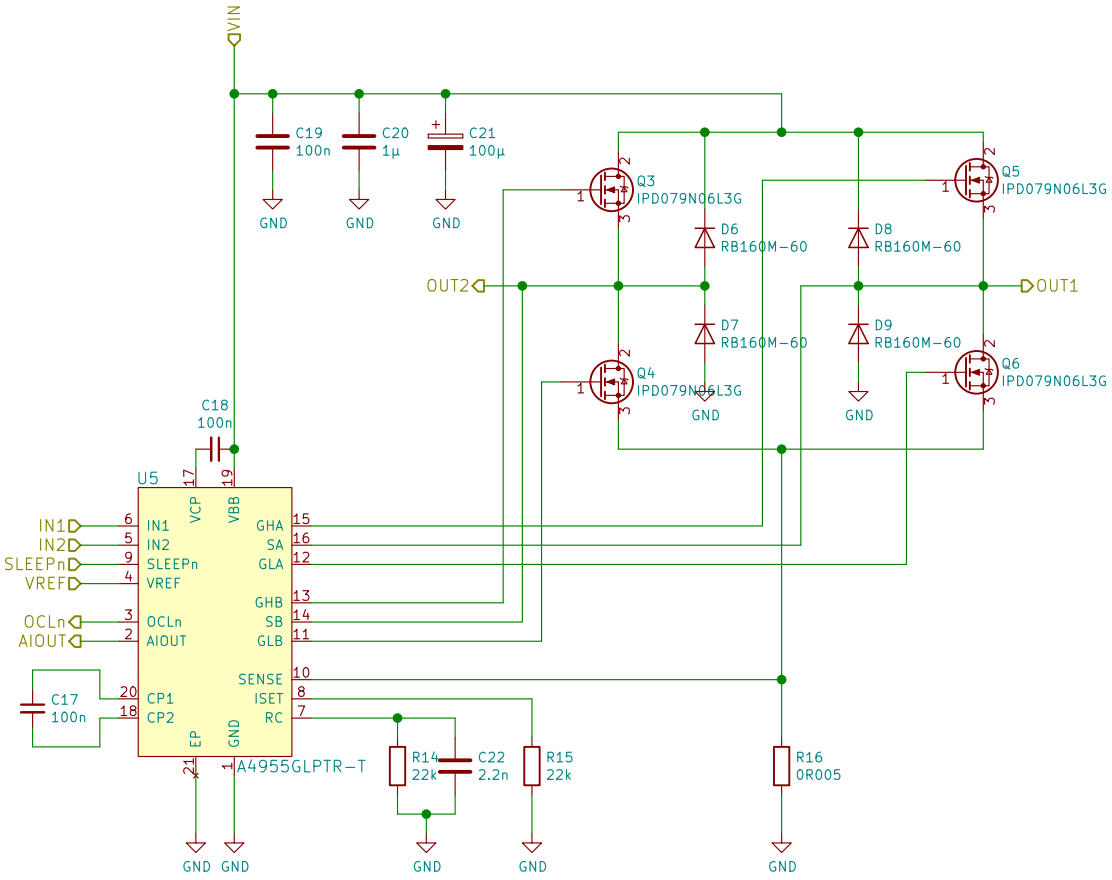
I_GATE_HS = 42.8mA
I_GATE_LS = 80.7mA

### RC

T_OFF = 49.4µs
T_BLANK = 6.7µs

### Current Limiter

I_MAX = 10A
VREF_MAX = 0.5V




| | |
|---|---|
| Thomas Pointhuber | |
| Sheet: /PWM_Bridge_A4955-A/ | |
| File: PWM_Bridge_A4955.sch | |
| **Title: A4955 PWM Bridge** | |
| Size: A4 | Date: 2016-10-22 |
| KiCad E.D.A. kicad (2016-11-05 revision 3af551c)-master | Id: 3/7 |

**Rev: 0.1**

## CALCULATIONS

### ISET

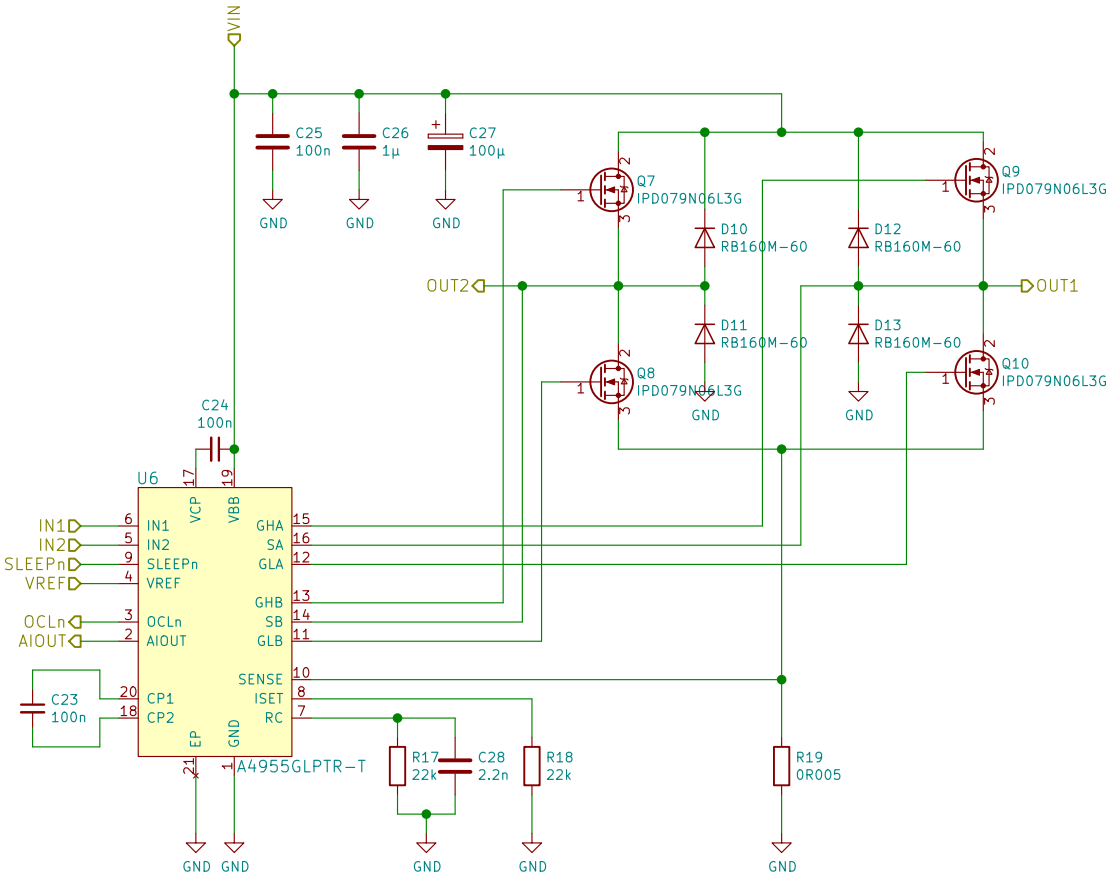
I_GATE_HS = 42.8mA
I_GATE_LS = 80.7mA

### RC

T_OFF = 49.4µs
T_BLANK = 6.7µs

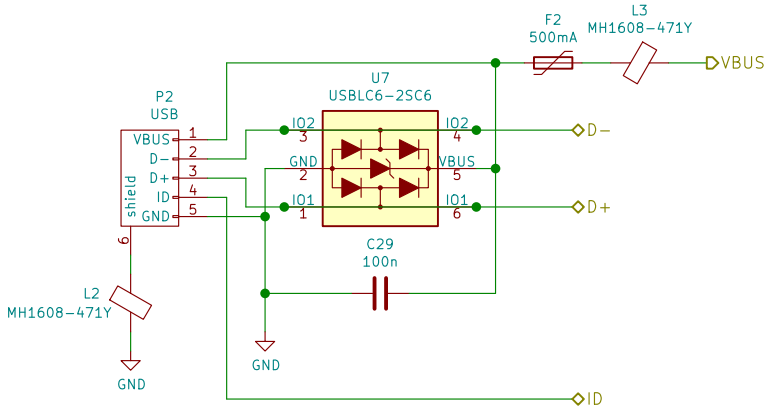
### Current Limiter

I_MAX = 10A
VREF_MAX = 0.5V




| | |
|---|---|
| Thomas Pointhuber | |
| Sheet: /PWM_Bridge_A4955-B/ | |
| File: PWM_Bridge_A4955.sch | |
| **Title: A4955 PWM Bridge** | |
| Size: A4 | Date: 2016-10-22 |
| KiCad E.D.A. kicad (2016-11-05 revision 3af551c)-master | Id: 4/7 |

**Rev: 0.1**



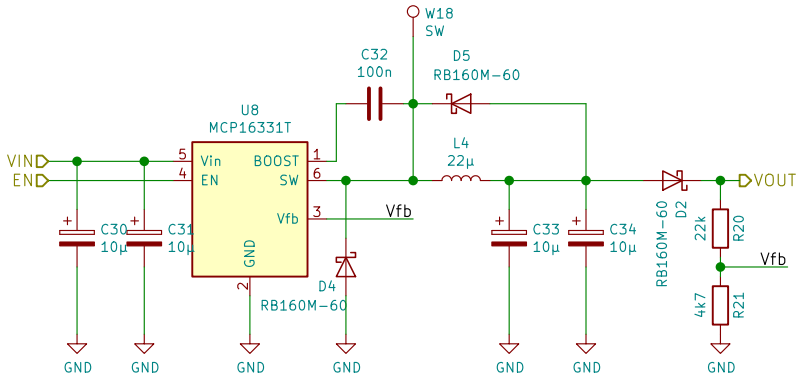

| | | |
|---|---|---|
| **Thomas Pointhuber** | | |
| Sheet: /Protected_USB_Supply/<br>File: Protected_USB_Supply.sch | | |
| ***Title: USB input including protection circuit*** | | |
| Size: A4 | Date: 2016-10-22 | **Rev: 0.1** |
| KiCad E.D.A. kicad (2016-11-05 revision 3af551c)-master | | Id: 5/7 |

## CALCULATIONS

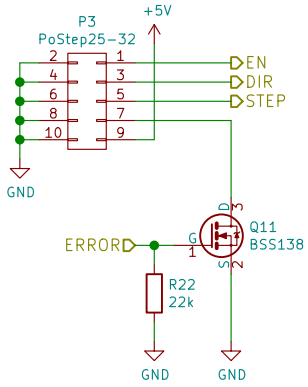
### OUTPUT VOLTAGE

R_TOLERANCE = 5%
U_OUT_MIN = 4.18V
U_OUT_MAX = 4.93V

R_TOLERANCE = 1%
U_OUT_MIN = 4.47V
U_OUT_MAX = 4.62V




| | | |
|---|---|---|
| Thomas Pointhuber | | |
| Sheet: /MCP16331_5V/<br>File: MCP16331_5V.sch | | |
| ***Title: Step Down with input range of 10V–50V*** | | |
| Size: A4 | Date: 2016-10-22 | **Rev: 0.1** |
| KiCad E.D.A. kicad (2016-11-05 revision 3af551c)-master | | Id: 6/7 |




| | | |
|---|---|---|
| **Thomas Pointhuber** | | |
| Sheet: /PoStep25-32_galvanic/<br>File: PoStep25-32_galvanic.sch | | |
| ***Title: ProStep25-32 input including optional galvanic separation*** | | |
| Size: A4 | Date: 2016-10-22 | **Rev: 0.1** |
| KiCad E.D.A. kicad (2016-11-05 revision 3af551c)-master | | Id: 7/7 |