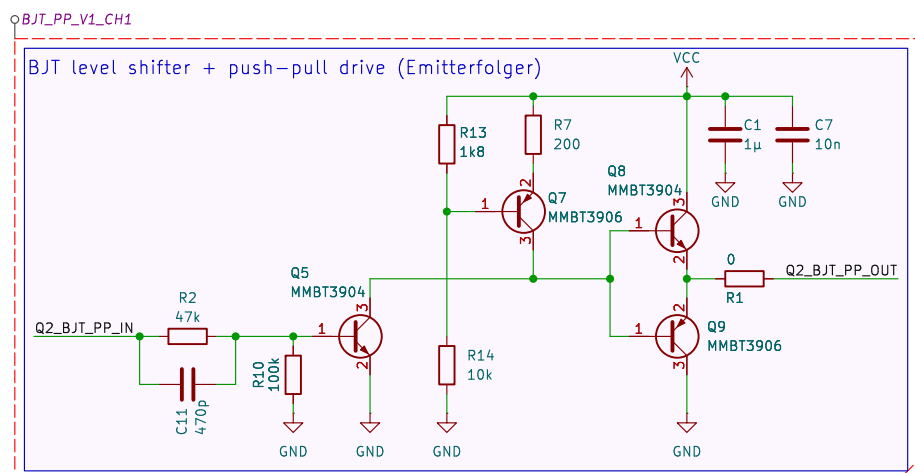
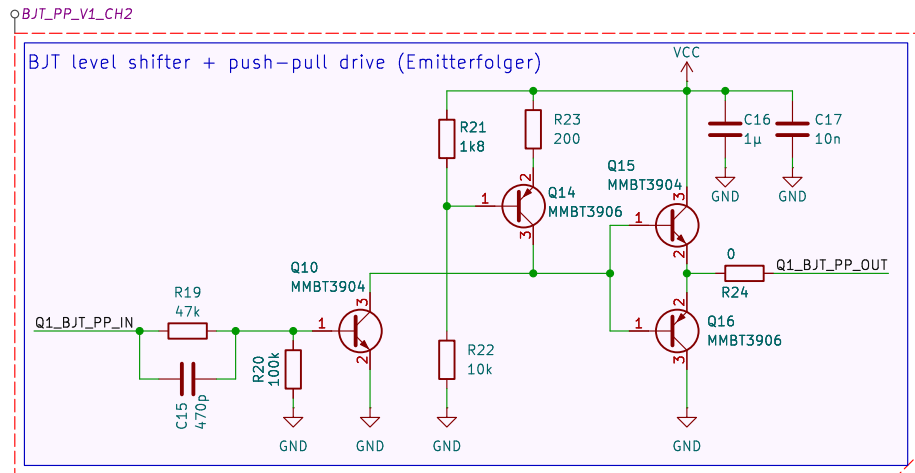
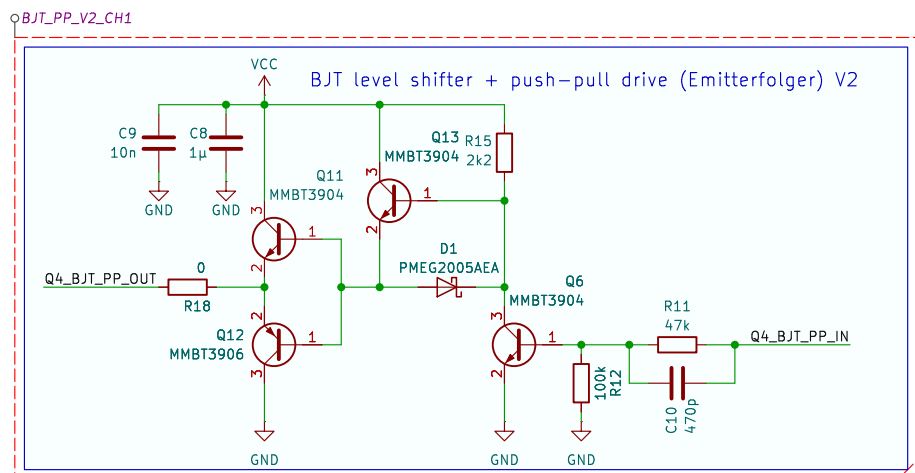
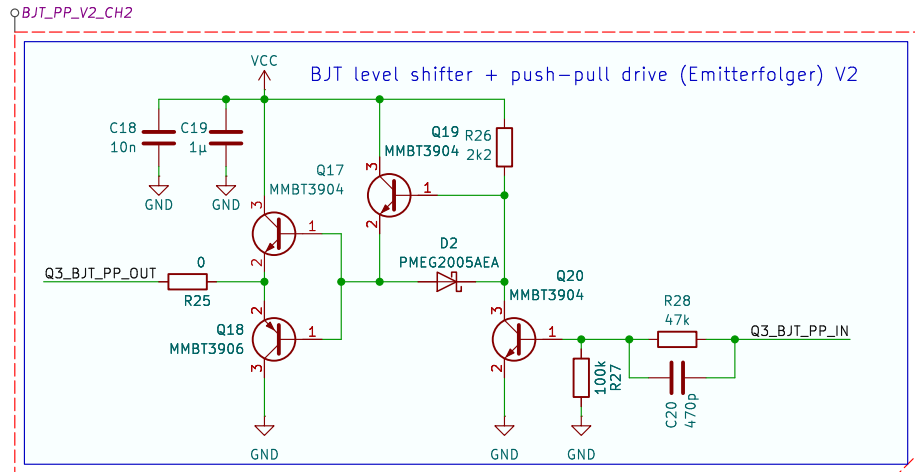
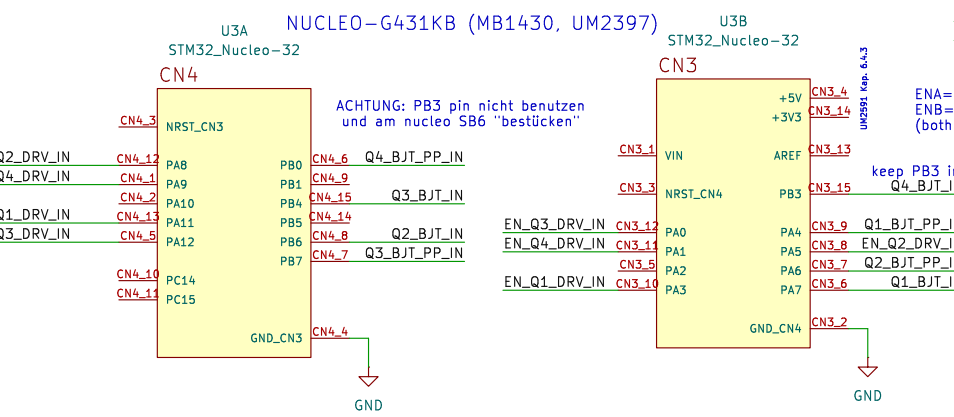
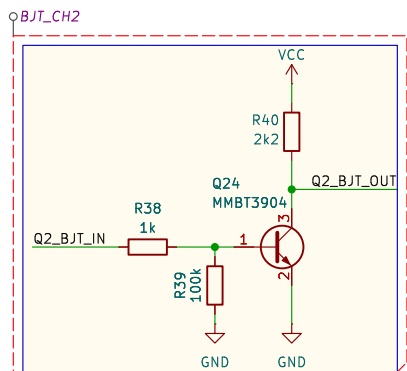
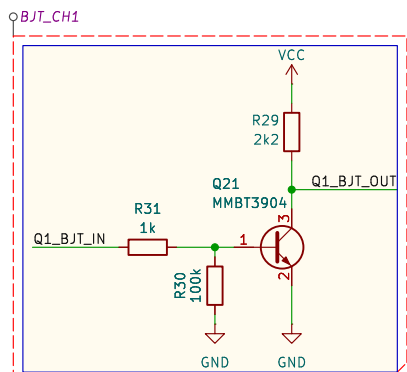
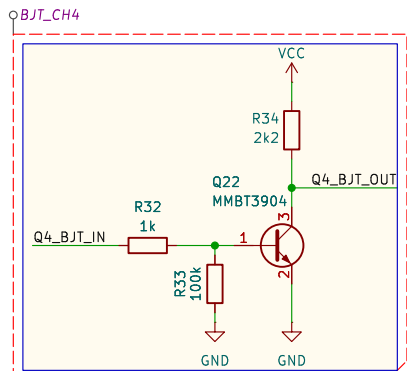
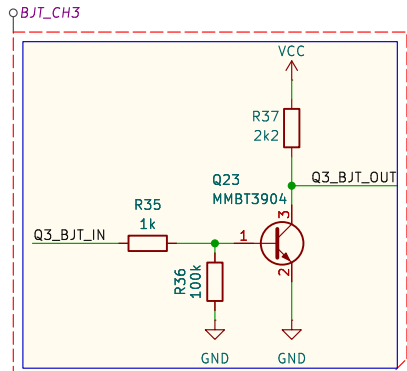




<https://electronics.stackexchange.com/questions/135903/reducing-transistor-switching-time>
 -> Q5 Plan war MOSFET (NX5020UNBK), da schnelleres Abschalten als Bipolar in Sättigung. Laut Simulation langsamer
 -> R7 relativ niedrig damit wenig Spannungsabfall und Großteil von VCC an push-pull (ca 12V-1V=11V)
 -> Kompromiss: Je kleiner umso mehr Strom eingestellt (auch Ruhestrom) -> an Q7 gleichzeitig hoher Ruhestrom + Spannung: Verlustleistung!
 Plan war: MMBT4401/4403 statt 2N3904 (Onsemi: C81464) / D6 weil höheres B bei "hohen" Strömen (relevant für Q8/Q9) -> laut sim irrelevant
 (*1): JST_NV_B02P -> 10A with AWG#16



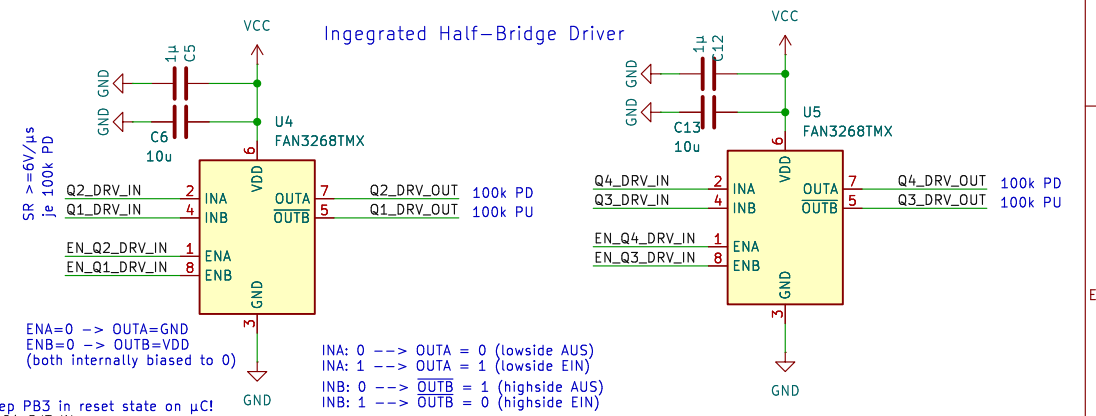
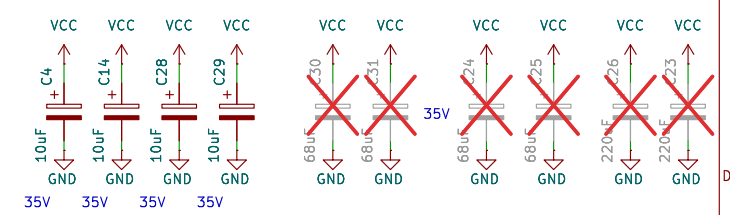
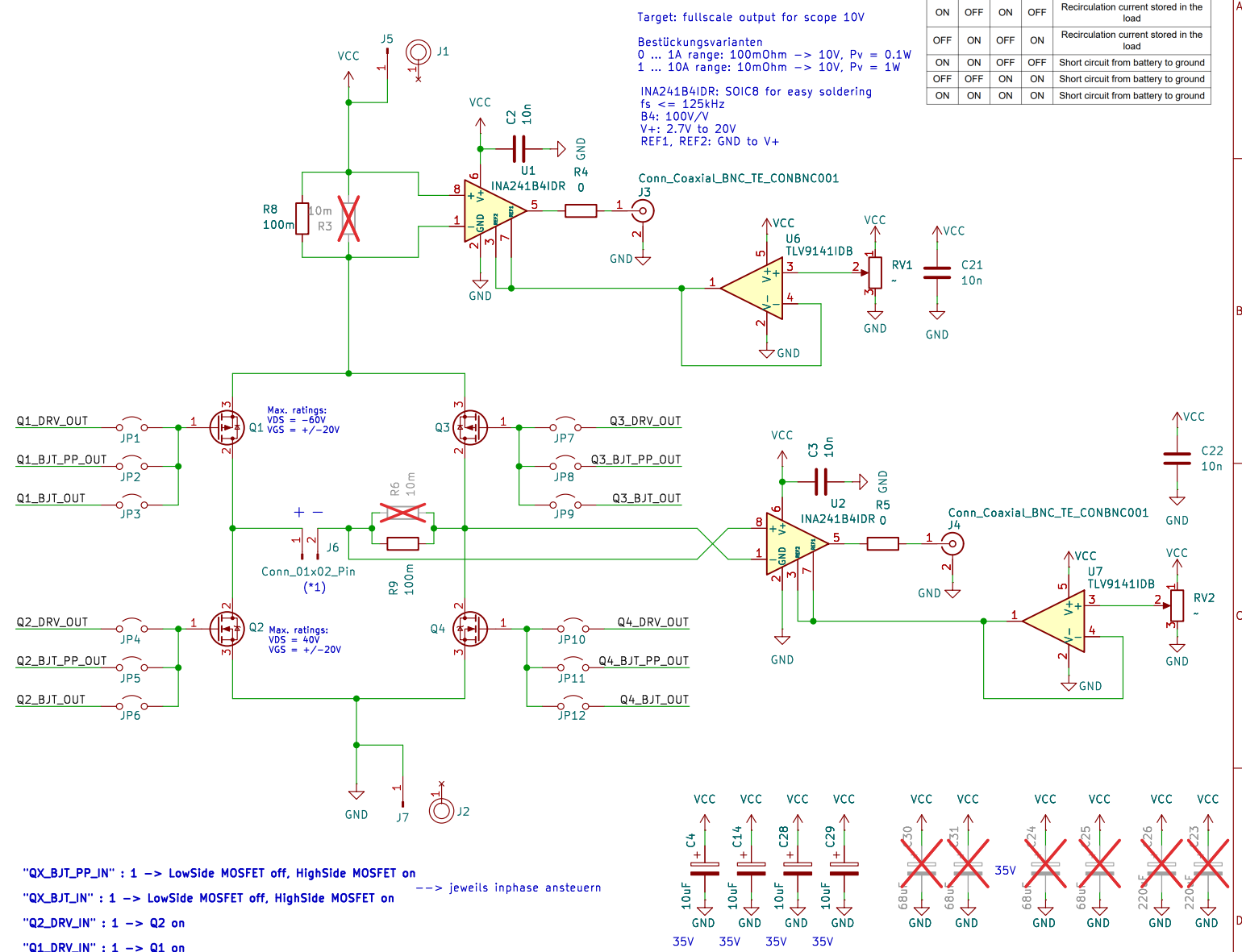
VCC,max = 18V

limited by INA241, FAN3268, TLV9141, Pv_rsistor

Target: fullscale output for scope 10V

Bestückungsvarianten
 0 ... 1A range: 100mOhm -> 10V, Pv = 0.1W
 1 ... 10A range: 10mOhm -> 10V, Pv = 1W
 INA241B4IDR: SOIC8 for easy soldering
 fs <= 125kHz
 B4: 100V/V
 V+: 2.7V to 20V
 REF1, REF2: GND to V+

Q1	Q2	Q3	Q4	State of Load
ON	OFF	OFF	ON	Current flows from H-bridge to the load
OFF	ON	ON	OFF	Direction of the current to the load is reversed
OFF	ON	OFF	ON	Provide safe path for the load to discharge to ground
ON	OFF	ON	OFF	Recirculation current stored in the load
OFF	ON	OFF	ON	Recirculation current stored in the load
ON	ON	OFF	OFF	Short circuit from battery to ground
OFF	OFF	ON	ON	Short circuit from battery to ground
ON	ON	ON	ON	Short circuit from battery to ground



labBox_HBridge: H-Brücke mit MOSFETs

Elektronik & Technische Informatik
 Autor: Franz Patz

HTL Graz-Gösting

Sheet: /
 File: labBox_HBridge.kicad_sch

Title: labBox_HBridge

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KiCad E.D.A. 9.0.5		Id: 1/1