40KHz Triangle Oscillator

VDD
R7 4K7
R3 100K
R5 100K
R6 18K
GND
R4 56K
U2A
C1 100pF
GND
VDD

PWM Generator

VDD
R11 4K7
U2B LM393
6
7
5

Gate Driver

V_Supply
R15 10K
Q3
D5
R13 2K2
Q2
D3
D4
R16 100R
GND

Interface Connector

V_Supply
J1
GateDrive 2
Vfdbk 3
Vs+ 4
Vs− 5
6
GND

Logic Supply & Feedback Reference

V_Supply
R1 470R
VDD
D1 12V
R2 5K6
Vref
GND
D2 5.1V
GND
VDD VDD
V+ V+
U1C TLV272
GND
U2C LM393
GND

Voltage Feedback

C2 0.001uF
R10 100K
R12 100K
U1A TLV272
Vref

Current Limiting

Q4
R20 1K
VDD
R21 10K
R14 1K
R18 330K
R22 56K Vs−
R17 100K
U1B TLV272
R23 56K Vs+
R19 330K
Q1
GND
GND

Buck Converter (top)

V_Supply Hi-Power Q101 IRF9Z24 Hi-Power L101 820uH Hi-Power R103 0.12R Hi-Power
C101 100uF
GND
R101 100R
C102 10uF
Vs+ Vs−
R104 1K
Load R106 10R
Vfdbk RV101 50K
R105 27K
J101
1
GateDrive 2
Vfdbk 3
Vs+ 4
Vs− 5
6
GND
R102 100K
Q102 IRF530
JP101
GND
Hi-Power
PGND

Buck Converter (bottom)

V_Supply Hi-Power Q? IRF9Z24 Hi-Power L? 820uH Hi-Power R? 0.12R Hi-Power
C? 100uF
GND
R? 100R
C? 10uF
Vs+ Vs−
R? 1K
Load R? 10R
Vfdbk RV? 50K
R? 27K
J?
1
GateDrive 2
Vfdbk 3
Vs+ 4
Vs− 5
6
GND
R? 100K
Q? IRF530
JP?
GND
Hi-Power
PGND