SHPI.zero DC power supply

Input, protection, 5 V converter

DC 8–28 V –> PTC, TVS, filter, reverse polarity protection, XL2013 step-down 5 V, post-filter L1, VIN measurement

18 components

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Outputs, buzzer, current measurement, connector

Three P-MOSFET high-side outputs on VIN, buzzer, ACS712 in the branch of R3, 2x6 connection to the SHPI.zero

32 components

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SHPI.zero DC power supply | Functional schematic

SHPI

Sheet: /
File: SHPI-zero-DC.kicad_sch

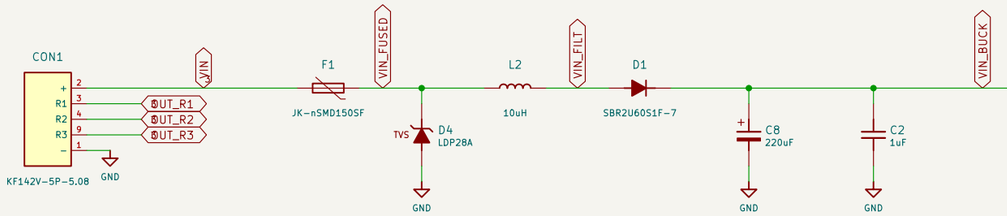
Title: SHPI.zero DC power supply / Overview

Size: A3	Date: 2026-11-11	**Rev: dcv4 (2020) + Gate-Sc**
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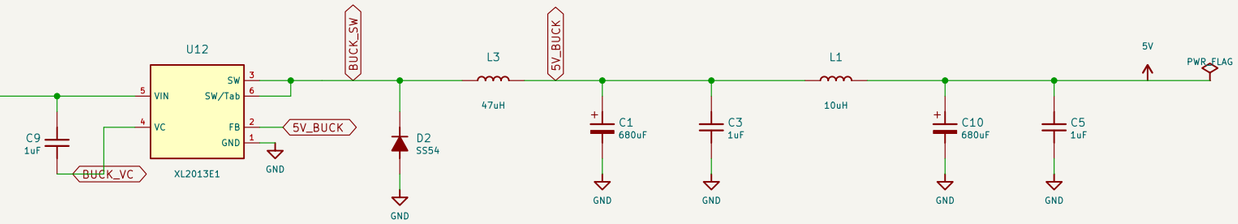
Input, protection, 5 V converter

Input 8–30 V DC (marking "DC–SUPPLY 8–30V 3A"). Outputs R1–R3 (sheet 2) connect directly to VIN upstream of F1.

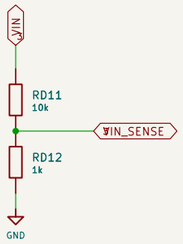
Terminal, PTC, TVS, input filter, reverse–polarity protection



XL2013E1 step–down 5 V, post–filter L1



Input voltage measurement





SHPI.zero DC power supply | Functional schematic

SHPI

Sheet: /Input, protection, 5 V converter/
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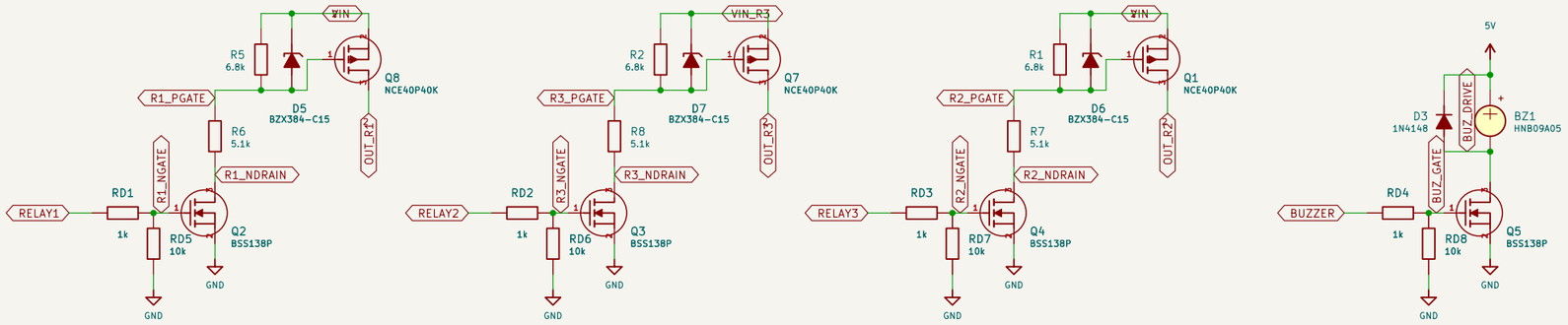
Title: SHPI.zero DC power supply / Input, protection, 5 V converter

Size: A3	Date: 2026–11–11	**Rev: dcv4 (2020) + Gate–Sc**
KiCad E.D.A. 10.0.6		Id: 2/3

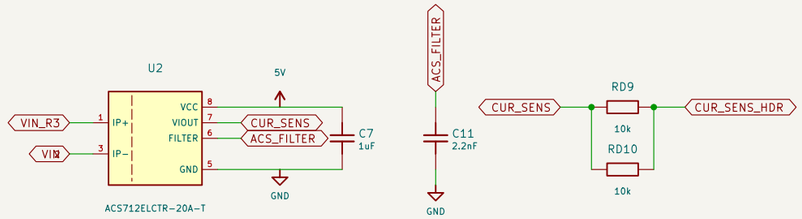
Outputs, buzzer, current measurement, connector

Terminals R1–R3 switch VIN (8–28 V) to a GND load; they are not potential-free and not fused.

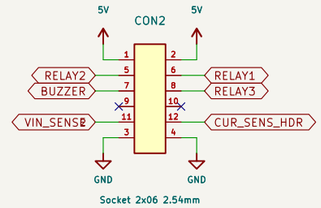
High-side outputs (BSS138 -> NCE40P40K) and buzzer



ACS712 current measurement (load current output R3)



Connector to the SHPI.zero (2x6 socket, bottom side)



SHPI.zero DC power supply | Functional schematic

SHPI

Sheet: /Outputs, buzzer, current measurement, connector/

File: 02_Ausgaenge_Messung.kicad_sch

Title: SHPI.zero DC power supply / Outputs, buzzer, current measurement, co

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