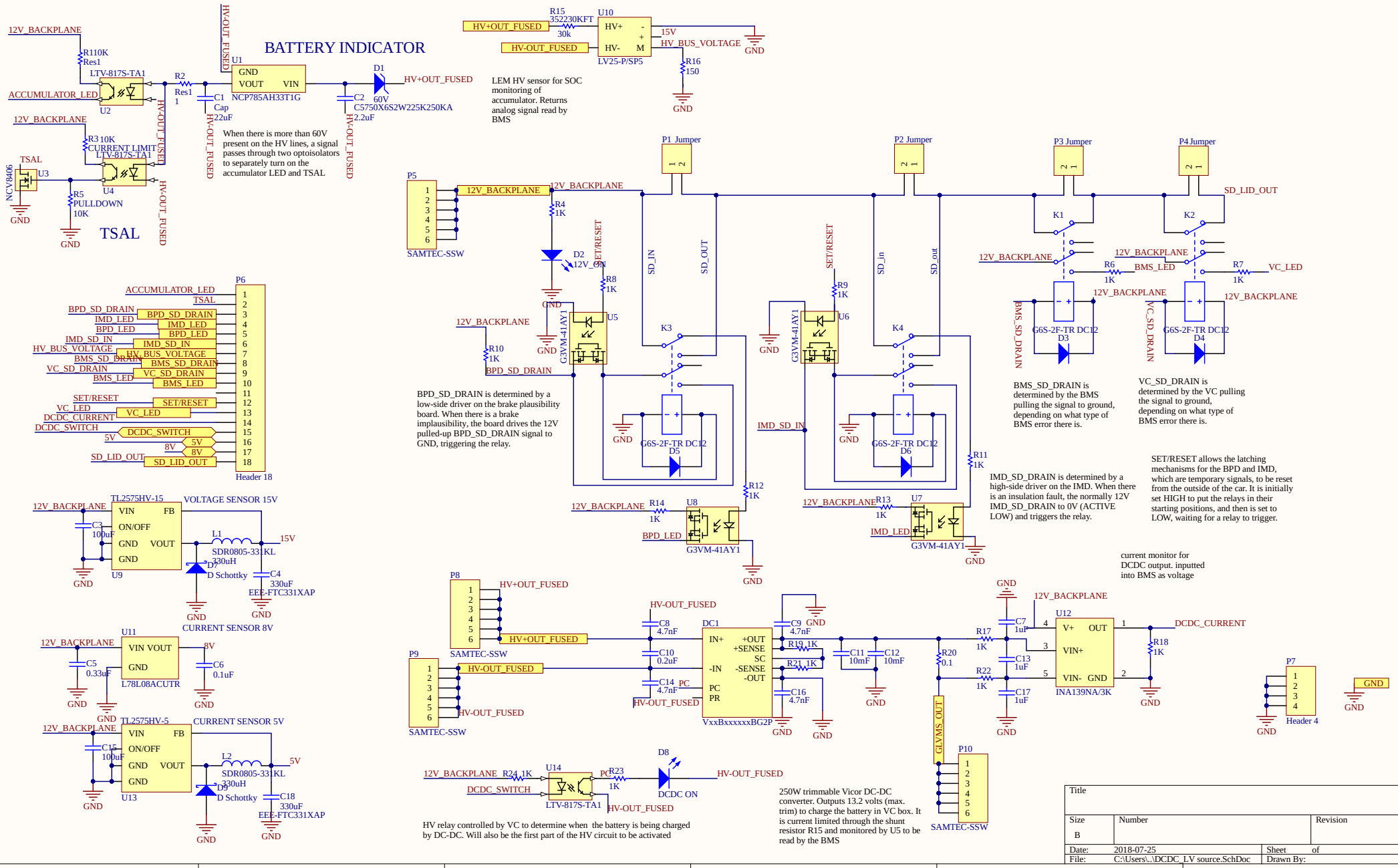
BATTERY INDICATOR
TSAL
12V_BACKPLANE
R110K
Res1
LTV-817S-TA1
ACCUMULATOR_LED
U2
R2
Res1
1
U1
GND
VOUT
VIN
NCP785AH33T1G
C1
Cap
22uF
D1
60V
C2
C5750X6S2W225K250KA
2.2uF
HV+OUT_FUSED
HV-OUT_FUSED
When there is more than 60V present on the HV lines, a signal passes through two optoisolators to separately turn on the accumulator LED and TSAL
R3 10K
CURRENT LIMIT
LTV-817S-TA1
U4
U3
NCV8406
TSAL
R5
PULLDOWN
10K
GND
R15
352230KFT
30k
U10
HV+
HV-
LV25-P/SP5
15V
HV_BUS_VOLTAGE
R16
150
LEM HV sensor for SOC monitoring of accumulator. Returns analog signal read by BMS
P1 Jumper
P2 Jumper
P3 Jumper
P4 Jumper
P5
SAMTEC-SSW
R4
1K
D2
12V_ON
SET/RESET
SD_IN
SD_OUT
R8
1K
U5
G3VM-41AY1
K3
K4
R9
1K
U6
R10
1K
BPD_SD_DRAIN
G6S-2F-TR DC12
D5
D6
R11
1K
R12
1K
R14
1K
U8
BPD_LED
G3VM-41AY1
R13
1K
U7
IMD_LED
IMD_SD_IN
BPD_SD_DRAIN is determined by a low-side driver on the brake plausibility board. When there is a brake implausibility, the board drives the 12V pulled-up BPD_SD_DRAIN signal to GND, triggering the relay.
IMD_SD_DRAIN is determined by a high-side driver on the IMD. When there is an insulation fault, the normally 12V IMD_SD_DRAIN to 0V (ACTIVE LOW) and triggers the relay.
SET/RESET allows the latching mechanisms for the BPD and IMD, which are temporary signals, to be reset from the outside of the car. It is initially set HIGH to put the relays in their starting positions, and then is set to LOW, waiting for a relay to trigger.
K1
K2
SD_LID_OUT
R6
1K
BMS_LED
R7
1K
VC_LED
BMS_SD_DRAIN
VC_SD_DRAIN
D3
D4
BMS_SD_DRAIN is determined by the BMS pulling the signal to ground, depending on what type of BMS error there is.
VC_SD_DRAIN is determined by the VC pulling the signal to ground, depending on what type of BMS error there is.
P6
ACCUMULATOR_LED
TSAL
BPD_SD_DRAIN
IMD_LED
BPD_LED
IMD_SD_IN
HV_BUS_VOLTAGE
BMS_SD_DRAIN
VC_SD_DRAIN
BMS_LED
SET/RESET
VC_LED
DCDC_CURRENT
DCDC_SWITCH
5V
8V
SD_LID_OUT
Header 18
TL2575HV-15
VOLTAGE SENSOR 15V
VIN
FB
ON/OFF
GND
VOUT
U9
C3
100uF
L1
SDR0805-331KL
330uH
D7
D Schottky
C4
330uF
EEE-FTC331XAP
15V
CURRENT SENSOR 8V
U11
VIN VOUT
GND
L78L08ACUTR
C5
0.33uF
C6
0.1uF
8V
TL2575HV-5
CURRENT SENSOR 5V
C15
100uF
L2
SDR0805-331KL
330uH
D9
D Schottky
C18
330uF
EEE-FTC331XAP
5V
P8
P9
SAMTEC-SSW
HV-OUT_FUSED
C8
4.7nF
C10
0.2nF
C14
4.7nF
PC
DC1
IN+
-IN
PC
PR
+OUT
+SENSE
SC
-SENSE
-OUT
VxxBxxxxxxBG2P
C9
4.7nF
R19 1K
R21 1K
C16
4.7nF
C11
10mF
C12
10mF
R20
0.1
GLVMS_OUT
P10
current monitor for DCDC output. inputted into BMS as voltage
R17
1K
R22
1K
C7
1uF
C13
1uF
C17
1uF
U12
V+
VIN+
VIN-
OUT
GND
INA139NA/3K
DCDC_CURRENT
R18
1K
P7
Header 4
R24 1K
U14
DCDC_SWITCH
LTV-817S-TA1
R23
1K
D8
DCDC ON
HV relay controlled by VC to determine when the battery is being charged by DC-DC. Will also be the first part of the HV circuit to be activated
250W trimmable Vicor DC-DC converter. Outputs 13.2 volts (max. trim) to charge the battery in VC box. It is current limited through the shunt resistor R15 and monitored by U5 to be read by the BMS
Title
Size
B
Number
Revision
Date:
2018-07-25
Sheet
of
File:
C:\Users\..\DCDC_LV source.SchDoc
Drawn By: