Reverse polarity protection.
No fast start.

D1
LL4148
dio_1206

U1
LT3045
12-lead_MSOP

LT3045

1 in1   Out1 12
2 in2   Out2 11
3 in3   OutS 10
4 EN/UV GND 9
5 PG   set 8
6 Ilim   PGFB 7

heat_sink_GND
13

C3
10u
tantal_7x4mm

C2
XXX
0805

C1
XXX
elko_RM5_D10

total output capacitance at leat 10uF
with <20mOhm ESR and 2nH ESI

C4
10u
tantal_7x4mm

C5
XXX
0805

C6
XXX
elko_RM5_D10

At least 4.7uF input capacitance.
RIP the elko in case of reversed polarity...

R1
300R
0805

PAD1
XXX
pad_thru

PAD4
XXX
pad_thru

R2
XXX
0805

R3
50k
VH102Z

C7
4.7u
tantal_7x4mm

C8
XXX
0805

output voltage = 100uA * Rset (max 15 V)
consider using a precision resistor
care for leakage current through capacitors
or dirt on PCB

capacitance improves PSRR and noise.
Is also generates a "slow turn on" behavior with
time constant Rset * Cset

Current limit = (150mA*kOhm)/Rlim

The Ilim pin outputs 1/500 of the output
current and can be used as current monitor

H1
cube_10mm
cube_10mm

Use cubiod to screw the device on a heat sink of some sort.
Care to not get an unwanted GND connection.

CONN1
PS-3Pin
PS_3PIN

1
2
3

max +/- 20V

R4
100k
0805

S1
XXX
APEM_TL36WW

R5
XXX
0805

Pulling EN/UV to below 1.24V (posivitve supply)
or 1.26V (negative supply) shuts down the output voltage.
Yes, the negative supply also accepty positive voltages on this pin.

CONN2
JAE3pin
PS_3PIN

1
2
3

PAD2
GND_Pad
pad_thru

D2
LL4148
dio_1206

U2
LT3094
12-lead_MSOP

LT3094

1 in1   Out1 12
2 in2   Out2 11
3   OutS 10
4 EN/UV GND 9
5 PG   set 8
6 PGFB   VIOC 7
  Ilim

heat_sink_GND
13

C11
10u
tantal_7x4mm

C10
XXX
0805

C9
XXX
elko_RM5_D10

total output capacitance at leat 10uF
with <20mOhm ESR and 2nH ESI

C12
10u
tantal_7x4mm

C13
XXX
0805

C14
XXX
elko_RM5_D10

At least 4.7uF input capacitance.
RIP the elko in case of reversed polarity...

R8
7k5
0805

PAD3
XXX
pad_thru

PAD5
XXX
pad_thru

R6
XXX
0805

R7
50k
VH102Z

C15
4.7u
tantal_7x4mm

C16
XXX
0805

output voltage = -100uA * Rset (max -19 V)
consider using a precision resistor
care for leakage current through capacitors
or dirt on PCB

capacitance improves PSRR and noise.
Is also generates a "slow turn on" behavior with
time constant Rset * Cset

Current limit = (3.75A*kOhm)/Rlim

H2
cube_10mm
cube_10mm

low_noise_power_supply		v1 REV.:
TITLE:		
PROJECT:	general_stuff	15.07.2021 DATE:
FILE: low_noise_power_supply.sch	Martin Q DRAWN BY:	PAGE: 1 / 1