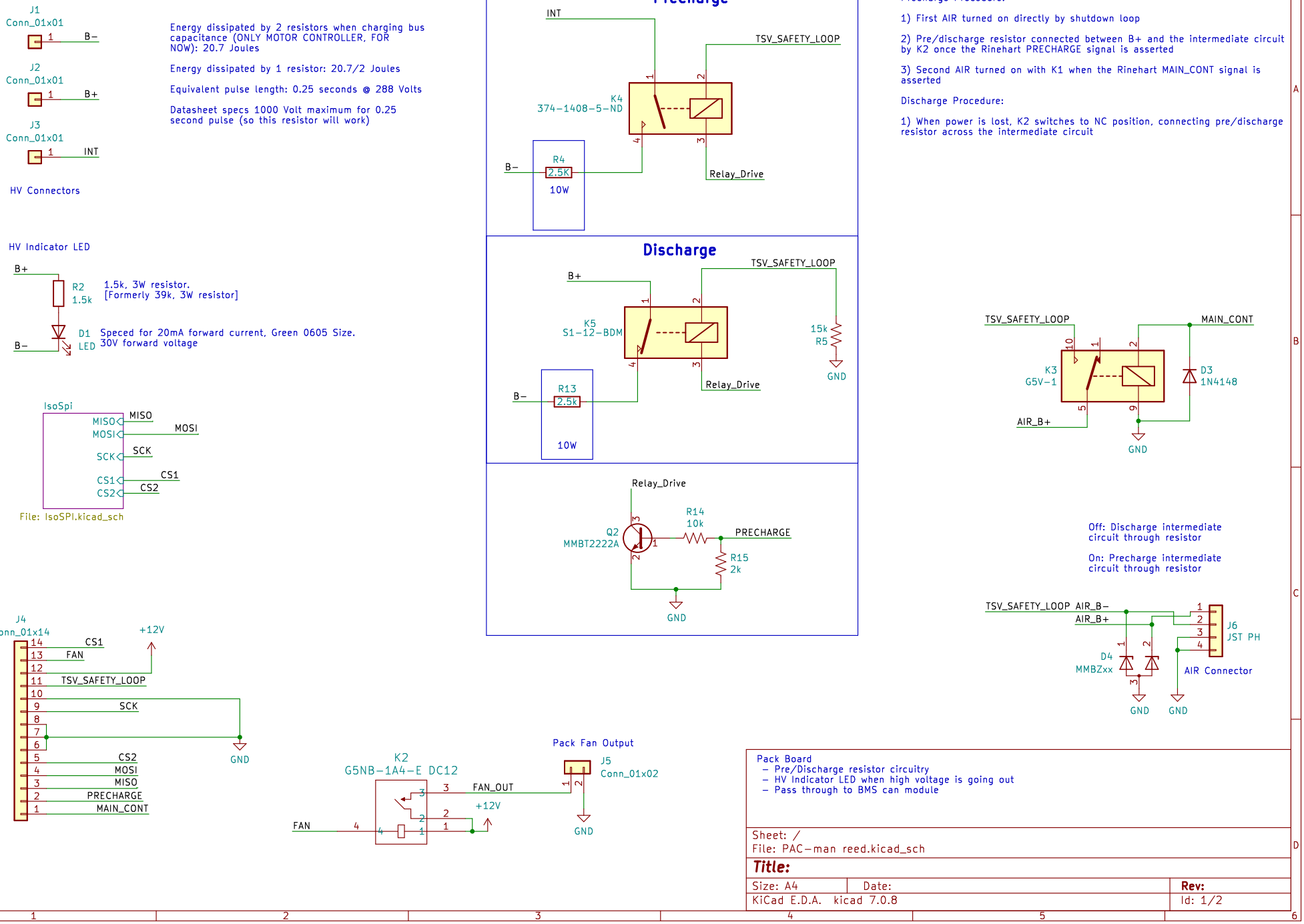
J1
Conn_01x01
1
B−
J2
Conn_01x01
1
B+
J3
Conn_01x01
1
INT
HV Connectors
Energy dissipated by 2 resistors when charging bus capacitance (ONLY MOTOR CONTROLLER, FOR NOW): 20.7 Joules
Energy dissipated by 1 resistor: 20.7/2 Joules
Equivalent pulse length: 0.25 seconds @ 288 Volts
Datasheet specs 1000 Volt maximum for 0.25 second pulse (so this resistor will work)
Precharge
INT
TSV_SAFETY_LOOP
K4
374−1408−5−ND
1
2
3
4
B−
R4
2.5K
10W
Relay_Drive
Precharge Procedure:
1) First AIR turned on directly by shutdown loop
2) Pre/discharge resistor connected between B+ and the intermediate circuit by K2 once the Rinehart PRECHARGE signal is asserted
3) Second AIR turned on with K1 when the Rinehart MAIN_CONT signal is asserted
Discharge Procedure:
1) When power is lost, K2 switches to NC position, connecting pre/discharge resistor across the intermediate circuit
HV Indicator LED
B+
R2
1.5k
1.5k, 3W resistor.
[Formerly 39k, 3W resistor]
D1
LED
Speced for 20mA forward current, Green 0605 Size.
30V forward voltage
B−
Discharge
B+
TSV_SAFETY_LOOP
K5
S1−12−BDM
15k
R5
GND
B−
R13
2.5k
10W
Relay_Drive
TSV_SAFETY_LOOP
MAIN_CONT
K3
G5V−1
10
1
2
5
9
D3
1N4148
AIR_B+
GND
IsoSpi
MISO
MOSI
SCK
CS1
CS2
File: IsoSPI.kicad_sch
Relay_Drive
Q2
MMBT2222A
R14
10k
PRECHARGE
R15
2k
GND
Off: Discharge intermediate circuit through resistor
On: Precharge intermediate circuit through resistor
J4
Conn_01x14
14
CS1
13
FAN
12
11
TSV_SAFETY_LOOP
10
9
SCK
8
7
6
5
CS2
4
MOSI
3
MISO
2
PRECHARGE
1
MAIN_CONT
+12V
GND
TSV_SAFETY_LOOP
AIR_B−
AIR_B+
J6
JST PH
D4
MMBZxx
AIR Connector
GND
GND
K2
G5NB−1A4−E DC12
3
FAN_OUT
2
1
+12V
FAN
4
Pack Fan Output
J5
Conn_01x02
GND
Pack Board
– Pre/Discharge resistor circuitry
– HV Indicator LED when high voltage is going out
– Pass through to BMS can module
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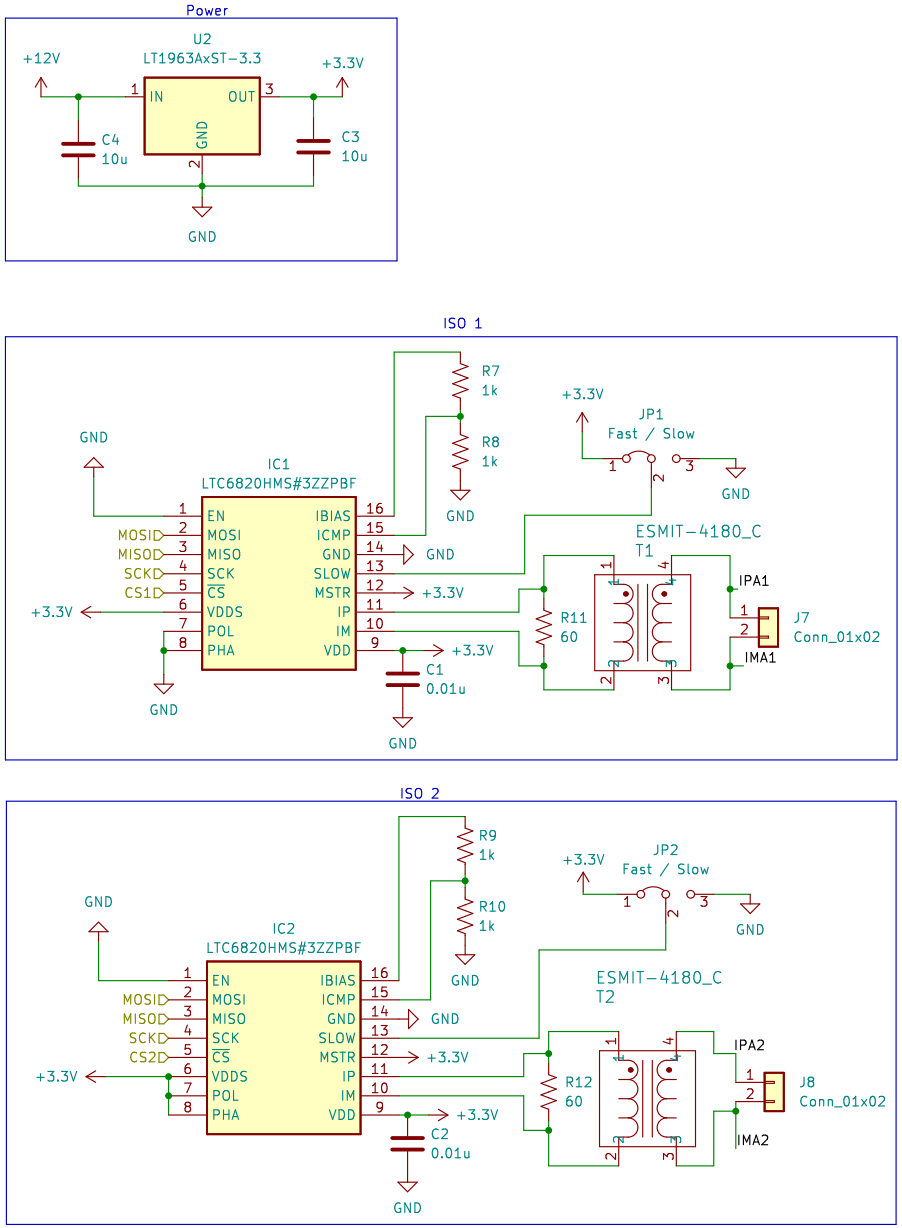
Size: A4
Date:
Rev:
KiCad E.D.A. kicad 7.0.8
Id: 1/2



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Size: A4	Date:	**Rev:**
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