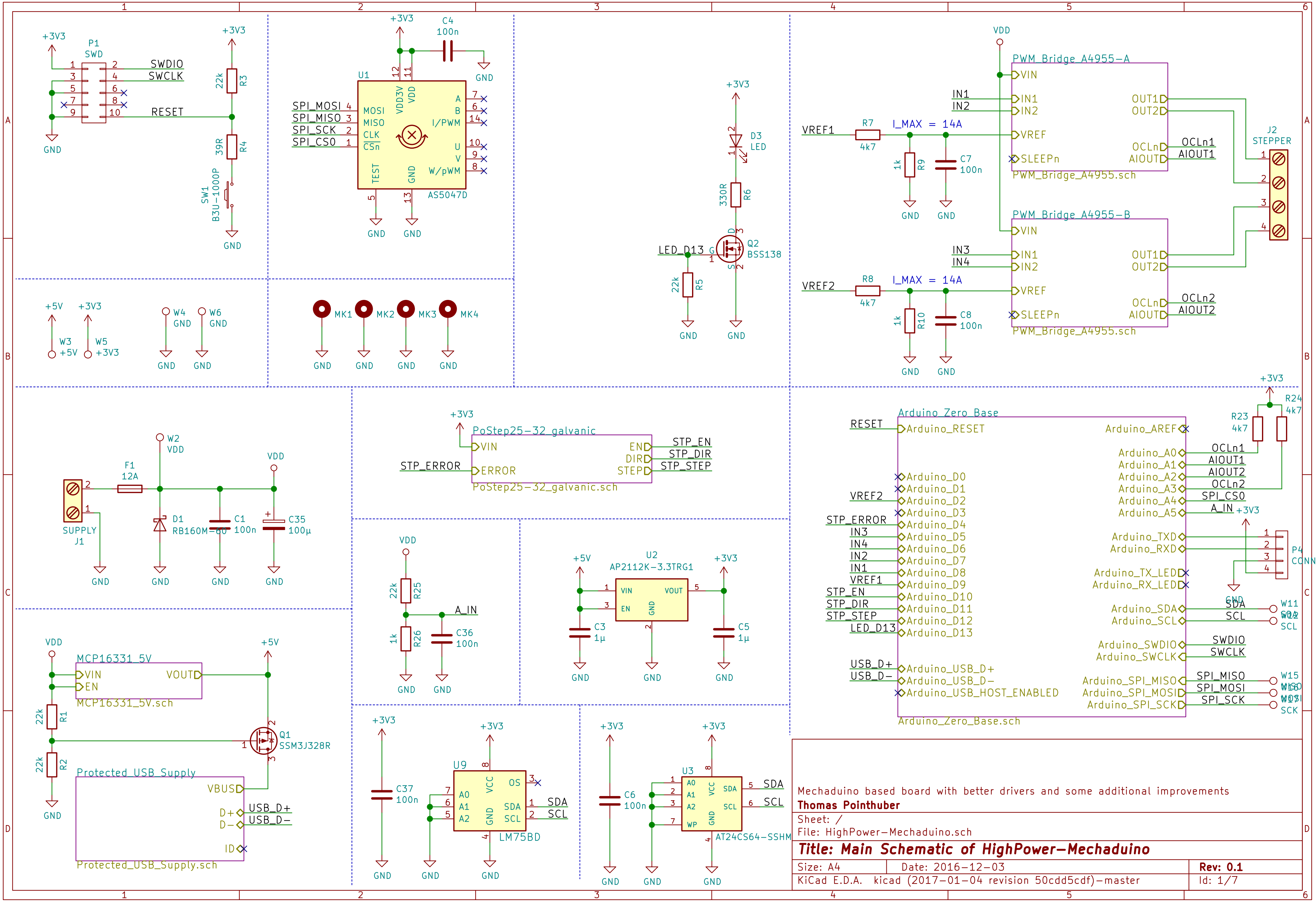


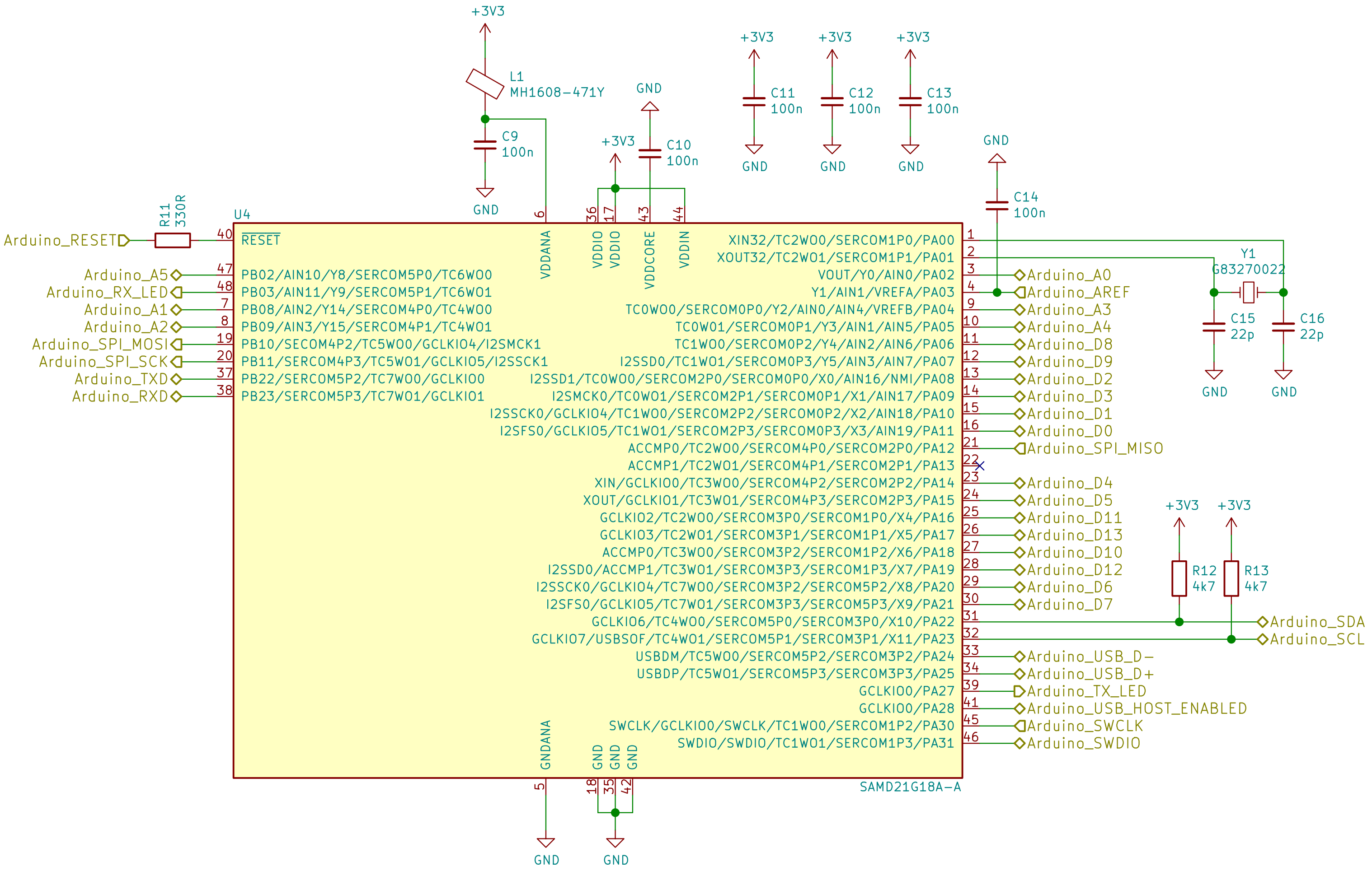
Mechaduino based board with better drivers and some additional improvements

**Thomas Pointhuber**

Sheet: /
File: HighPower-Mechaduino.sch

**Title: Main Schematic of HighPower-Mechaduino**

| Size: A4 | Date: 2016-12-03 | **Rev: 0.1** |
|---|---|---|
| KiCad E.D.A. | kicad (2017-01-04 revision 50cdd5cdf)-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: 2016-12-03
**Rev: 0.1**
KiCad E.D.A. kicad (2017-01-04 revision 50cdd5cdf)-master
Id: 2/7

## CALCULATIONS

### ISET

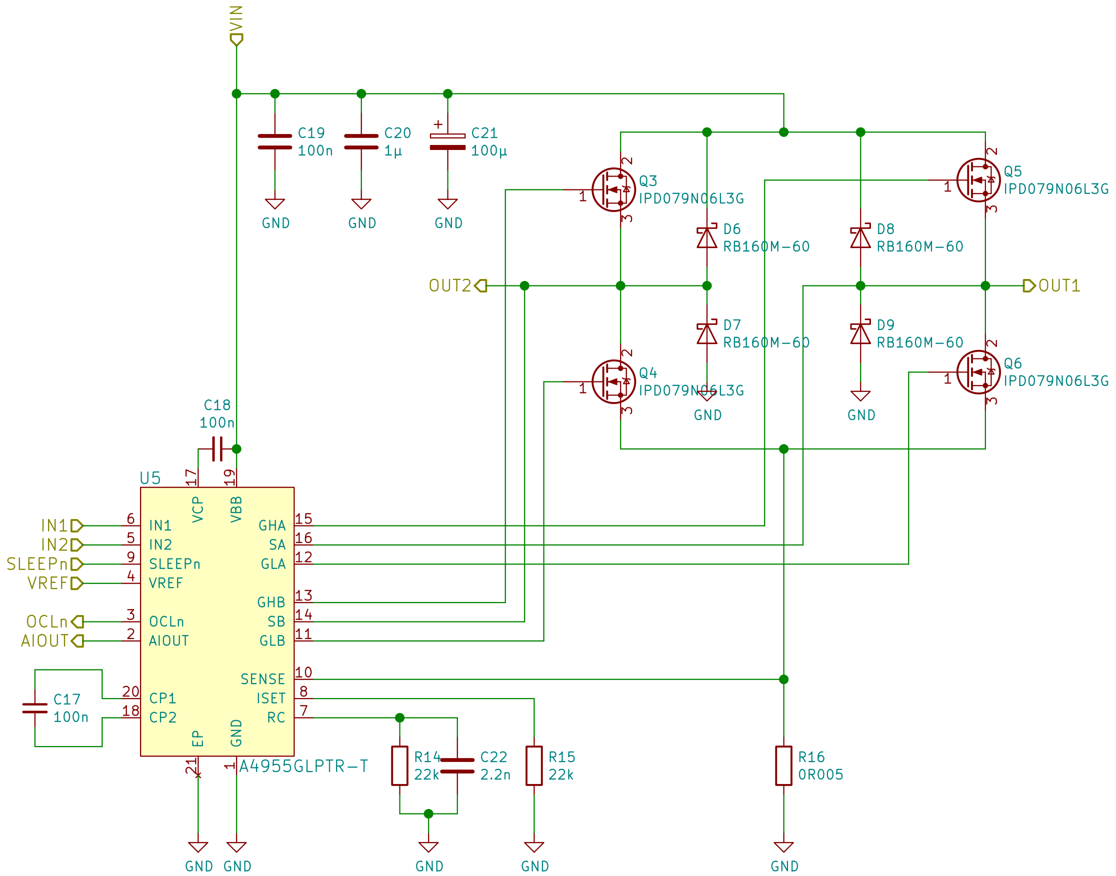
I_GATE_HS = 42.8mA
I_GATE_LS = 80.7mA

### 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: 2016-12-03
**Rev: 0.1**
KiCad E.D.A. kicad (2017-01-04 revision 50cdd5cdf)-master
Id: 3/7

## CALCULATIONS

### ISET

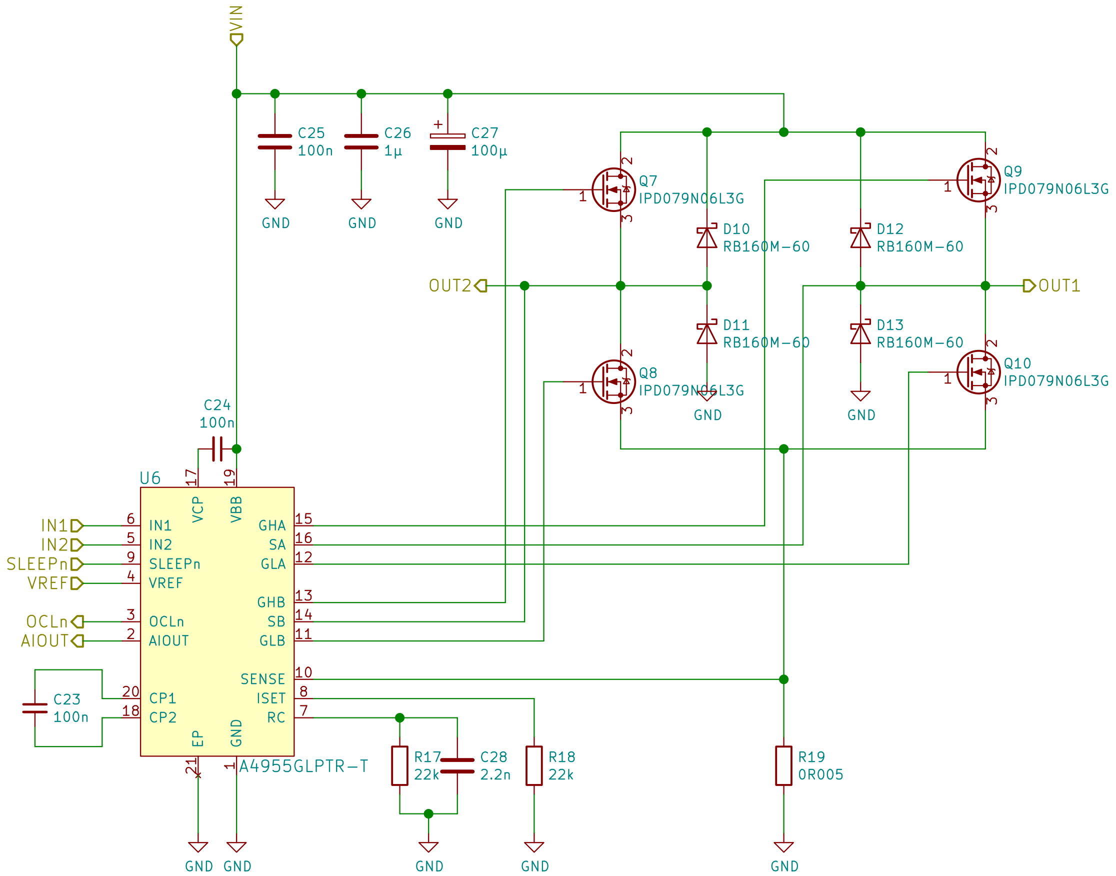
I_GATE_HS = 42.8mA
I_GATE_LS = 80.7mA

### RC

T_OFF = 49,4µs
T_BLANK = 6,7µs

### Current Limiter

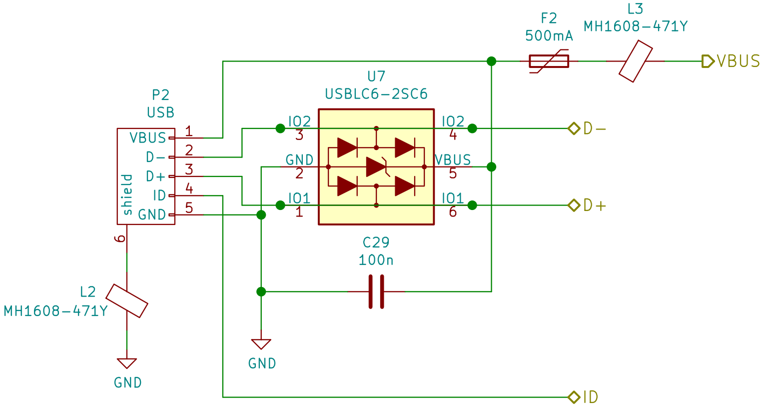
I_MAX = 10A
VREF_MAX = 0.5V



**Thomas Pointhuber**
Sheet: /PWM_Bridge_A4955-B/
File: PWM_Bridge_A4955.sch

**Title: A4955 PWM Bridge**

Size: A4
Date: 2016-12-03
**Rev: 0.1**
KiCad E.D.A. kicad (2017-01-04 revision 50cdd5cdf)-master
Id: 4/7



**Thomas Pointhuber**

Sheet: /Protected_USB_Supply/
File: Protected_USB_Supply.sch

## Title: USB input including protection circuit

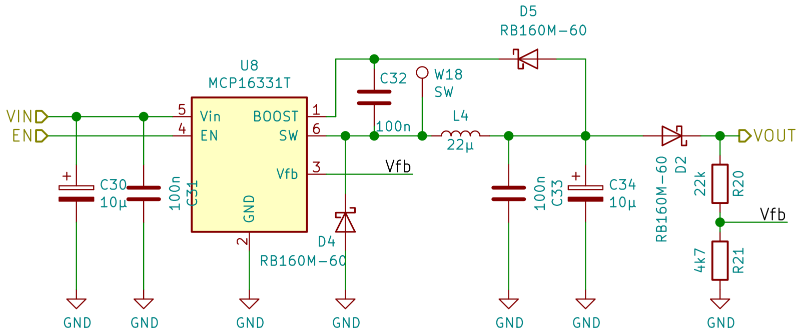
Size: A4
Date: 2016−12−03
**Rev: 0.1**
KiCad E.D.A. kicad (2017−01−04 revision 50cdd5cdf)−master
Id: 5/7

**CALCULATIONS**

**OUTPUT VOLTAGE**

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

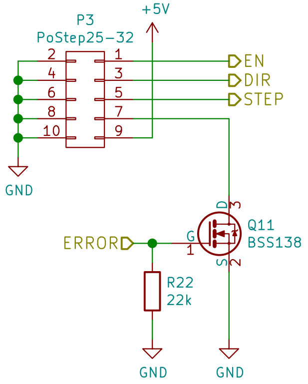
R_TOLERANCE = 1%
U_OUT_MIN = 4.47V
U_OUT_MAX = 4.62V



**Thomas Pointhuber**
Sheet: /MCP16331_5V/
File: MCP16331_5V.sch

***Title: Step Down with input range of 10V–50V***

Size: A4
Date: 2016-12-03
**Rev: 0.1**
KiCad E.D.A. kicad (2017-01-04 revision 50cdd5cdf)-master
Id: 6/7



**Thomas Pointhuber**

Sheet: /PoStep25-32_galvanic/
File: PoStep25-32_galvanic.sch

**Title: ProStep25-32 input including optional galvanic separation**

Size: A4
Date: 2016-12-03
**Rev: 0.1**

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Id: 7/7