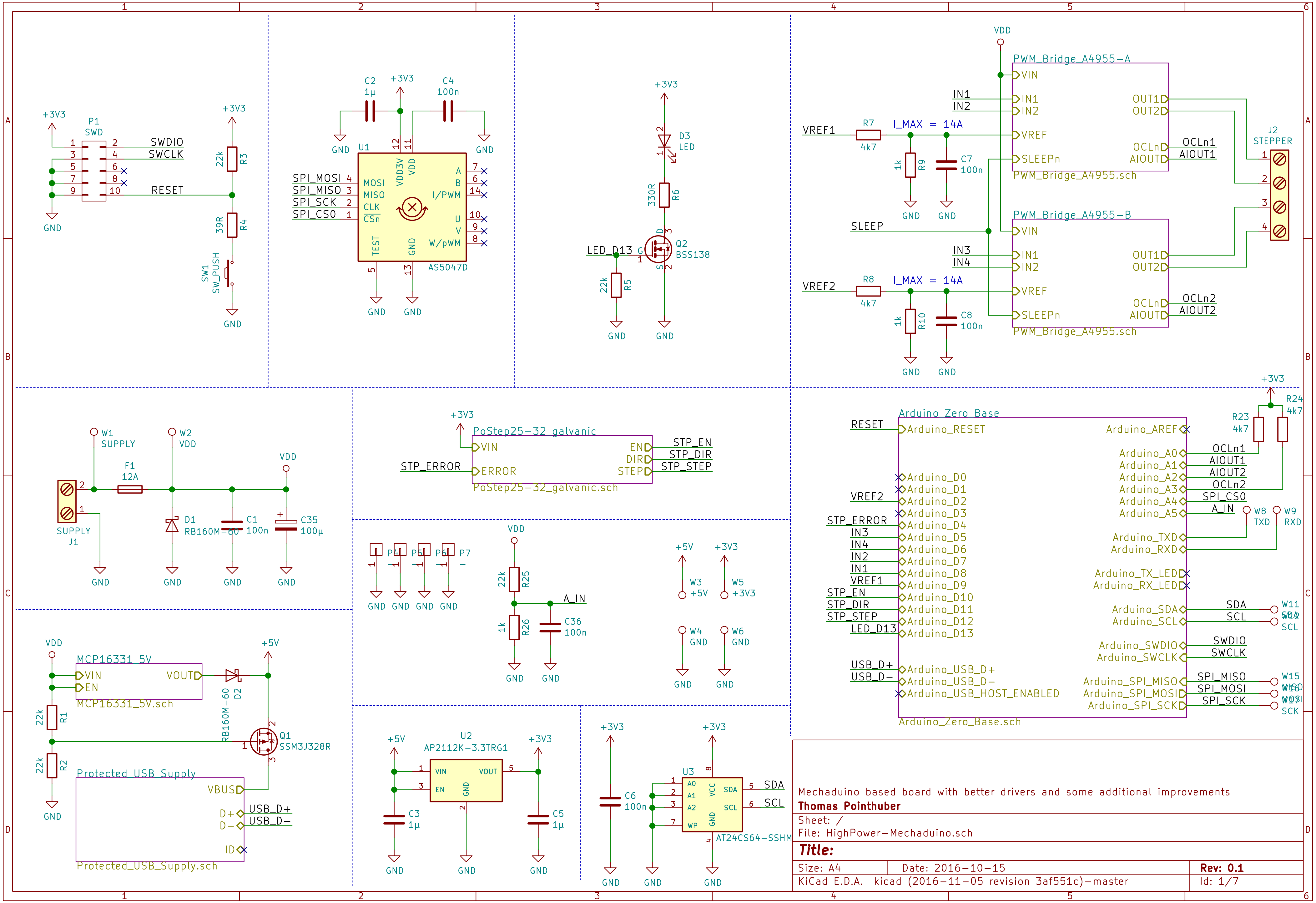
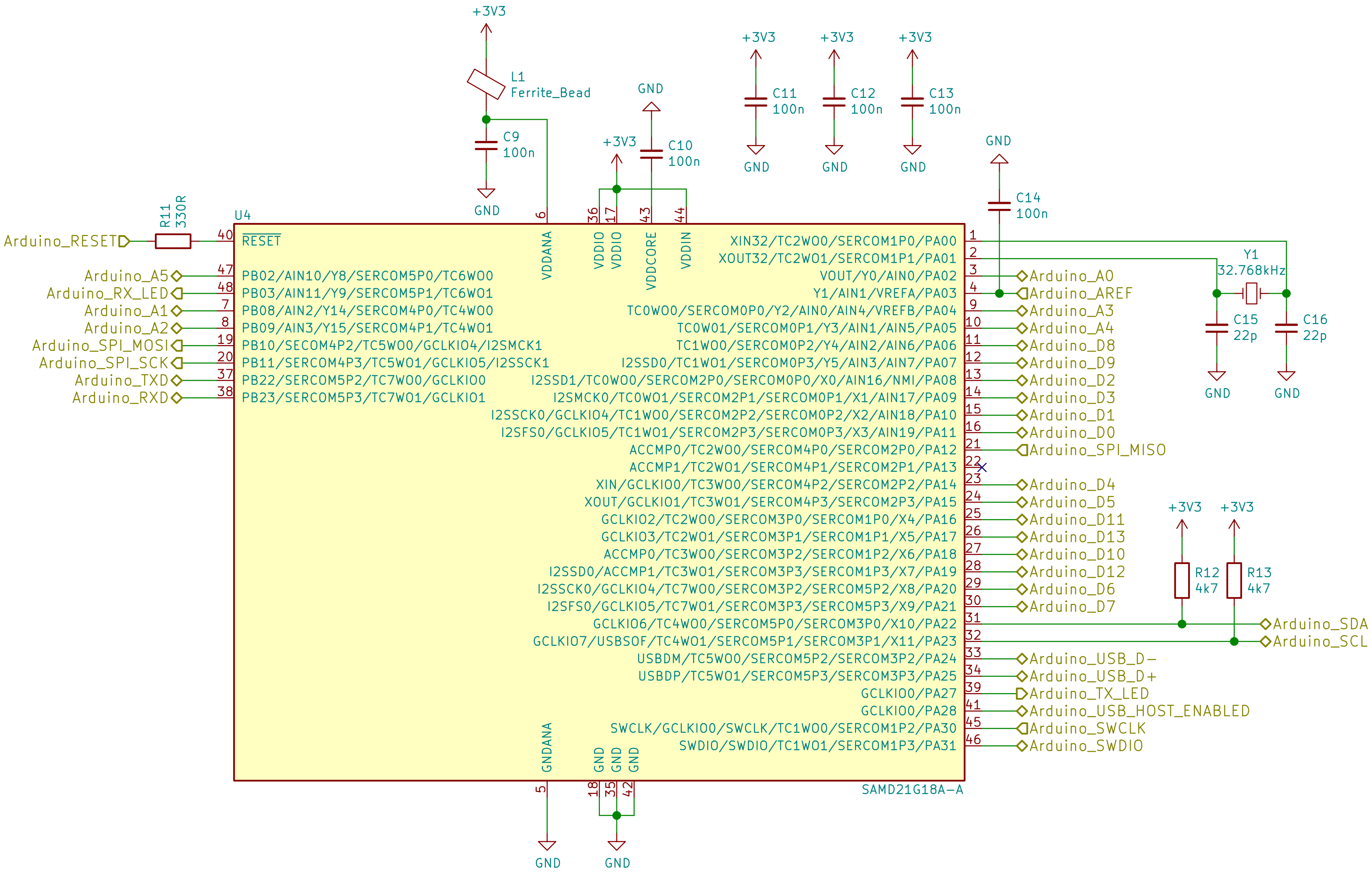


Mechaduino based board with better drivers and some additional improvements
Thomas Pointhuber

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

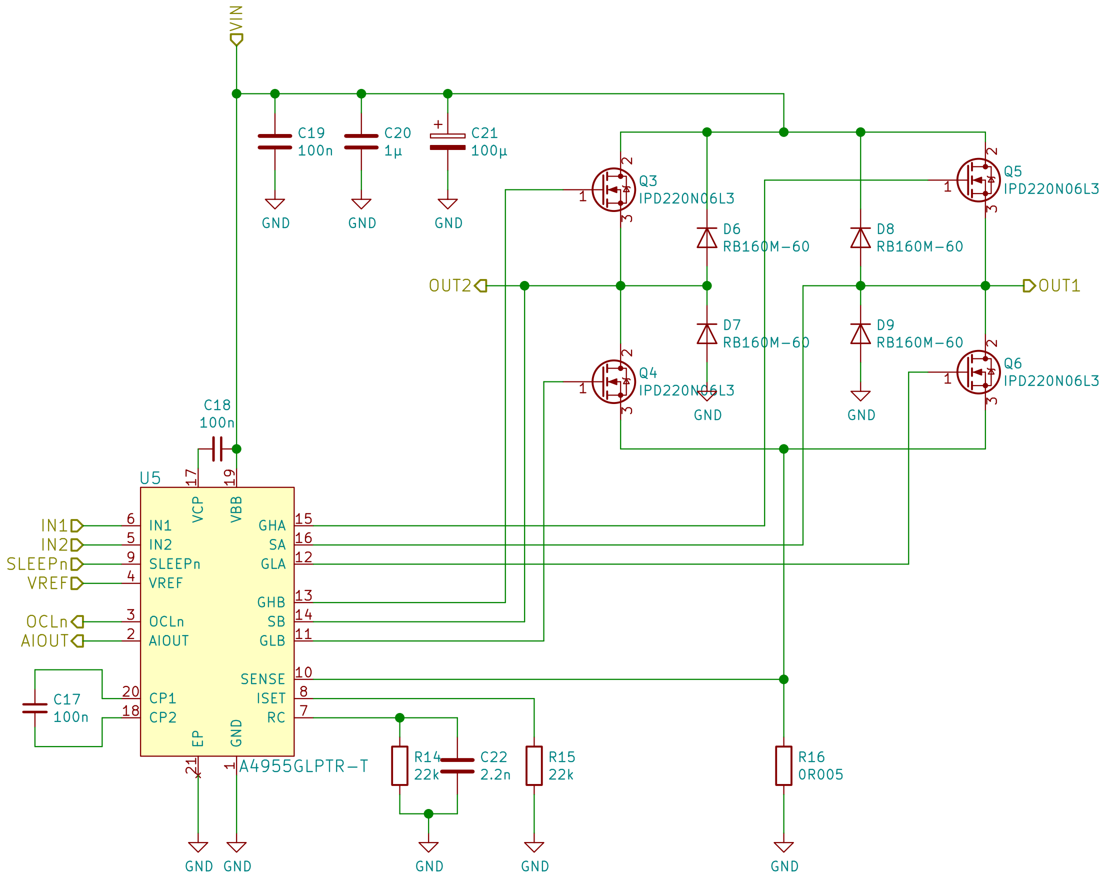
I_GATE_HS = 42.8mA
I_GATE_LS = 80.7mA

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 **Rev: 0.1**
KiCad E.D.A. kicad (2016-11-05 revision 3af551c)-master Id: 3/7

CALCULATIONS

ISET

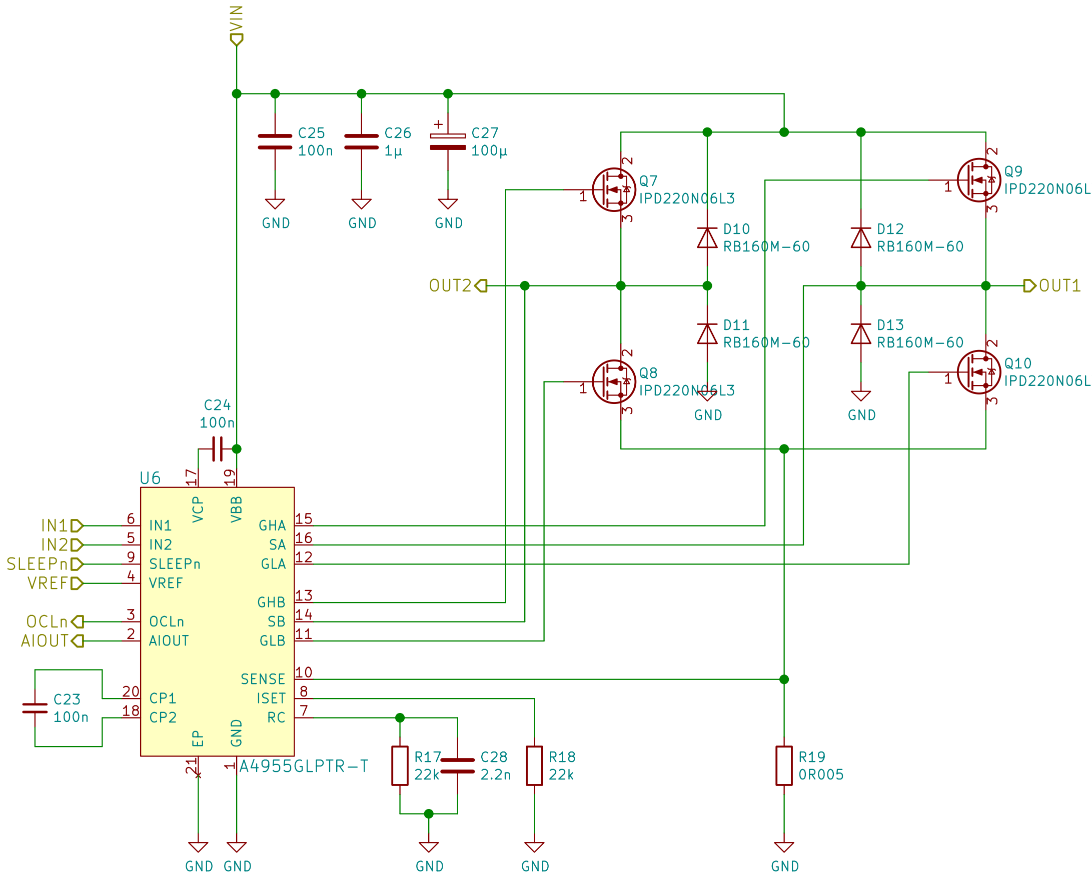
I_GATE_HS = 42.8mA
I_GATE_LS = 80.7mA

RC

T_OFF = 49.4µs
T_BLANK = 6.7µs

Current Limiter

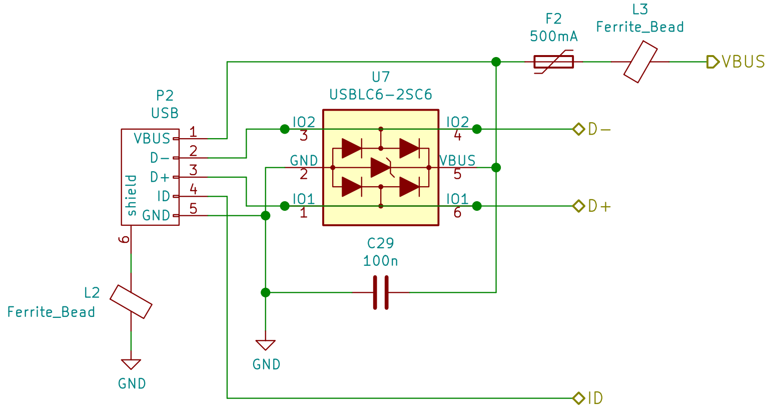
I_MAX = 10A
VREF_MAX = 0.5V



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

Title: A4955 PWM Bridge

Size: A4 Date: 2016-10-22 **Rev: 0.1**
KiCad E.D.A. kicad (2016-11-05 revision 3af551c)-master Id: 4/7



Thomas Pointhuber
Sheet: /Protected_USB_Supply/
File: Protected_USB_Supply.sch

Title: USB input including protection circuit

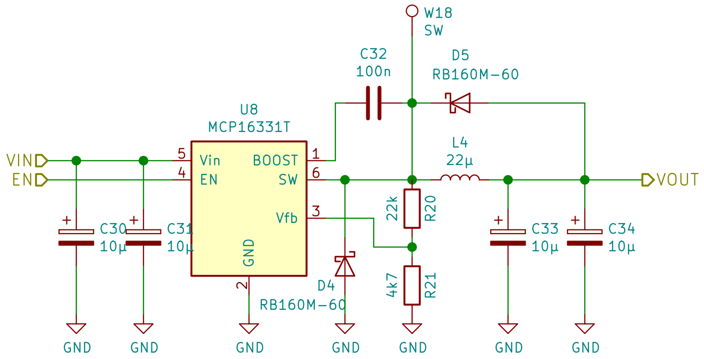
Size: A4
Date: 2016−10−22
Rev: 0.1
KiCad E.D.A. kicad (2016−11−05 revision 3af551c)−master
Id: 5/7

CALCULATIONS

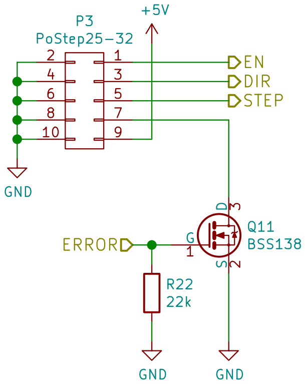
OUTPUT VOLTAGE

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/
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/

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