Input Protection

J1
Barrel_Jack

F1
Polyfuse

Q1
AO3401A

VCC
PWR_FLAG

PWR_FLAG

C5
100n/50V

D2
ZMM5V6

C8
100n/16V

GND

R1
12k

GND

GND

Output

VDD

J2
Screw_Terminal_01x02

GND

+5V/+3V3/+1V8 DC-DC Regulator

For V_{in} = 36V/V_{out} = 5V we need L_{min} = 15uH
To reduce the size of the capacitor for lower voltages
we increase the inductance to 47uH

V_{in} = 7V..19V (for all outputs)
V_{in} = 5.5V..36V (otherwise)
V_{out} = 1V8/3V3/5V
I_{out} = 3A
f = 500kHz

VCC

10u/50V   10u/50V   10u/50V   10u/50V

C1   C2   C3   C4

GND   GND   GND   GND

U1
TPS5430DDA

7 VIN   BOOT 1
   EN
   PH 8
   VSENSE 4 Feedback
5 EN
6 GND
9 GNDPAD

GND

C6
10n

GND

D1
SS34

L1
47u

C7
10u/6.3V

C9
100u/6.3V

C10
100u/6.3V

GND   GND   GND   GND

VDD
PWR_FLAG

VDD

R2
10k

Feedback

Fit only one jumper!

5V   JP1
SolderJumper_2_Open

3V3   JP2
SolderJumper_2_Open

1V8   JP3
SolderJumper_2_Open

R3
3k3

R4
150k

R5
5k6

R6
270

R7
22k

R8
470k

GND   GND   GND

H1
MountingHole
H2
MountingHole
H3
MountingHole
H4
MountingHole

JLCPCB Extended Parts:
* Polyfuse
* Power Inductor
* Barrel Jack Connector
* Screw Terminal

Max Stabel
Sheet: /
File: TPS5430.kicad_sch
Title: TPS5430
Size: A4   Date: 2021-07-15   Rev: 1.0.0
KiCad E.D.A. kicad 5.99.0-unknown-395602b12a~131~ubuntu20.04.1   Id: 1/1