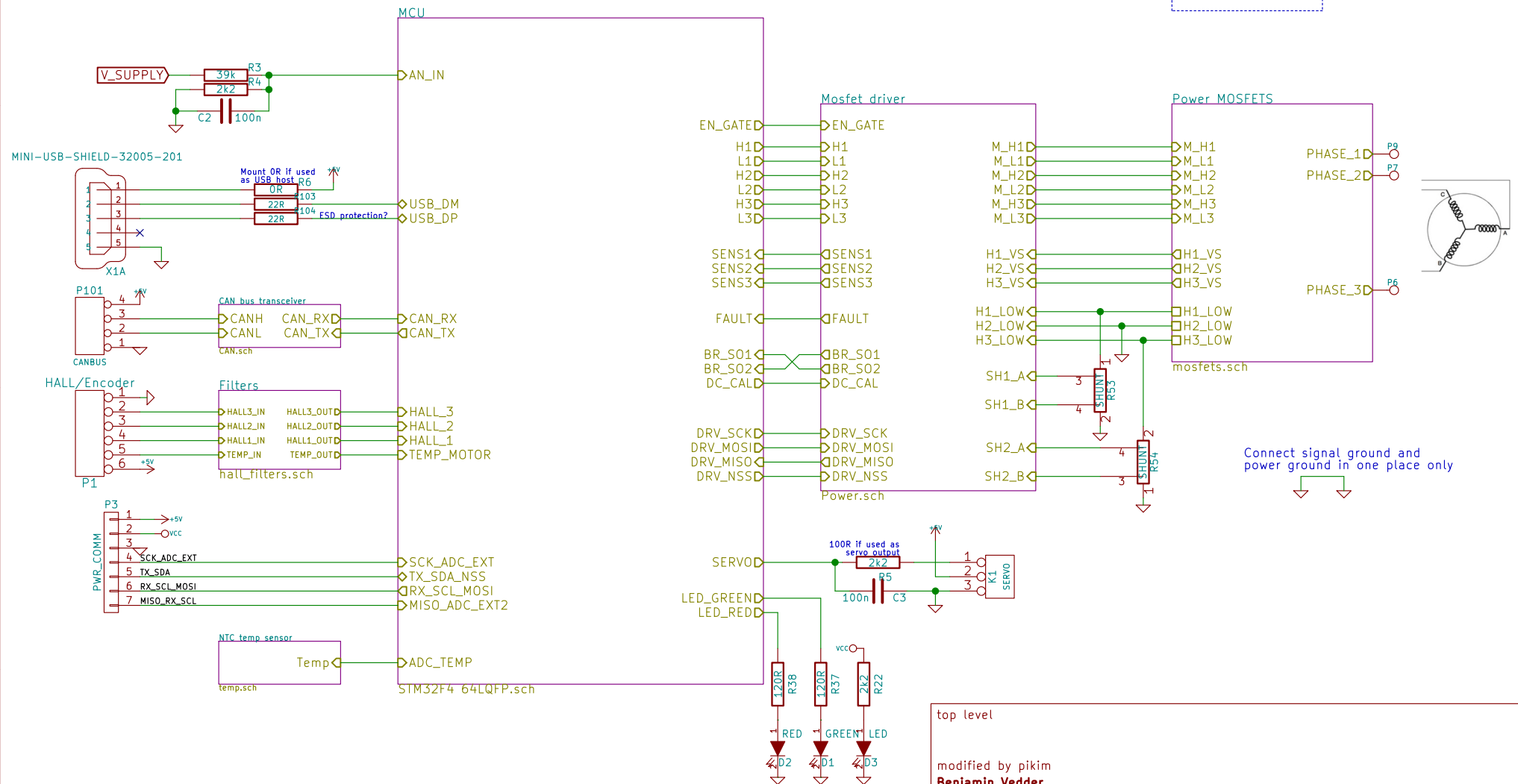
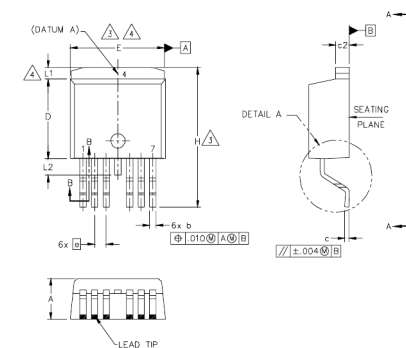
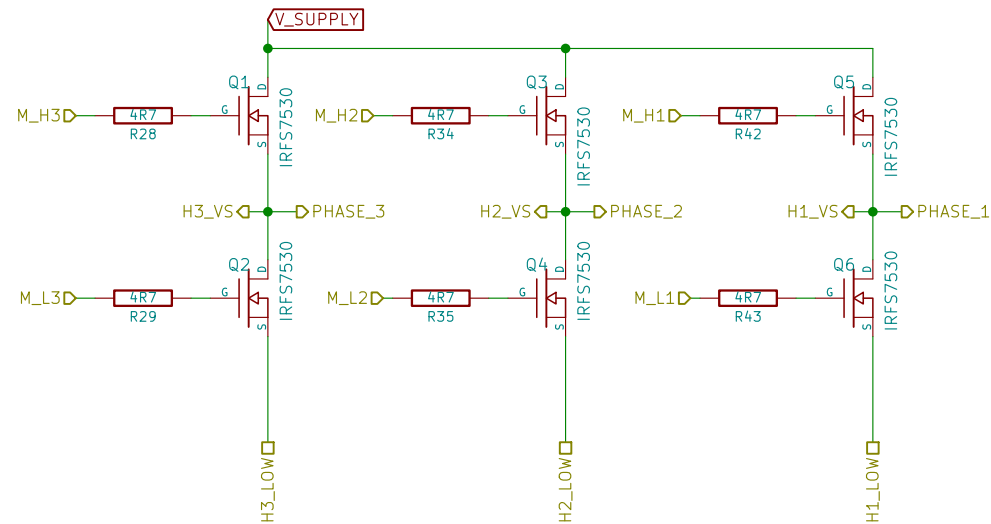


# BLDC motor controller



top level	
modified by pikim	
Benjamin Vedder	
Sheet: /	
File: BLDC_4.sch	
Title: BLDC Driver 4.11p	
Size: A4	Date: 2016-01-06
KiCad E.D.A. kicad (2015-12-03 BZR 6346, Git b04f18b)-product	Rev: A
Id: 1/7	



modified by pikim

**Benjamin Vedder**

Sheet: /Power MOSFETS/

File: mosfets.sch

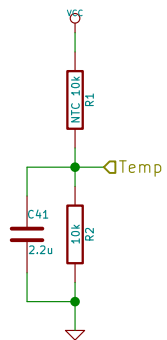
**Title: BLDC Driver 4.11p**

Size: A4 Date: 2016-01-06

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**Rev: A**

Id: 2/7



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**Benjamin Vedder**

Sheet: /NTC temp sensor/

File: temp.sch

**Title: BLDC Driver 4.11p**

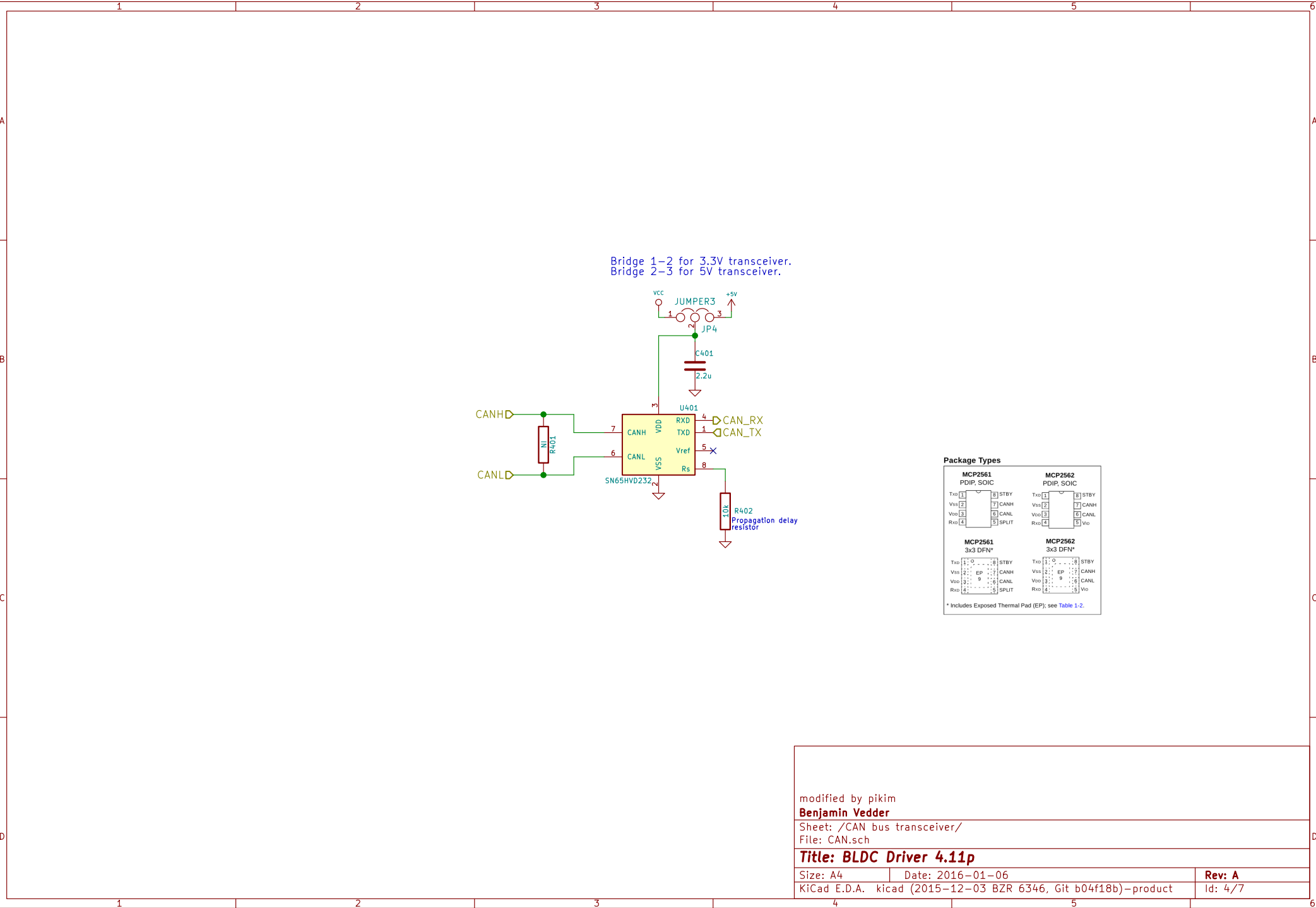
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Date: 2016-01-06

**Rev: A**

KiCad E.D.A. kicad (2015-12-03 BZR 6346, Git b04f18b)-product

Id: 3/7



modified by pikim

**Benjamin Vedder**

Sheet: /CAN bus transceiver/

File: CAN.sch

**Title: BLDC Driver 4.11p**

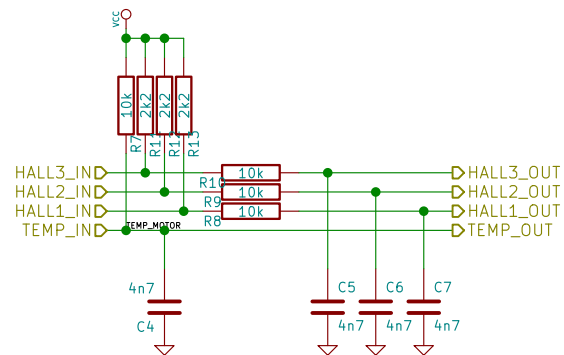
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Date: 2016-01-06

**Rev: A**

KiCad E.D.A. kicad (2015-12-03 BZR 6346, Git b04f18b)-product

Id: 4/7



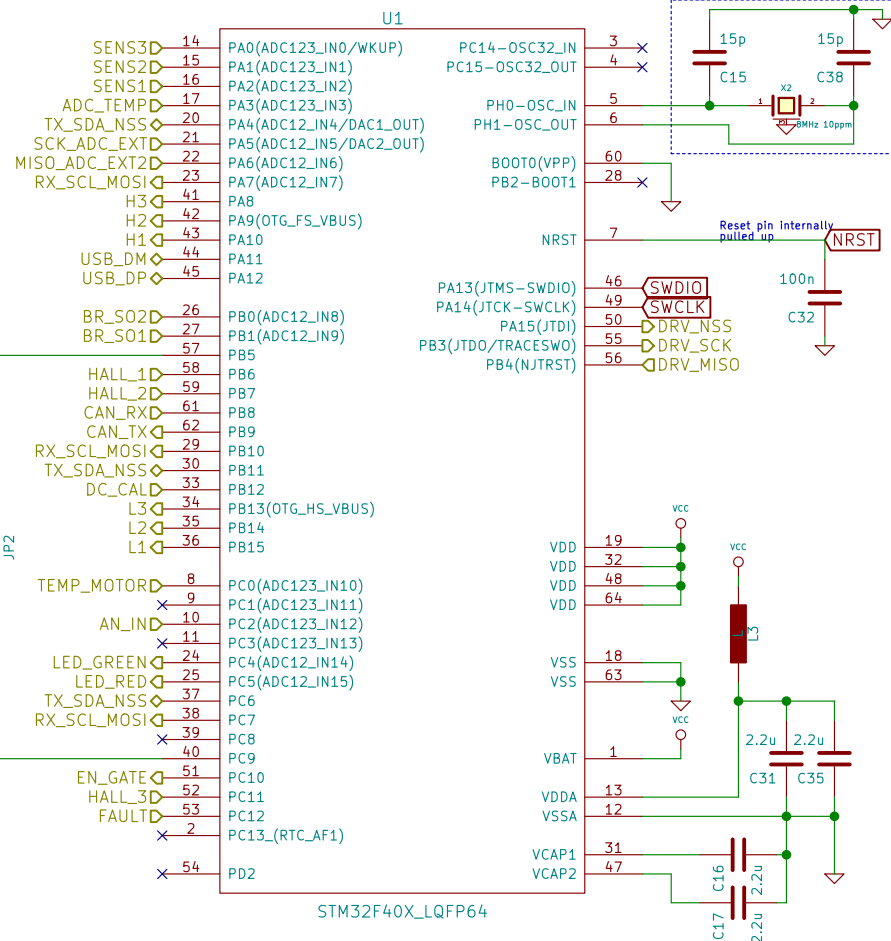
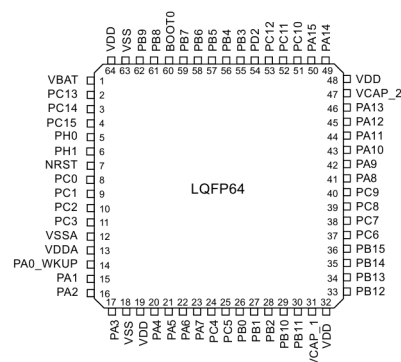
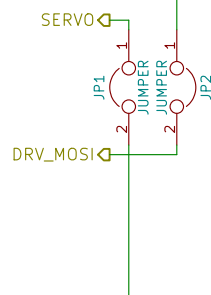
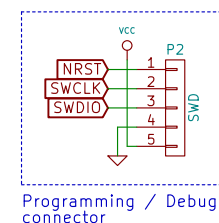
modified by pikim  
**Benjamin Vedder**  
 Sheet: /Filters/  
 File: hall\_filters.sch

**Title: BLDC Driver 4.11p**

Size: A4	Date: 2016-01-06	Rev: A
KiCad E.D.A. kicad (2015-12-03 BZR 6346, Git b04f18b)-product		Id: 5/7



Bypass, place next to VDD pins

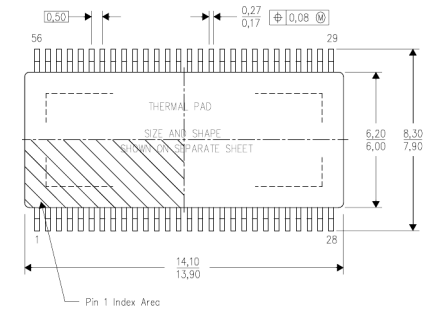
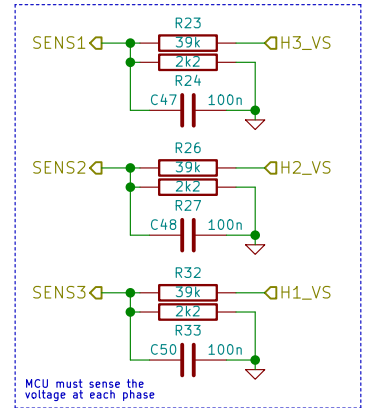
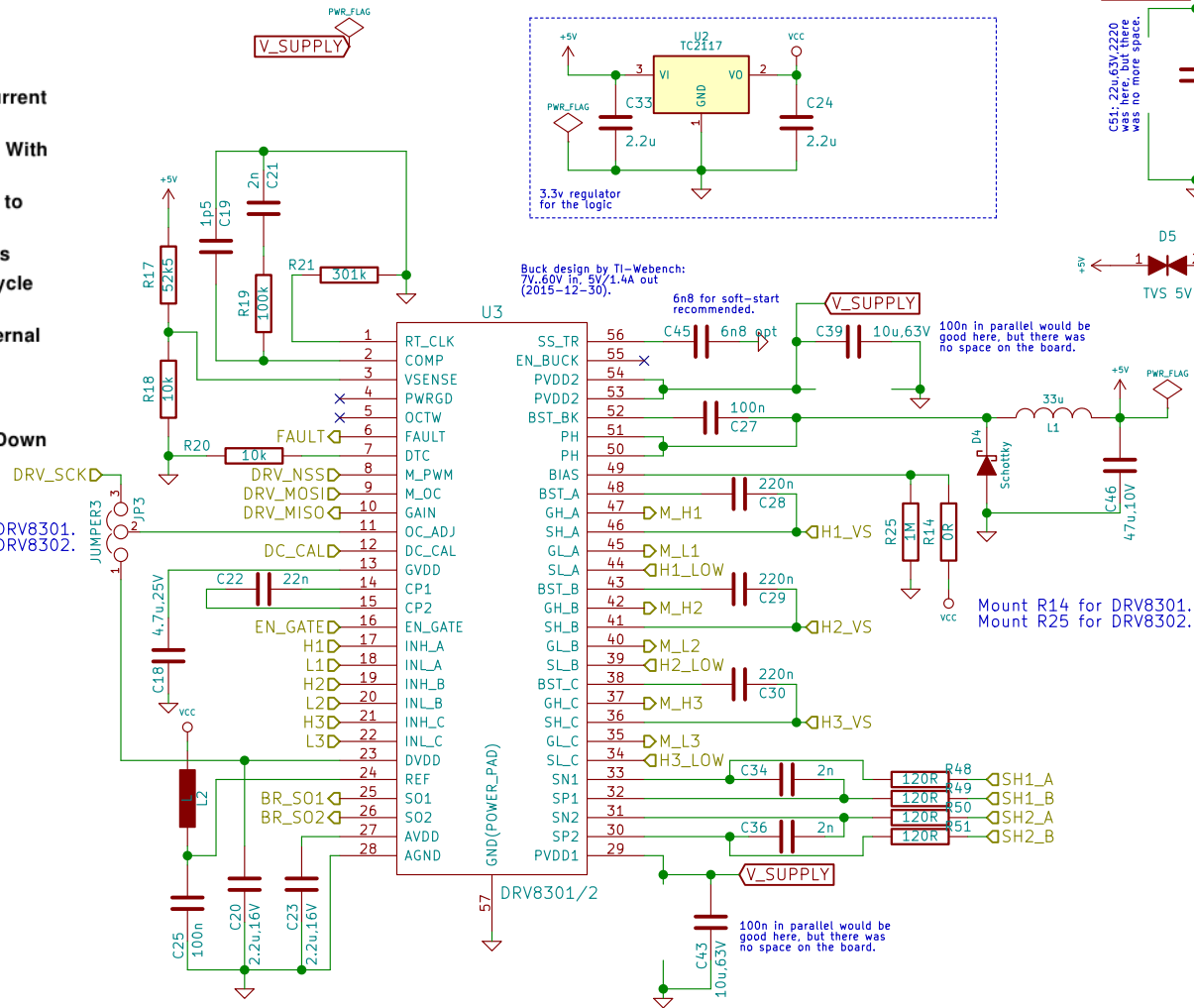


Rev: A
Id: 6/7

## FEATURES

- Operating Supply Voltage 8V–60V
- 2.3A Sink and 1.7A Source Gate Drive Current Capability
- Integrated Dual Shunt Current Amplifiers With Adjustable Gain and Offset
- Integrated Buck Converter to Support up to 1.5A External Load
- Independent Control of 3 or 6 PWM Inputs
- Bootstrap Gate Driver With 100% Duty Cycle Support
- Programmable Dead Time to Protect External FETs from Shoot Through
- Programmable Overcurrent Protection of External MOSFETs
- Thermally Enhanced 56-Pin TSSOP Pad Down DCA Package

Bridge 2–3 for DRV8301.  
Bridge 1–2 for DRV8302.



## RECOMMENDED OPERATING CONDITIONS

	MIN	TYP	MAX	UNITS
PVDD1	DC supply voltage PVDD1 for normal operation	8	60	V
PVDD2	DC supply voltage PVDD2 for buck converter	3.5	60	V
C <sub>AVDD</sub>	External capacitance on AVDD pin (ceramic cap) 20% tolerance	1		µF
C <sub>DVDD</sub>	External capacitance on DVDD pin (ceramic cap) 20% tolerance	1		µF
C <sub>GVDD</sub>	External capacitance on GVDD pin (ceramic cap) 20% tolerance	2.2		µF
C <sub>CP</sub>	Flying cap on charge pump pins (between CP1 and CP2) (ceramic cap) 20% tolerance	22		nF
C <sub>BST</sub>	Bootstrap cap (ceramic cap)	100		nF
I <sub>DD1</sub>	Input current of digital pins when EN_GATE is high	100		µA
I <sub>DD2</sub>	Input current of digital pins when EN_GATE is low	1		µA
C <sub>IN</sub>	Maximum capacitance on digital input pin	10		pF
C <sub>OUT</sub>	Maximum output capacitance on outputs of shunt amplifier	20		pF
R <sub>DT</sub>	Dead time control resistor range. Time range is 50ns (-GND) to 500ns (150kΩ) with a linear approximation.	0	150	kΩ
I <sub>FAULT</sub>	FAULT pin sink current. Open-drain	2		mA
I <sub>OCTW</sub>	OCTW pin sink current. Open-drain	2		mA
V <sub>REF</sub>	External voltage reference voltage for current shunt amplifiers	2	6	V
f <sub>SW</sub>	Operating switching frequency of gate driver	Qg(TOT) = 25 nC or total 30 mA gate drive average current	200	kHz
T <sub>A</sub>	Ambient temperature	-40	125	°C

modified by pikim

**Benjamin Vedder**

Sheet: /Mosfet driver/

File: Power.sch

## Title: BLDC Driver 4.11p

Size: A4 Date: 2016–01–06

KiCad E.D.A. kicad (2015–12–03 BZR 6346, Git b04f18b)–product

Rev: A

Id: 7/7