Power Supply

R54 365k R52 365k R53 365k
AC-L
C8 680nF R15 150 D8
U6 VIN VOUT VSS +3V3
C9 1000uF D6 9.1V 1W
C10 100uF D7 5.1V 1W D5 1.8V 500mW C5 100nF
D9 AC-N
C11 100uF C3 100nF
GND
C7 330nF R17 200 -1V8

Voltage Feedback

R4 511K 0.1% R3 R2 511K 0.1% R1
+3V3 LMV321IDBVRG U2
AC-L R5 2.61K 0.1% 511K 0.1% 511K 0.1%
-1V8 GND
+3V3 180k ± 0.1% R33
C1 10uF R34 1K ± 1% VSENSE
C2 100nF R32 33k ± 0.1% D10 LESD5Z3.3T1G
GND

Voltage Reference, 2 options, install one or the other.

+3V3 +3V3
R37 1K ± 1% C27 2.2uF
U9 ADR5040A R36 15k ± 0.1% VREFA
R46 5k ± 0.1%
GND

+3V3 C16 2.2uF
U10 VDD FEEDBACK OUT 10 R40 10k R39 ± 0.1% VREFA
GND SHDN# GND GND R38 10k C17 2.2uF
GND R41 10k ± 0.1%
(Alternate Package)
U11 OUT VDD GND GND
GND #SHDN

Current Monitoring. 12k,1.5k = Gain of 8. Which translates to 12.8A current range.

TLV333AIM5/TR U16
AC-N-OUT-1 1.5k ± 0.1% R10 +3V3 C14 100nF
R30 5m V+
AC-N R16 1.5k ± 0.1% R19 12k ± 0.1% C28 1nF R11 12k ± 0.1% C29 1nF C6 1nF
+3V3 180k ± 0.1% R7
C4 10uF R8 1K ± 1% CS1
R6 33k ± 0.1% D1 LESD5Z3.3T1G
-1V8 C6 100nF GND

TLV333AIM5/TR U1
AC-N-OUT-2 1.5k ± 0.1% R20 +3V3 C31 100nF
R9 5m V+
AC-N R26 1.5k ± 0.1% R31 12k ± 0.1% C32 1nF R25 12k ± 0.1% C33 1nF C30
+3V3 180k ± 0.1% R13
C12 10uF R14 1K ± 1% CS2
R12 33k ± 0.1% D2 LESD5Z3.3T1G
-1V8 GND

TLV333AIM5/TR U3
AC-N-OUT-3 1.5k ± 0.1% R35 +3V3 C35 100nF
R18 5m V+
AC-N R56 1.5k ± 0.1% R57 12k ± 0.1% C36 1nF R55 12k ± 0.1% C37 1nF C34
+3V3 180k ± 0.1% R22
C13 10uF R23 1K ± 1% CS3
R21 33k ± 0.1% D3 LESD5Z3.3T1G
-1V8 C34 100nF GND

TLV333AIM5/TR U5
AC-N-OUT-4 1.5k ± 0.1% R58 +3V3 C39 100nF
R24 5m V+
AC-N R60 1.5k ± 0.1% R61 12k ± 0.1% C40 1nF R59 12k ± 0.1% C41 1nF C38
+3V3 180k ± 0.1% R28
C15 10uF R29 1K ± 1% CS4
R27 33k ± 0.1% D4 LESD5Z3.3T1G
-1V8 C38 100nF GND

RF Communication

U12 RFM69CW
RFM-MISO 8 MISO NSS 7 RFM-SEL
9 DIO0 SCK 6 RFM-SCK
10 DIO2 MOSI 5 RFM-MOSI
11 DIO1 DIO3 4 R42 +3V3
12 DIO5 GND 3
13 RESET 3.3V 2 ANT
14 GND ANA 1 C19 100nF C18 10uF
GND

Isolated FTDI Interface

+3V3 1K ± 1% R51 U4 R50 560
DTR
GND
R45 560 U14 1K ± 1% R49
TX
+3V3
1K ± 1% R47 U15 R48
RX I-DTR
GND 560 I-TX
I-RX
I-5V
I-GND
FTDI 1 2 3 4 5 6

Microcontroller

X1 12MHz
GND 22pF C24 XTL1
XTL2 C26 22pF C25 GND
+3V3 UDPI
UDPI GND

U13 AVR128DB48 E/6LX
SW1 1 PA5 EP 49
SW2 2 PA6 PA4 48
SW3 3 PA7 PA3 47
TX 4 PB0 PA2 46
RX 5 PB1 PA1(XTALHF2) 45 XTL2
LED 6 PB2 PA0(XTALHF1) 44 XTL1
7 PB3 GND 43 GND
RFM-SEL 8 PB4 VDD 42
RFM-MOSI 9 PB5 UPDI 41 UDPI
RFM-MISO 10 PC0 PF6 40 RESET +3V3
RFM-SCK 11 PC1 PF5 39
12 PC2 PF4 38
13 PC3 PF3 37
+3V3 14 VDDIO2 PF2 36
15 GND PF1(XTAL32K2) 35
16 PC4 PF0(XTAL32K1) 34
17 PC5 PE3 33
18 PC6 PE2 32
19 PC7 PE1 31
VSENSE 20 PD0 PE0 30
CS1 21 PD1 GND 29
CS2 22 PD2 AVDD 28
CS3 23 PD3 PD7 27
CS4 24 PD4 PD6 26
PD5 25 VREFA

+3V3 +3V3 +3V3 C23 1uF
C20 100nF C21 100nF C22 100nF
GND GND GND GND

SW1 SW2 SW3
LED
R44 10k
LED1
GND GND

+3V3
R43 10k
RESET C24 100nF DTR

Designer	brandon3055		
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