

SMPS power pre-regulator with 100% duty cycle

TITLE: EEZ DIB DCP405 r2B7

Document Number:

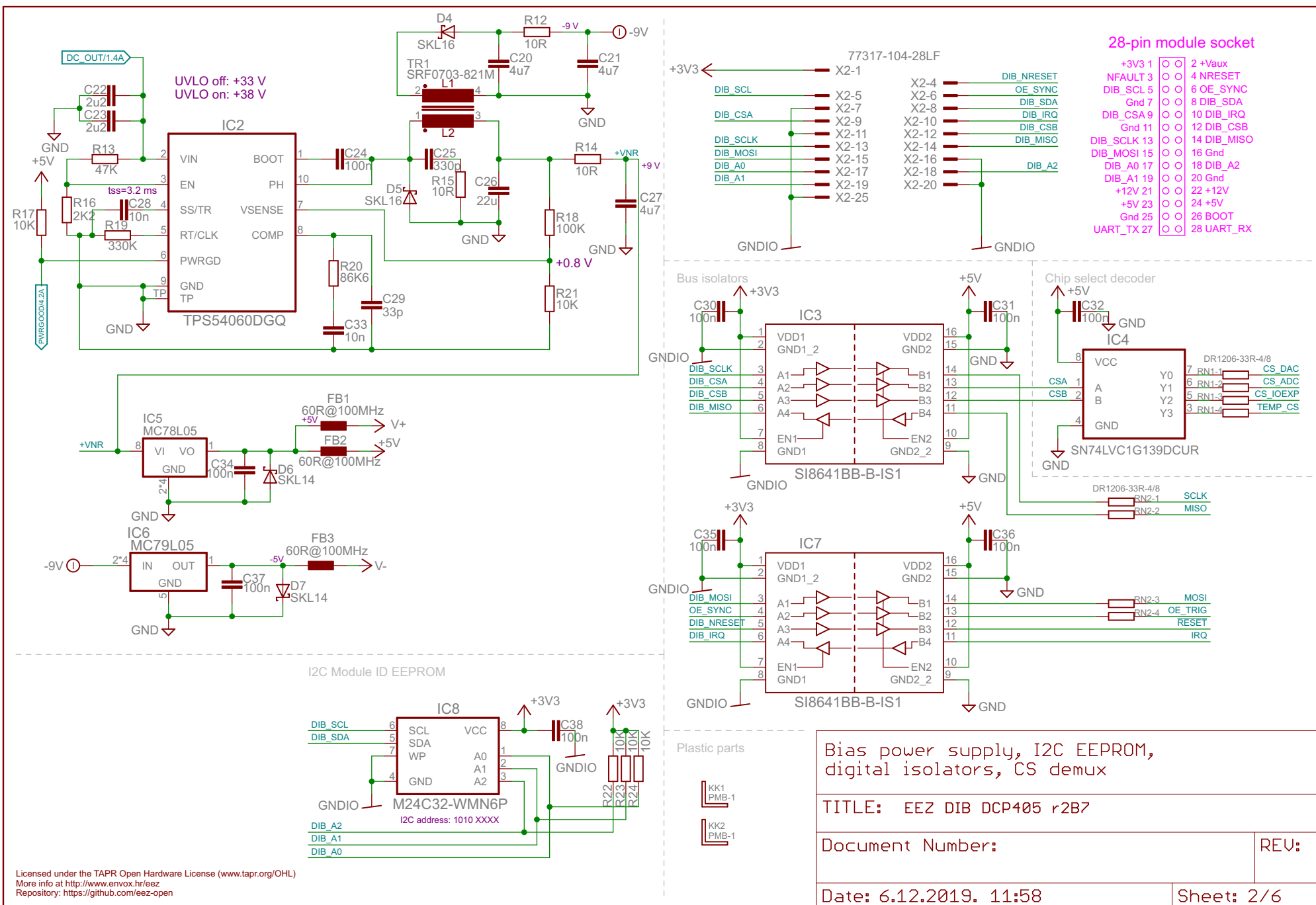
REV:

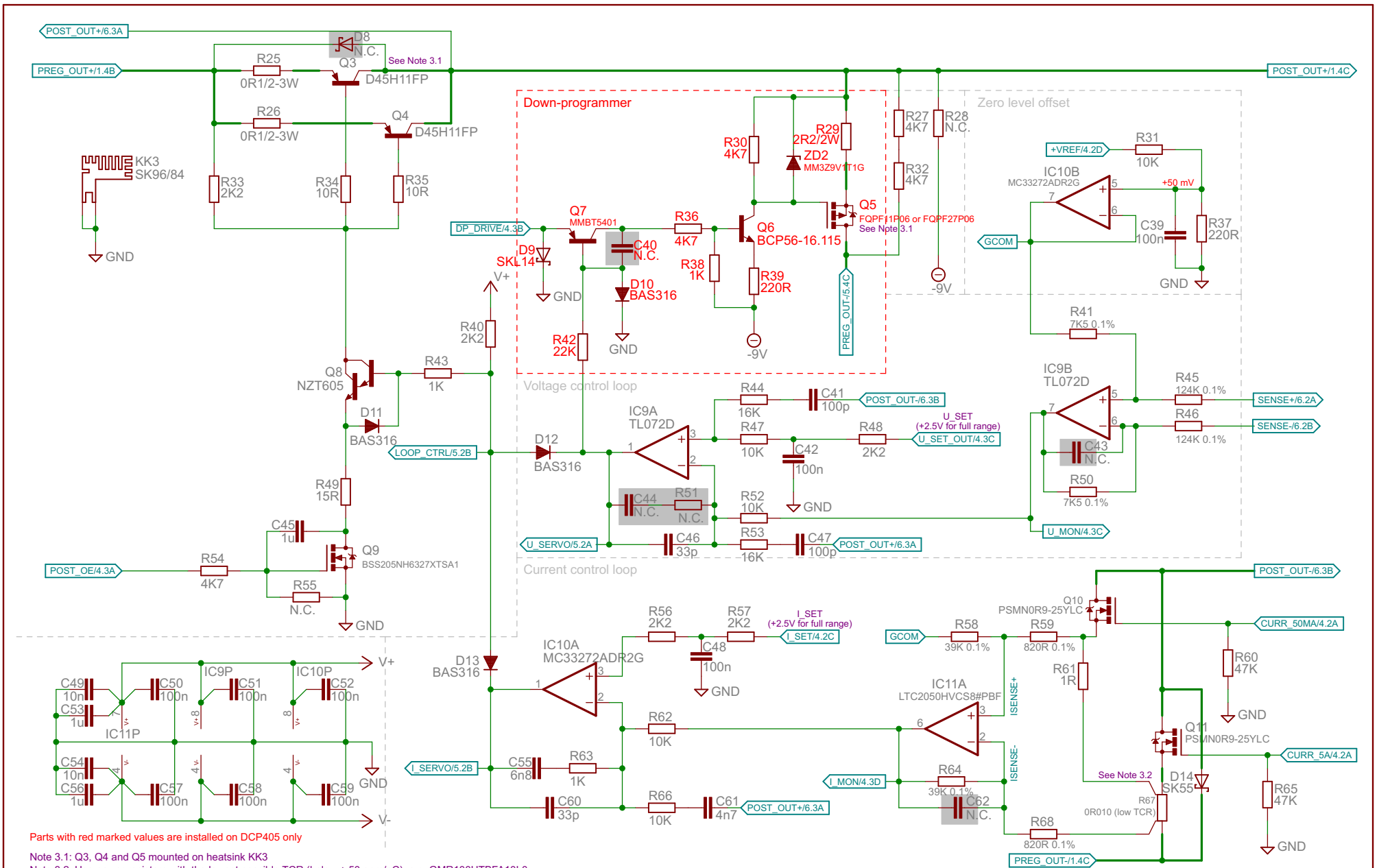
Date: 6.12.2019. 11:58

Sheet: 1/6

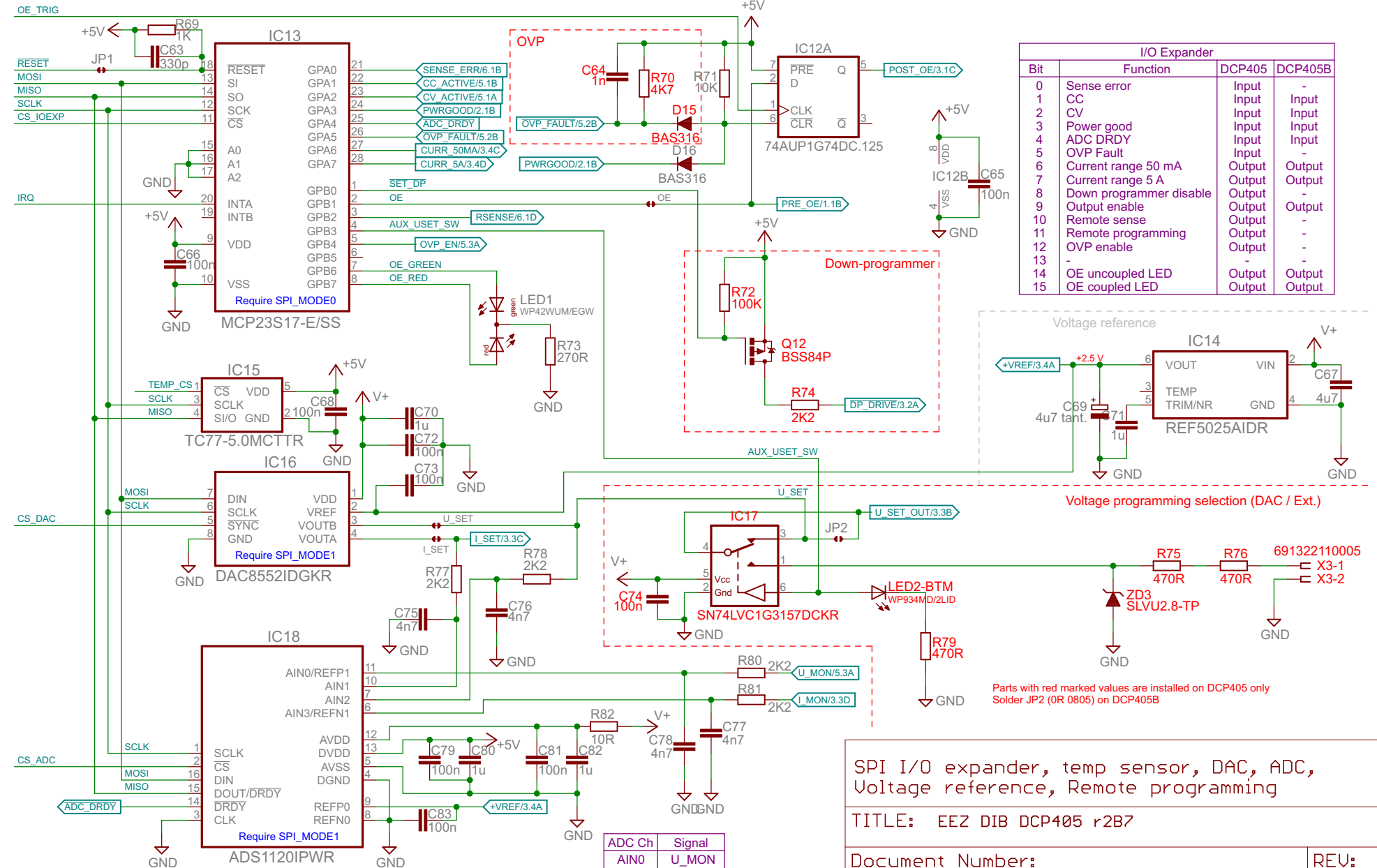
Note 1.1: Possible alternative AUIRFR5305, IRFR5305, SPD30P06P or other with similar or lower input capacitance  
 Note 1.2: WE 7447709330, WE 7443551331, Coilcraft MSS1210-333, Coilcraft XAL1510-333, Vishay IHLP4040DZER470M11, etc.

Licensed under the TAPR Open Hardware License ([www.tapr.org/OHL](http://www.tapr.org/OHL))  
 More info at <http://www.envox.hr/eez>  
 Repository: <https://github.com/eez-open>

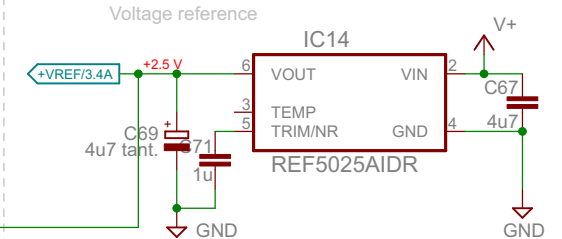




# Digital control (SPI)



I/O Expander			
Bit	Function	DCP405	DCP405B
0	Sense error	Input	-
1	CC	Input	Input
2	CV	Input	Input
3	Power good	Input	Input
4	ADC DRDY	Input	Input
5	OVP Fault	Input	-
6	Current range 50 mA	Output	Output
7	Current range 5 A	Output	Output
8	Down programmer disable	Output	-
9	Output enable	Output	Output
10	Remote sense	Output	-
11	Remote programming	Output	-
12	OVP enable	Output	-
13	-	-	-
14	OE uncoupled LED	Output	Output
15	OE coupled LED	Output	Output



## Voltage programming selection (DAC / Ext.)

Parts with red marked values are installed on DCP405 only  
Solder JP2 (0R 0805) on DCP405B

SPI I/O expander, temp sensor, DAC, ADC, Voltage reference, Remote programming

TITLE: EEZ DIB DCP405 r2B7

Document Number:

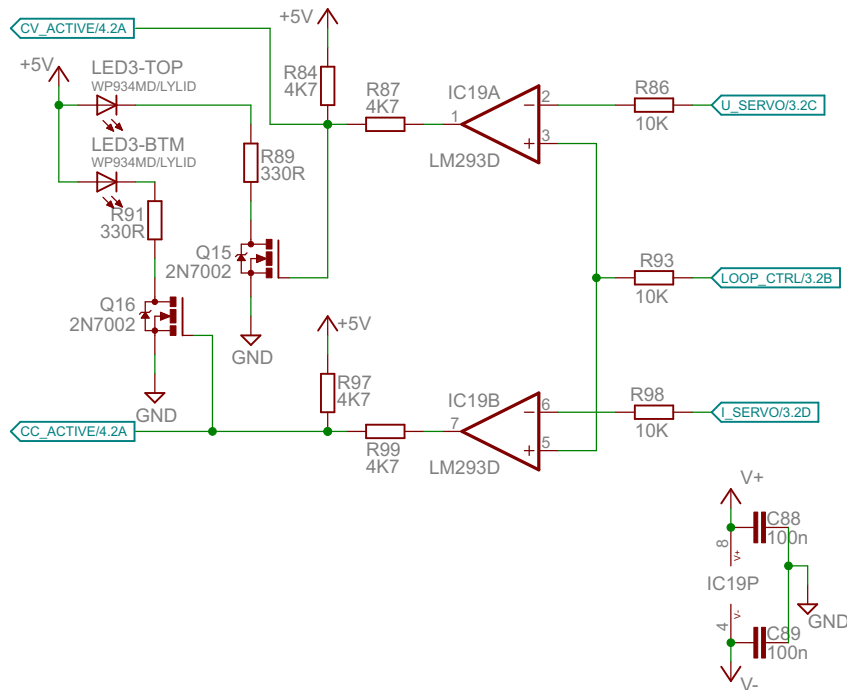
REV:

Date: 6.12.2019. 11:58

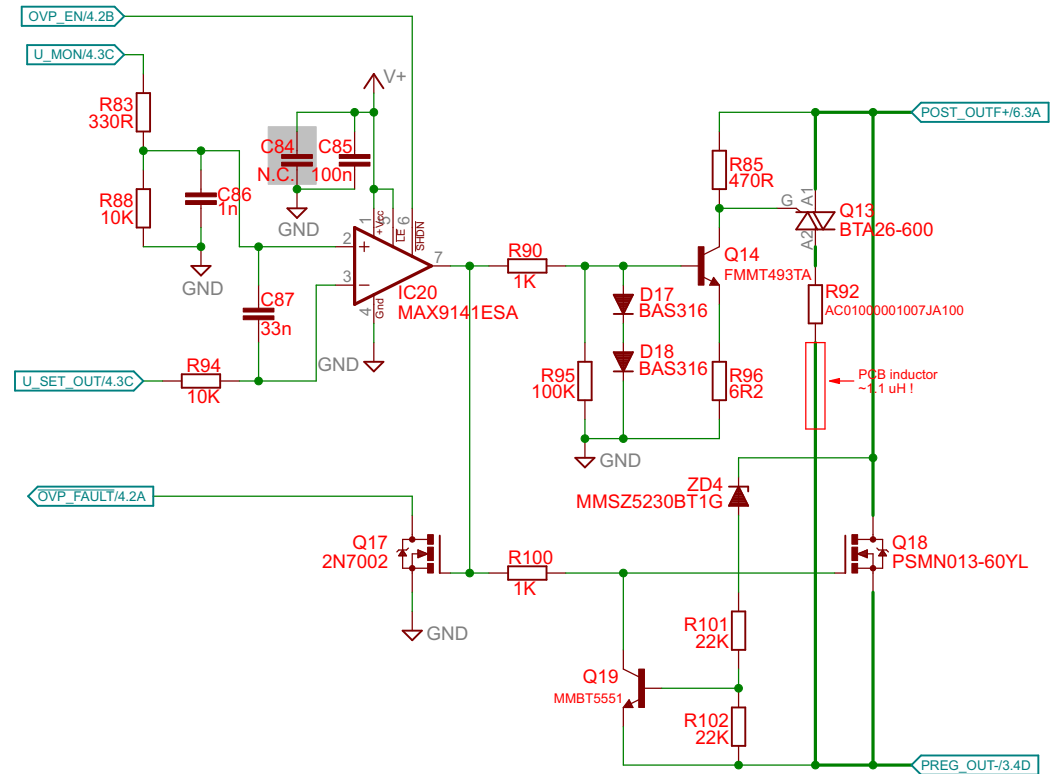
Sheet: 4/6

ADC Ch	Signal
AIN0	U_MON
AIN1	I_SET
AIN2	U_SET
AIN3	I_MON

# Constant Voltage (CV) and Constant Current (CC) mode detection and indication



## Over-voltage protection (OVP)



CC/CV mode detection and indication, OVP

TITLE: EEZ DIB DCP405 r2B7

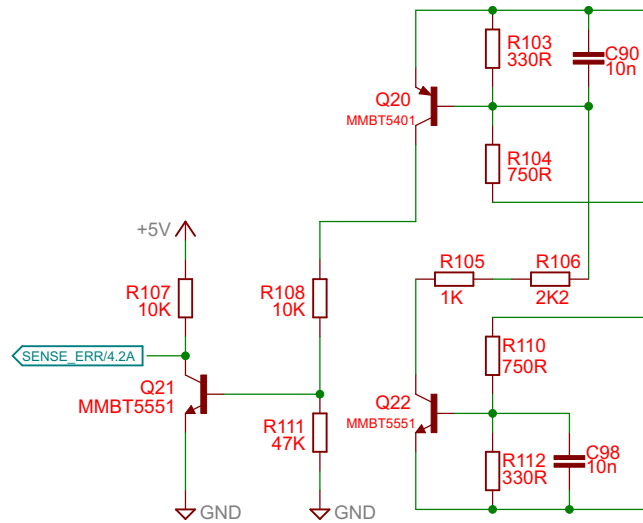
Document Number:

REV:

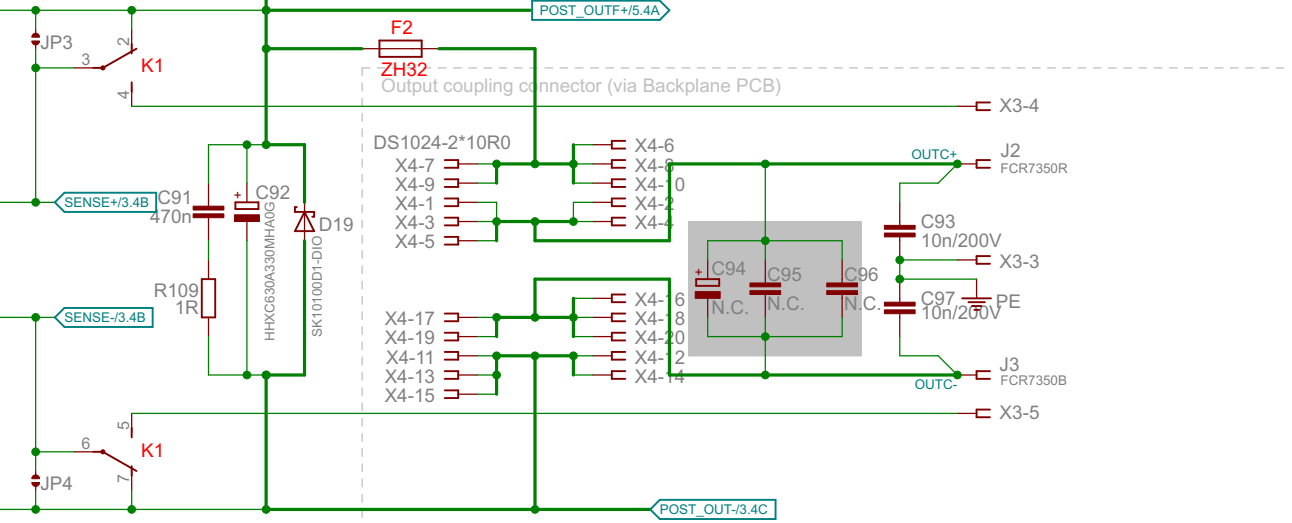
Date: 6.12.2019. 11:58

Sheet: 5/6

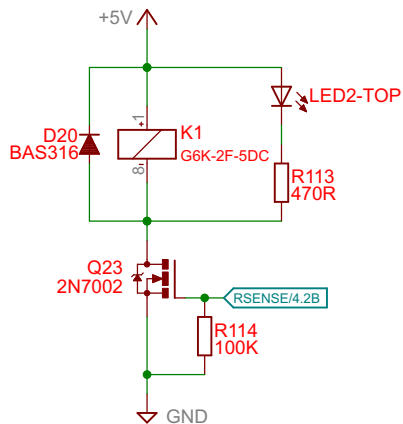
## Remote sense reverse polarity detection



## Power output section



## Remote sense selection



## 20-pin power socket

OUTC+ 1	2 OUTC+
OUTC+ 3	4 OUTC+
OUTC+ 5	6 POST_OUT+ (fused)
POST_OUT+ (fused) 7	8 POST_OUT+ (fused)
POST_OUT+ (fused) 9	10 POST_OUT+ (fused)
POST_OUT- 11	12 POST_OUT-
POST_OUT- 13	14 POST_OUT-
POST_OUT- 15	16 OUTC-
OUTC- 17	18 OUTC-
OUTC- 19	20 OUTC-

Rsense polarity protection  
Output coupling, Rsense relay

TITLE: EEZ DIB DCP405 r2B7

Document Number:

REV:

Date: 6.12.2019. 11:58

Sheet: 6/6