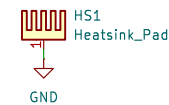
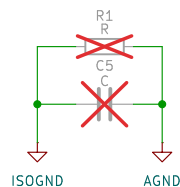
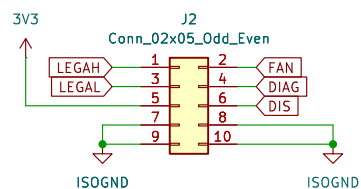
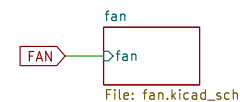
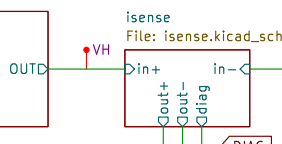
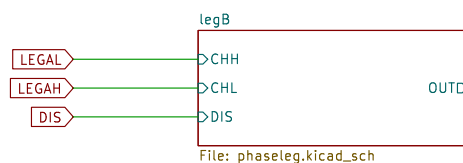
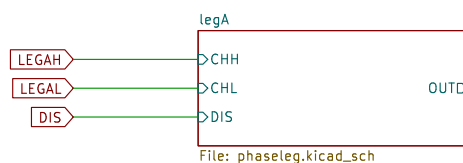


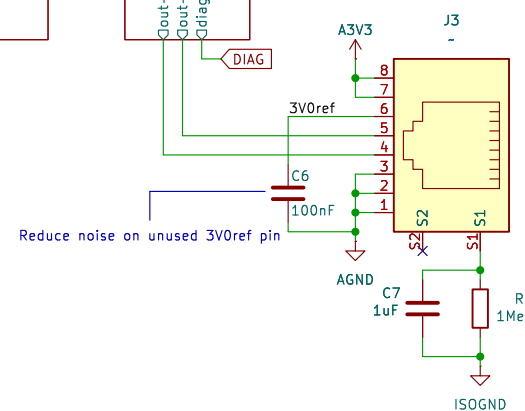
Mechanical Assembly



- S1 Hex Spacer 25mm
- S2 Hex Spacer 25mm
- S3 Hex Spacer 25mm
- S4 Hex Spacer 25mm
- S5 Hex Spacer 25mm
- S6 Hex Spacer 25mm



Optional connection between AGND and ISOGND



Sheet: /
File: mdriver_hw_power.kicad_sch

Title: MDriver2 Power Top

Size: A4 Date: 2025-08-07

KiCad E.D.A. 9.0.3

Rev: 0.1

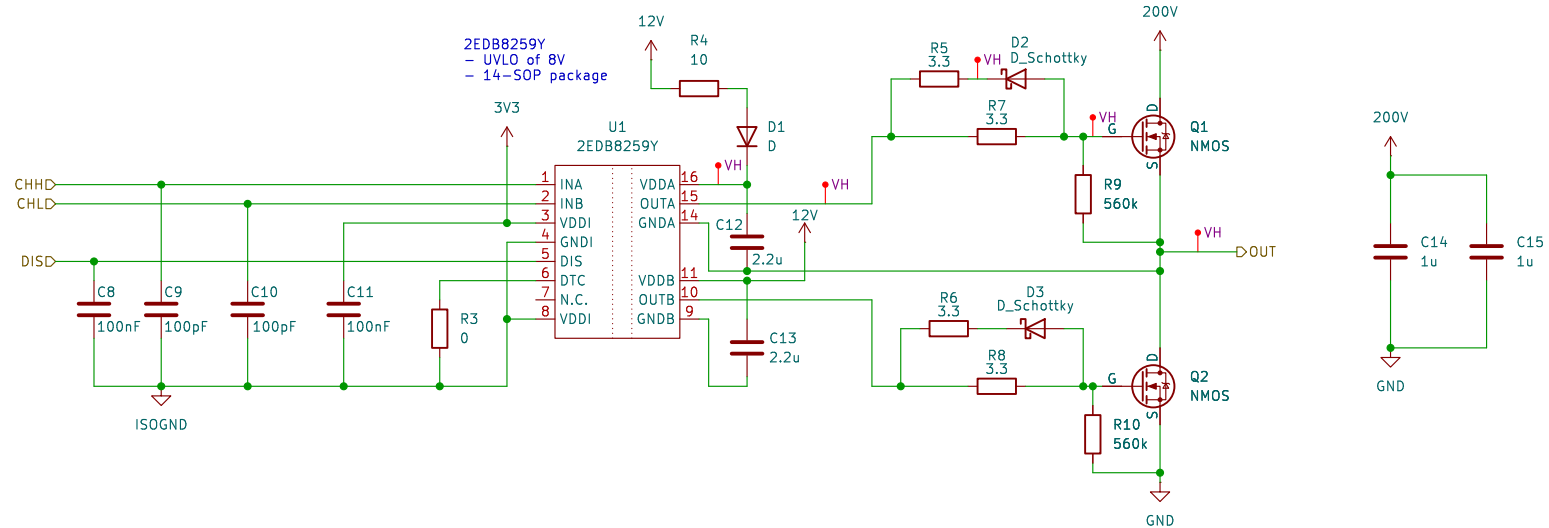
Id: 1/5

Gate charging

- Bypass capacitor charge is around 26uC
- Gate charge of MOSFET is around 0.2uC

Bootstrap circuit

- Inrush current is around 1.7A
- Time constant is 2.2us



Shoot-through Protection (STP) and Dead-Time Control (DTC)

If STP/DTC is high or left open, OUTA and OUTB can overlap (SPT and DTC disabled)

If STP/DTC is connected to GNDI with a resistance RDTC, OUTA and OUTB cannot overlap and a "safe dead-time" can be configured: $tdt [ns] = 10 \times RDTC [k\Omega]$

If STP/DTC is connected to GNDI, OUTA and OUTB cannot overlap (STP only enabled)

Sheet: /legA/
File: phaseleg.kicad_sch

Title: Half bridge leg

Size: A4 Date: 2025-08-07

KiCad E.D.A. 9.0.3

Rev:

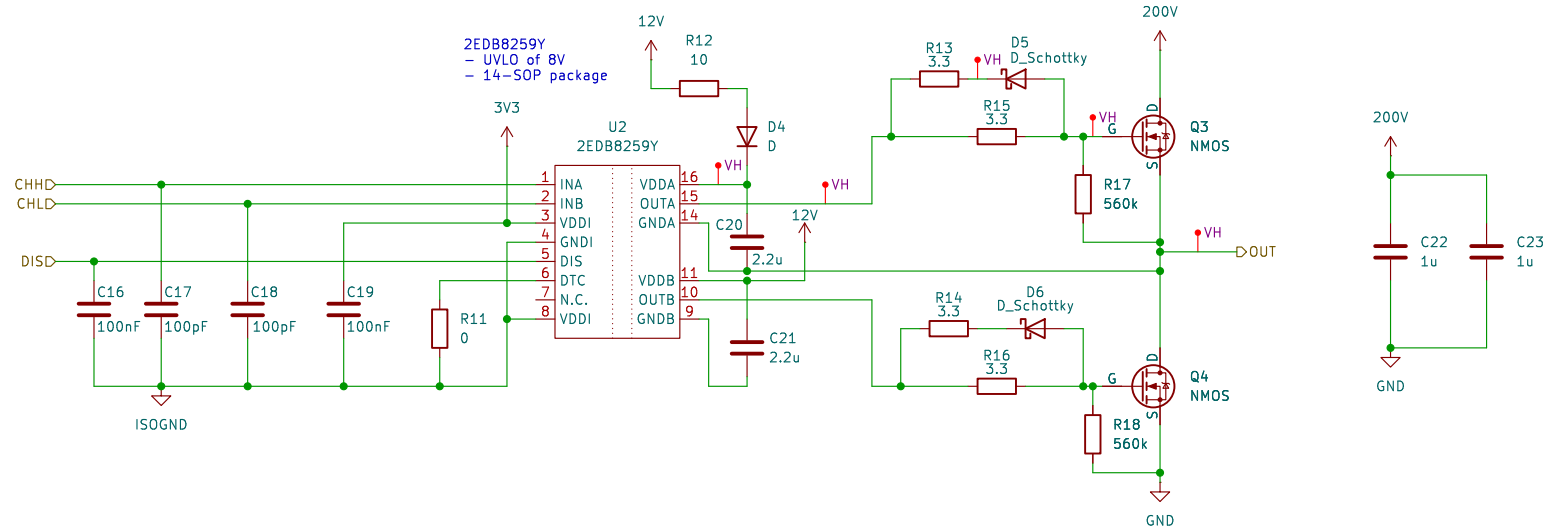
Id: 2/5

Gate charging

- Bypass capacitor charge is around 26uC
- Gate charge of MOSFET is around 0.2uC

Bootstrap circuit

- Inrush current is around 1.7A
- Time constant is 2.2us



Shoot-through Protection (STP) and Dead-Time Control (DTC)

If STP/DTC is high or left open, OUTA and OUTB can overlap (SPT and DTC disabled)

If STP/DTC is connected to GNDI with a resistance RDTC, OUTA and OUTB cannot overlap and a "safe dead-time" can be configured: $tdt [ns] = 10 \times RDTC [k\Omega]$

If STP/DTC is connected to GNDI, OUTA and OUTB cannot overlap (STP only enabled)

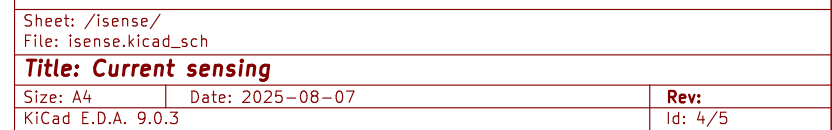
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File: phaseleg.kicad_sch

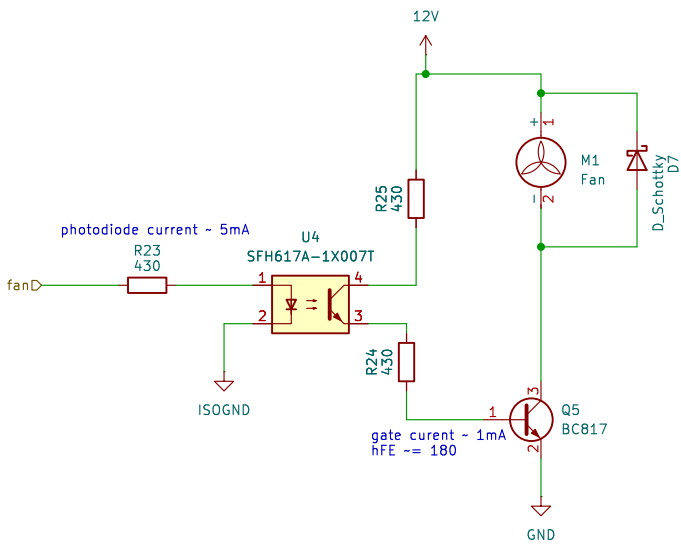
Title: Half bridge leg

Size: A4 Date: 2025-08-07

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Rev:
Id: 3/5





Sheet: /fan/
File: fan.kicad_sch

Title: Cooling Fan Control

Size: A4 Date: 2025-08-07

KiCad E.D.A. 9.0.3

Rev:
Id: 5/5