PWM DRIVER
3A MAX

LOAD

SHUNT

PREAMP X13

RMS/DC

BUFFER/AMP X3

OPA333
U14

R4
0R025

TP8

C6 100n
GNDF

R1 12K

R2 1K

+5VF

+5VF
C7 100n
GNDF

IN1
IN2
EN
OUT
RTRN
GND

U15
LTC1968

TP6

TP11

R6 0R

+5VF
C8 100n
GNDF

OPA333
U16

R3 2K

R5 1K

TP5

C5 10u

TP3 U8

ADS1115IDGS

AIN0
AIN1
AIN2
AIN3
ADDR
VDD
RDY
SDA
SCL
GND

+5VF
C15 100n
GNDF

+5VF +5VF

R7 R8

C16 100n
GNDF

+5VF
U5
ISO1541

VCC2
SDA2
SCL2
GND2
VCC1
SDA1
SCL1
GND1

GNDF

+3V3
C10 100n
GND

GND

PB7
PB8

+5VF +5VF

R9 R10

ESD5344-TP
U2

+5V

GND

PWR_FLAG   PWR_FLAG
J5
pcie_98
+5V   GND

B1 A1
B2 A2
B3 A3
B4 A4
B5 A5
B6 A6
B7 A7
B8 A8
B9 A9
B10 A10
B11 A11
B12 A12
B13 A13
B14 A14
B15 A15
B16 A16
B17 A17
B18 A18
B19 A19
B20 A20
B21 A21
B22 A22
B23 A23
B24 A24
B25 A25
B26 A26
B27 A27
B28 A28
B29 A29
B30 A30
B31 A31
B32 A32
B33 A33
B34 A34
B35 A35
B36 A36
B37 A37
B38 A38
B39 A39
B40 A40
B41 A41
B42 A42
B43 A43
B44 A44
B45 A45
B46 A46
B47 A47
B48 A48
B49 A49

PB7
PB8

BUS

CURRENT DETECTOR

OPA333
U1

R11 12K

R12 1K

+5VF
C11 100n
GNDF

TP9

R23 10K

D1
GRN

GNDF

R27
5K1

D5
GRN
GNDF

+5VF

TP10

GNDF

LOW NOISE 5V

TP7
U4
TPS7A2050PDBVR

OUT
NC
IN
EN
GND

C28 10u
C27 100n
C24 100n

TP4

C26 10u

9VF

C9

U10
B0509XT-1WR3

VOUT
V0
VIN
GND

+5V

C14

GND GND

+5VF

TODO: Change full scale to 4A.

TODO: Add ADC addressing.

TODO: ADD PWD digital output.

TODO: Revisit bypass capacitors

TODO: Consider adding a filter between analog and digital 5VF.

TODO: Add test points

U3
XC6206P332MR
C5446

VIN
GND
VOUT

+5V

C1 10u
C2 100n
C3 100n
C4 10u

GND GND GND GND GND

TP2

+3V3

+3V3

R15
5K1

D2
GRN

GND

TP1

GND

PWM CURRENT SENSOR