REPEAT(PM,1,1)
PowerSupplyPM1.SchDoc;PowerSupplyPM2.SchDoc

dummy

REPEAT(PM,2,2)
PowerSupplyPM1.SchDoc;PowerSupplyPM2.SchDoc

dummy

REPEAT(PM,3,3)
PowerSupplyPM1.SchDoc;PowerSupplyPM2.SchDoc

dummy

REPEAT(PP,4,4)
PowerSupplyPP1.SchDoc;PowerSupplyPP2.SchDoc

dummy

Related Drawings:
D060431-D: Synchronous Buck Regulator: PM
D060512-A: Synchronous Buck Regulator: PP

The 4 panels are:
D060431-D / ±6.5V variant
D060431-D / ±16.5V variant
D060431-D / ±24V variant
D060512-A / +12V variant

Panel construction:
4 boards are arranged in a 2 x 2 grid
Spacing in between boards is 100 mil
Total panel size is 10.1" x 14.1"
Panel thickness is approx. 93 mil
6 layers
Smallest width/clearance is 10 mil (top layer), 8 mil (bottom layer) and 15 mil (inner layers)
Copper weight is 3 oz.
Boards are separated by tab routing (no border)

Title	Synchronous Buck Regulator: Panel		
Size: A	Number: D070154	Revision: A	
Date: 2/28/2008		Sheet 1 of 5	
File: C:\User\..\PowerSupplyPanel.SchDoc		Drawn By: Paul Schwinberg/Daniel Sigg	

Setting the output voltage:

	RX/RY
3.3V:	3.30K & 100K
5V:	1.91K
6.5V:	1.50K & 22.0K
12V:	732 & 30.0K
15V:	562
16.5V:	510
24V:	374 & 4.32K

RX/Y = 8000/(Vout-0.8)

RX1/RY1 are 0.1% 805
RX2/RY2 are 1.0% 805

Output capacitor values and voltage ratings

	ceramic	electrolyte
7V:	100u / 16V	10m / 16V
12V:	47u / 25V	5.6m / 25V
17V:	47u / 25V	3.9m / 35V
24V:	22u / 50V	2.7m / 50V

Output filter: 50dB suppression at 260kHz

U1 LTC3703EG — MODE/SYNC, FSET, COMP, FB, IMAX, INV, RUN/SS, GND, VIN, BOOST, TG, SW, VCC, DRVCC, BG, BGRTN

U4 LTC3703EG — MODE/SYNC, FSET, COMP, FB, IMAX, INV, RUN/SS, GND, VIN, BOOST, TG, SW, VCC, DRVCC, BG, BGRTN

Q1, Q2, Q3, Q4 FDB3682 / FDB3652; Q13, Q14, Q16, Q17 FDB3682 / FDB3652

D2, D9 100V STPS41H100; D1, D8 100V; D3, D4 9.1V; D10, D11, D15, D16, D17 BAT54

Q5, Q11 MMBT3906; Q7, Q8 MMBT3906; Q18 BC856ALTI

U2, U5 OP184ES; U7 TL431; U8, U9 LM317S (ADJ, IN, OUT)

L1, L4, L5 100uH; L2, L7 2.2uH; L3 220u; L6 220u

S1 Thermal switch, 70C

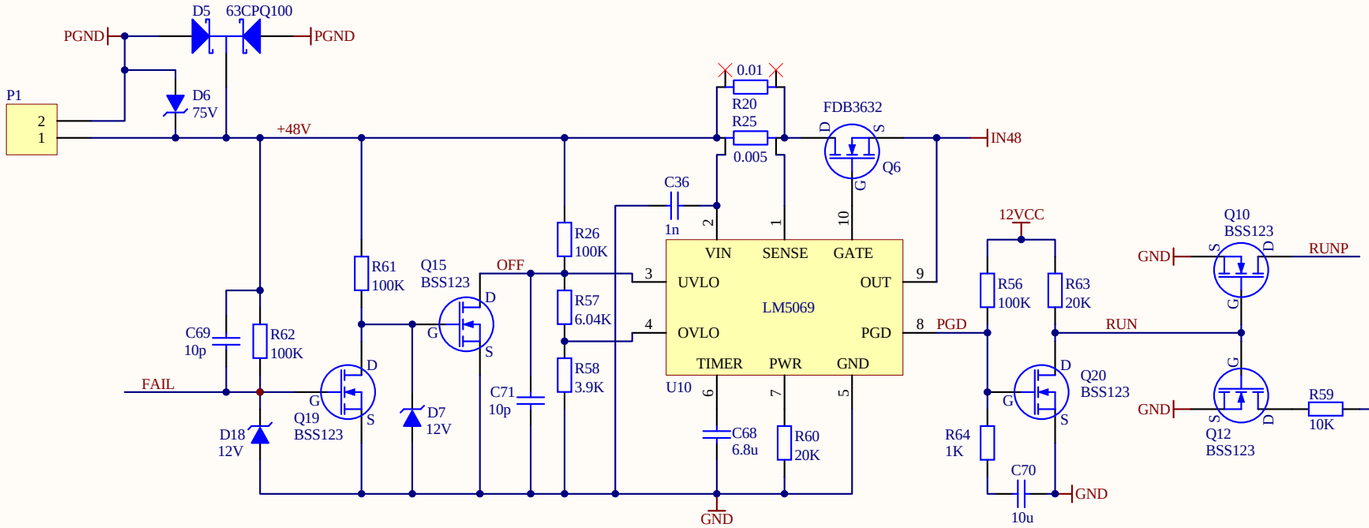
P2: PV, PGND; P3: PGND, NV

TP1 PV; TP2, TP3 PGND; TP5 NV; TP6, TP7 NGND; TP8 NVCC

DUMMY: RUNP, RUNN, SYNC, FAIL, PISENS, NISENS

Title	Synchronous Buck Regulator: PM
Size	B
Number	D060431
Revision	D
Date:	2/28/2008
Sheet	2 of 5
File:	C:\User\..\PowerSupplyPM1.SchDoc
Drawn By:	Paul Schwinberg/Daniel Sigg

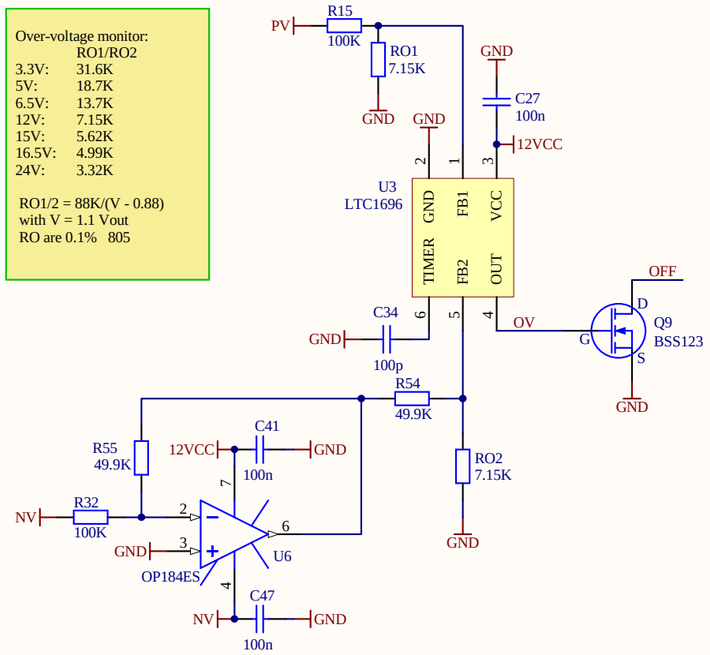
48V DC nominal
20A or smaller fuse required

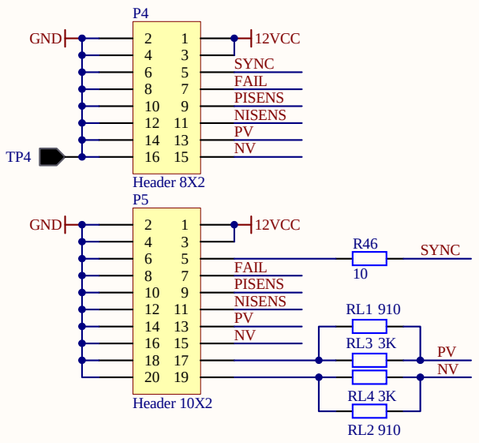


Over-voltage monitor:

	RO1/RO2
3.3V:	31.6K
5V:	18.7K
6.5V:	13.7K
12V:	7.15K
15V:	5.62K
16.5V:	4.99K
24V:	3.32K

RO1/2 = 88K/(V - 0.88)
with V = 1.1 Vout
RO are 0.1% 805





Setting the LED current:

	RL1/RL2
3.3V:	124
5V:	255
6.5V:	374
12V:	910
15V:	1.30K
16.5V:	1.50K
24V:	3.00K

RL1/2 = RL3/4 V /
(ILED RL3/4 - V)
with V = Vout-VLED
RL are 1% 1206

Title: Synchronous Buck Regulator: PM		
Size: B	Number: D060431	Revision: D
Date: 2/28/2008		Sheet 3 of 5
File: C:\User\..\PowerSupplyPM2.SchDoc		Drawn By: Paul Schwinberg/Daniel Sigg

Setting the output voltage:

	RX/RY
3.3V:	3.30K & 100K
5V:	1.91K
6.5V:	1.50K & 22.0K
12V:	732 & 30.0K
15V:	562
16.5V:	510
24V:	374 & 4.32K

RX/Y = 8000/(Vout-0.8)

RX1/RY1 are 0.1% 805
RX2/RY2 are 1.0% 805

Output capacitor values and voltage ratings

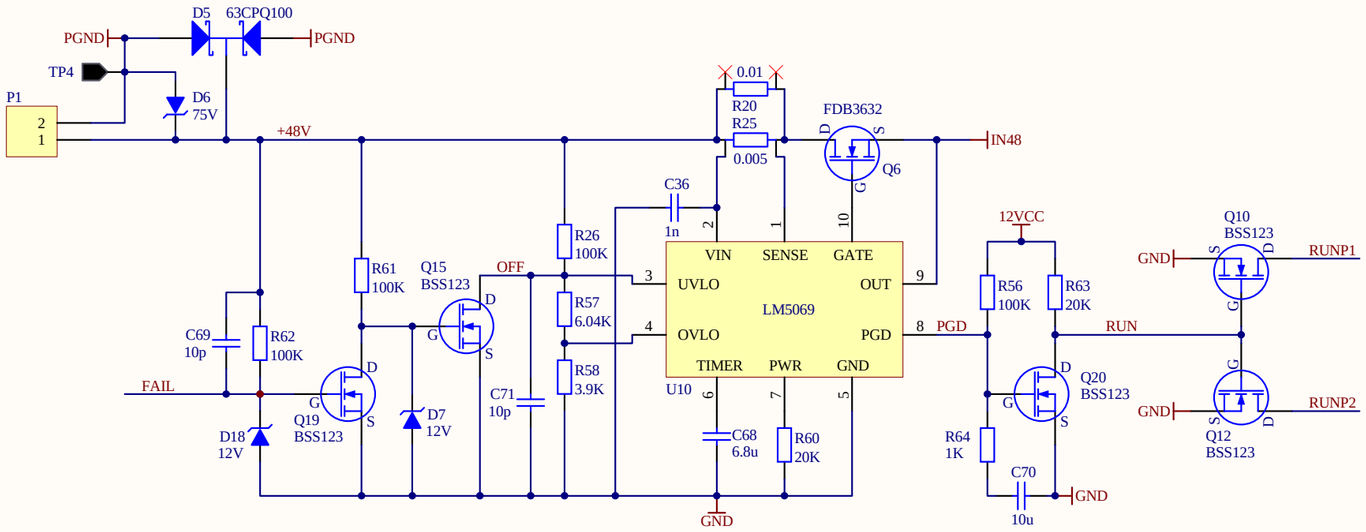
	ceramic	electrolyte
7V:	100u / 16V	10m / 16V
12V:	47u / 25V	5.6m / 25V
17V:	47u / 25V	3.9m / 35V
24V:	22u / 50V	2.7m / 50V

Output filter: 50dB suppression at 260kHz

Thermal switch, 70C

Title	Synchronous Buck Regulator: PP	
Size: B	Number: D060512	Revision: A
Date: 2/28/2008	Sheet4 of 5	
File: C:\User\..\PowerSupplyPP1.SchDoc	Drawn By: Paul Schwinberg/Daniel Sigg	

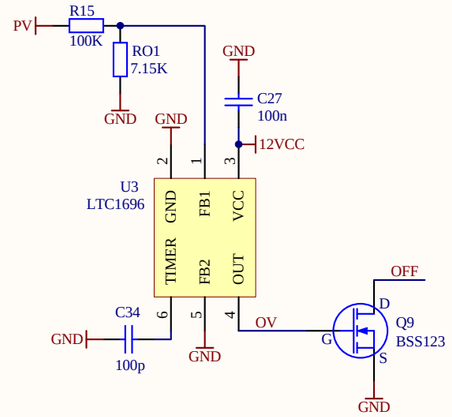
48V DC nominal
20A or smaller fuse required

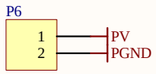


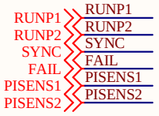
Over-voltage monitor:

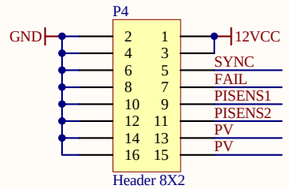
	RO1
3.3V:	31.6K
5V:	18.7K
6.5V:	13.7K
12V:	7.15K
15V:	5.62K
16.5V:	4.99K
24V:	3.32K

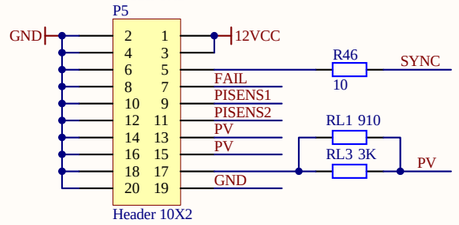
RO1 = 88K/(V - 0.88)
with V = 1.1 Vout
RO are 0.5% 805











Setting the LED current:

	RL1
3.3V:	124
5V:	255
6.5V:	374
12V:	910
15V:	1.30K
16.5V:	1.50K
24V:	3.00K

RL1 = RL3 V /
(ILED RL3 - V)
with V = Vout-VLED
RL are 1% 1206

Title: Synchronous Buck Regulator: PP		
Size: B	Number: D060512	Revision: A
Date: 2/28/2008		Sheet 5 of 5
File: C:\User\..\PowerSupplyPP2.SchDoc		Drawn By: Paul Schwinberg/Daniel Sigg