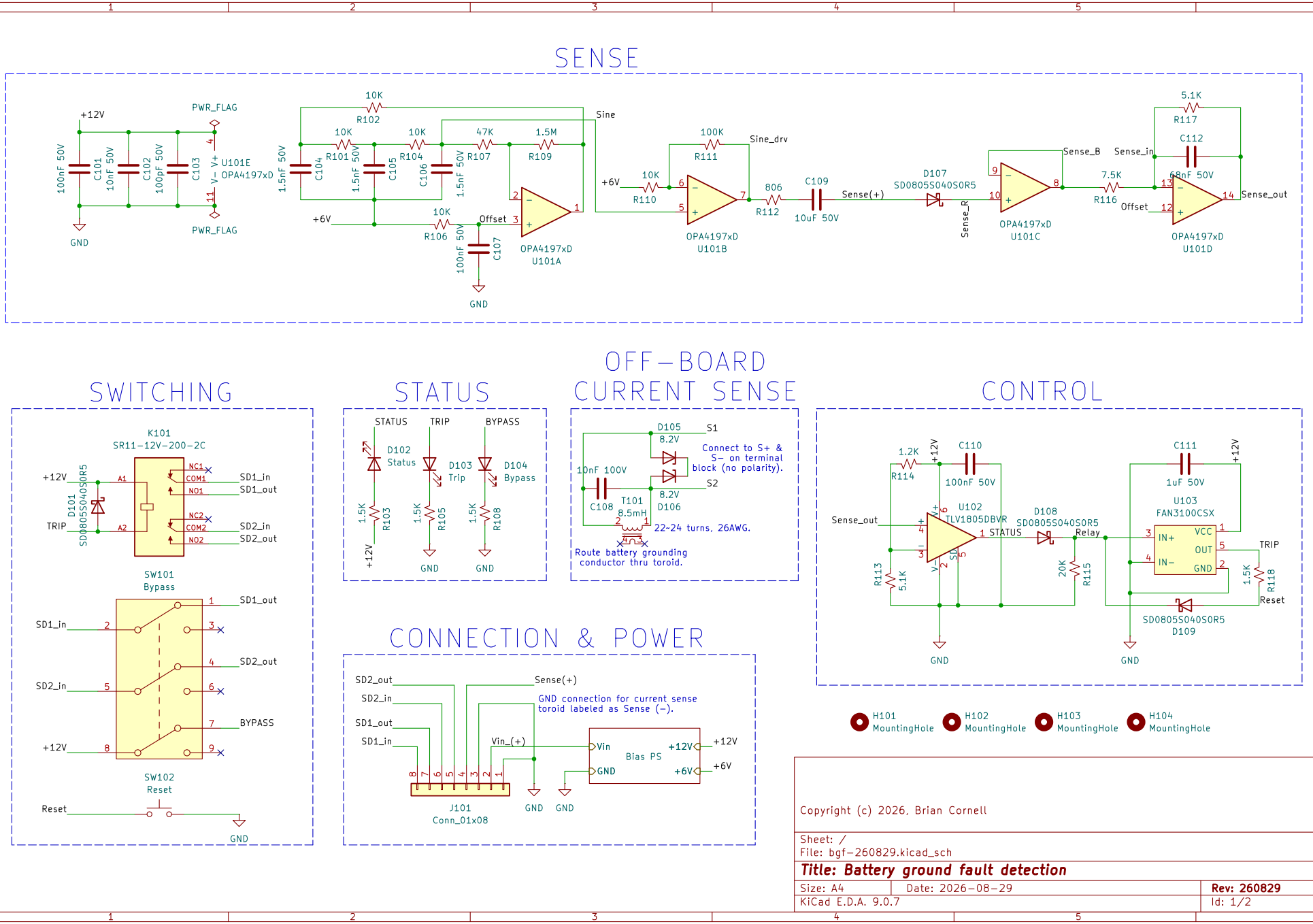
SENSE
+12V
PWR_FLAG
100nF 50V
C101
10nF 50V
C102
100pF 50V
C103
U101E
OPA4197xD
GND
10K
R102
Sine
10K
R101
47K
R107
1.5M
R109
1.5nF 50V
C104
1.5nF 50V
C105
C106
1.5nF 50V
+6V
10K
R106
Offset
100nF 50V
C107
OPA4197xD
U101A
100K
R111
Sine_drv
10K
R110
OPA4197xD
U101B
806
R112
C109
10uF 50V
Sense(+)
D107
SD0805S040S0R5
Sense_B
OPA4197xD
U101C
5.1K
R117
C112
Sense_in
7.5K
R116
68nF 50V
Offset
OPA4197xD
U101D
Sense_out
SWITCHING
K101
SR11-12V-200-2C
+12V
TRIP
D101
SD0805S040S0R5
NC1
COM1
NO1
NC2
COM2
NO2
SD1_in
SD1_out
SD2_in
SD2_out
SW101
Bypass
BYPASS
SW102
Reset
Reset
GND
STATUS
TRIP
BYPASS
D102
Status
D103
Trip
D104
Bypass
1.5K
R103
1.5K
R105
1.5K
R108
OFF-BOARD
CURRENT SENSE
D105
8.2V
S1
Connect to S+ &
S- on terminal
block (no polarity).
10nF 100V
C108
T101
8.5mH
S2
8.2V
D106
22-24 turns, 26AWG.
Route battery grounding
conductor thru toroid.
CONTROL
1.2K
R114
+12V
C110
100nF 50V
Sense_out
U102
TLV1805DBVR
STATUS
D108
SD0805S040S0R5
Relay
20K
R115
R113
5.1K
C111
1uF 50V
U103
FAN3100CSX
IN+
IN-
VCC
OUT
GND
TRIP
1.5K
R118
Reset
SD0805S040S0R5
D109
CONNECTION & POWER
SD2_out
SD2_in
SD1_out
SD1_in
Sense(+)
GND connection for current sense
toroid labeled as Sense (-).
Vin_(+)
Vin
GND
Bias PS
+12V
+6V
+12V
+6V
J101
Conn_01x08
GND
GND
H101
MountingHole
H102
MountingHole
H103
MountingHole
H104
MountingHole
Copyright (c) 2026, Brian Cornell
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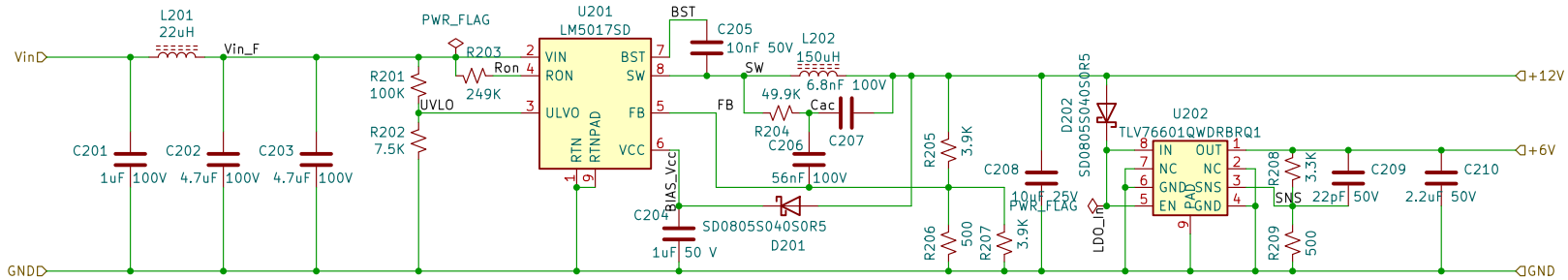
Title: Battery ground fault detection
Size: A4
Date: 2026-08-29
Rev: 260829
KiCad E.D.A. 9.0.7
Id: 1/2



Vin=18–70V DC
+12V/500mA, +6V/50mA
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File: biasps.kicad_sch

Title: Bias PS

Size: USLetter	Date: 2026-08-29	**Rev: 260829**
KiCad E.D.A. 9.0.7		Id: 2/2