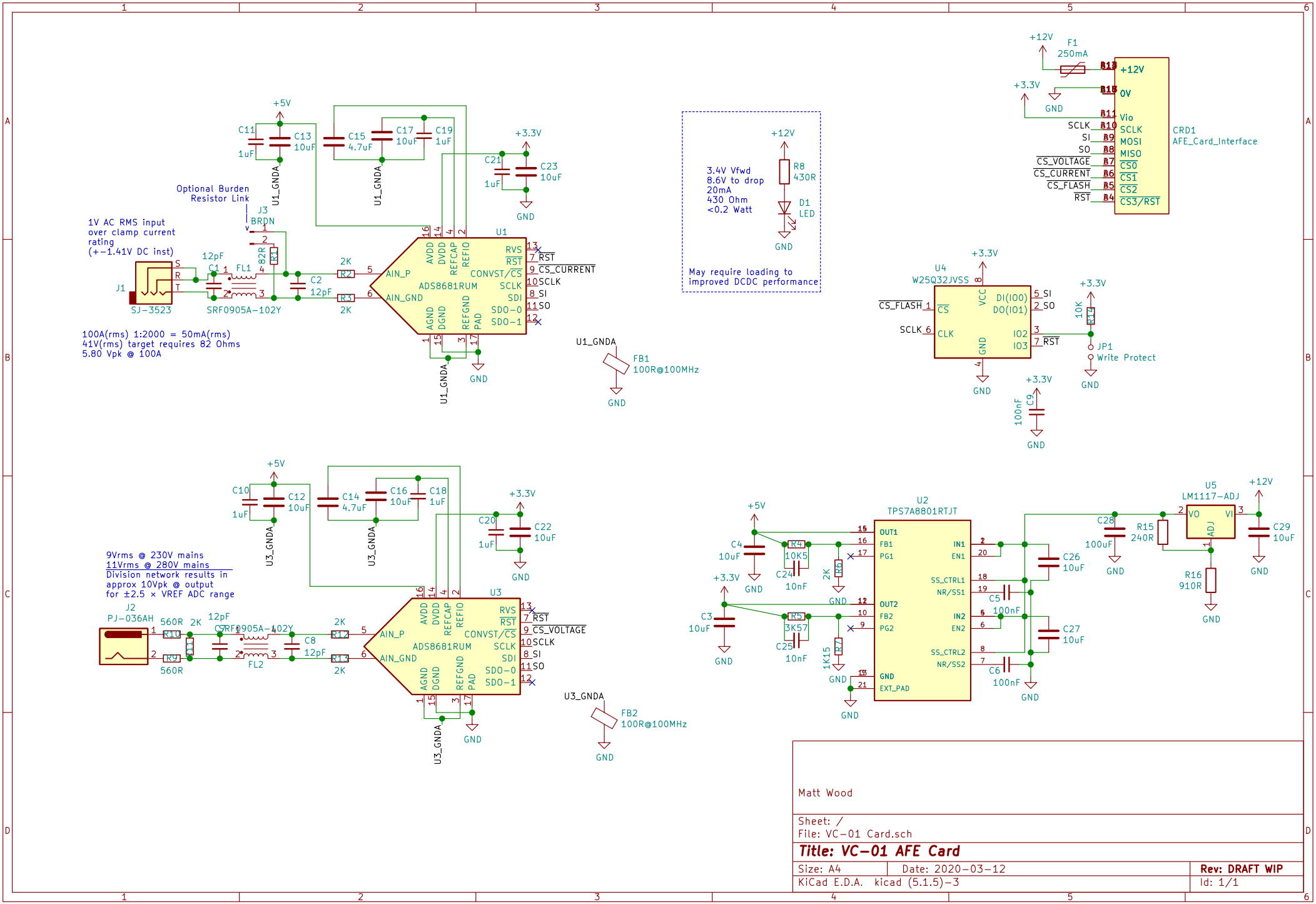
+5V
C11 1uF
C13 10uF
C15 4.7uF
C17 10uF
C19 1uF
+3.3V
C21 1uF
C23 10uF
GND
U1_GNDA
Optional Burden Resistor Link
J3 BRDN
1V AC RMS input over clamp current rating (+-1.41V DC inst)
J1 SJ-3523
12pF C1
FL1 SRF0905A-102Y
82R R1
C2 12pF
2K R2
2K R3
U1 ADS8681RUM
AIN_P
AIN_GND
AVDD DVDD REFCAP REFIO
AGND DGND REFGND PAD
RVS RST CONVST/CS SCLK SDI SDO-0 SDO-1
7 RST
9 CS_CURRENT
10 SCLK
8 SI
11 SO
100A(rms) 1:2000 = 50mA(rms)
41V(rms) target requires 82 Ohms
5.80 Vpk @ 100A
FB1 100R@100MHz
+12V
R8 430R
D1 LED
3.4V Vfwd
8.6V to drop
20mA
430 Ohm
<0.2 Watt
May require loading to improved DCDC performance
F1 250mA
CRD1 AFE_Card_Interface
B13 +12V
B15 0V
B11 Vio
B10 SCLK
B9 MOSI
B8 MISO
B7 CS0
B6 CS1
B5 CS2
B4 CS3/RST
SCLK B10
SI B9
SO B8
CS_VOLTAGE B7
CS_CURRENT B6
CS_FLASH B5
RST B4
U4 W25Q32JVSS
CS_FLASH 1 CS
SCLK 6 CLK
VCC DI(IO0) DO(IO1) IO2 IO3 GND
5 SI
2 SO
3
7 RST
10K R14
JP1 Write Protect
C9 100nF
C10 1uF
C12 10uF
C14 4.7uF
C16 10uF
C18 1uF
C20 1uF
C22 10uF
U3_GNDA
9Vrms @ 230V mains
11Vrms @ 280V mains
Division network results in approx 10Vpk @ output for ±2.5 × VREF ADC range
J2 PJ-036AH
560R R10
560R R9
2K R11
12pF C7
SRF0905A-102Y FL2
C8 12pF
2K R12
2K R13
U3 ADS8681RUM
RVS RST CONVST/CS SCLK SDI SDO-0 SDO-1
7 RST
9 CS_VOLTAGE
10 SCLK
8 SI
11 SO
FB2 100R@100MHz
U2 TPS7A8801RTJT
OUT1 FB1 PG1 OUT2 FB2 PG2 GND EXT_PAD
IN1 EN1 SS_CTRL1 NR/SS1 IN2 EN2 SS_CTRL2 NR/SS2
C4 10uF
R4 10K5
C24 10nF
2K R6
C3 10uF
R5 3K57
C25 10nF
1K15 R7
C26 10uF
C5 100nF
C27 10uF
C6 100nF
C28 100uF
R15 240R
R16 910R
U5 LM1117-ADJ
VO VI ADJ
C29 10uF
Matt Wood
Sheet: /
File: VC-01 Card.sch
Title: VC-01 AFE Card
Size: A4
Date: 2020-03-12
Rev: DRAFT WIP
KiCad E.D.A. kicad (5.1.5)-3
Id: 1/1