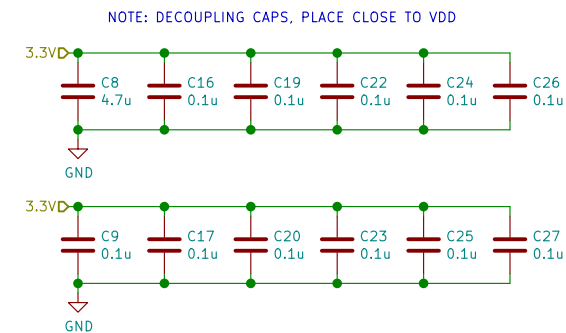


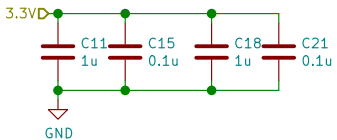
## STM32H7 MICROCONTROLLER



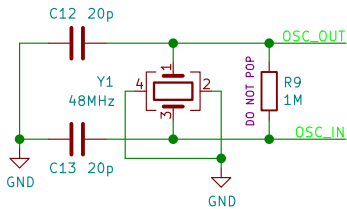
NOTE: DECOUPLING CAPS, PLACE CLOSE TO VDD33\_USB



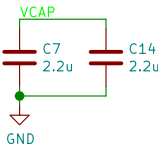
NOTE: DECOUPLING CAPS, PLACE CLOSE TO VDDA



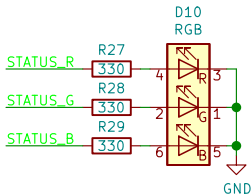
NOTE: PLACE CRYSTAL CLOSE TO OSC\_OUT/OSC\_IN



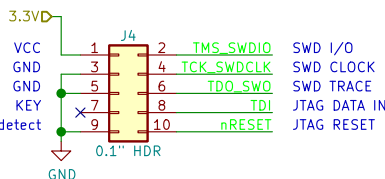
NOTE: DECOUPLING CAPS, PLACE CLOSE TO VCAP1/VCAP2



### RGB STATUS LED



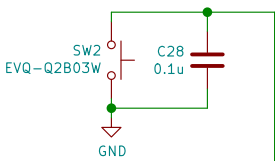
### JTAG/SERIAL WIRE DEBUG



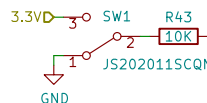
#### MCU ALTERNATE PIN FUNCTIONS:

- PA0: TIM2\_CH1
- PA1: TIM5\_CH2
- PA2: TIM15\_CH1
- PA4: DAC\_OUT1
- PA7: TIM14\_CH1
- PA8: I2C1\_SCL
- PA9: USART1\_TX
- PA10: USART1\_RX
- PB7: TIM4\_CH2
- PB8: TIM16\_CH1
- PB9: TIM17\_CH1
- PC6: TIM3\_CH1
- PC9: I2C1\_SDA

### RESET BUTTON



### BOOT SWITCH



OSC\_OUT 23  
OSC\_IN 24

TP20 IO\_5\_PU 56  
TP21 IO\_5\_PD 57  
TP22 IO\_6\_PU 87  
TP23 IO\_6\_PD 88  
TP24 IO\_7\_PU 89  
TP25 IO\_7\_PD 90  
TP26 IO\_8\_PU 91  
TP27 IO\_8\_PD 92  
TP28 PG0  
TP29 PG1  
TP30 PG2  
TP31 PG3  
TP32 PG4  
TP33 PG5  
TP34 PG6  
TP35 PG7

TP36 STATUS\_R 10  
TP37 STATUS\_G 11  
TP38 STATUS\_B 12  
TP39 PF0  
TP40 PF1  
TP41 PF2  
TP42 PF3  
TP43 PF4  
TP44 PF5  
TP45 PF6  
TP46 PF7  
TP47 PF8  
TP48 PF9  
TP49 PF10  
TP50 PF11  
TP51 PF12  
TP52 PF13  
TP53 PF14  
TP54 PF15

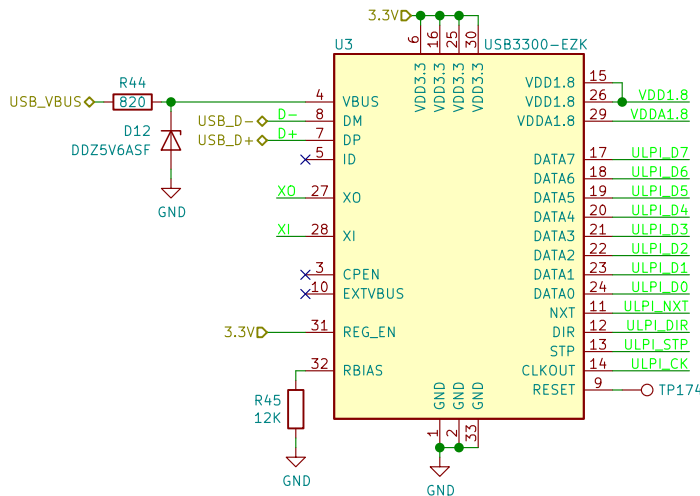
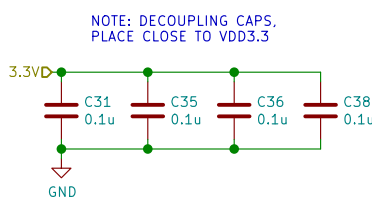
TP49 IO\_1\_IN 141  
TP50 IO\_2\_IN 142  
TP51 IO\_3\_IN 1  
TP52 IO\_4\_IN 2  
TP53 IO\_5\_IN 3  
TP54 IO\_6\_IN 4  
TP55 IO\_7\_IN 5  
TP56 IO\_8\_IN 6  
TP57 IO\_1\_OUT 59  
TP58 IO\_2\_OUT 60  
TP59 IO\_3\_OUT 63  
TP60 IO\_4\_OUT 64  
TP61 IO\_5\_OUT 65  
TP62 IO\_6\_OUT 66  
TP63 IO\_7\_OUT 67  
TP64 IO\_8\_OUT 68

TP65 IO\_1\_IN 141  
TP66 IO\_2\_IN 142  
TP67 IO\_3\_IN 1  
TP68 IO\_4\_IN 2  
TP73 IO\_1&2\_DIFF 101  
TP74 IO\_1&2\_TERM 102  
TP75 IO\_3&4\_DIFF 103  
TP76 IO\_3&4\_TERM 104

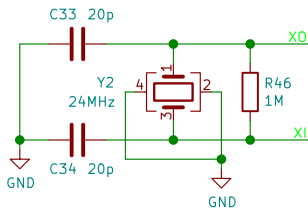
U2  
STM32H743ZITx

TP61 IO\_1\_OUT 141  
TP62 IO\_2\_OUT 142  
TP63 IO\_3\_OUT 1  
TP64 IO\_4\_OUT 2  
TP69 IO\_1\_TRIS 101  
TP70 IO\_2\_TRIS 102  
TP71 IO\_3\_TRIS 103  
TP72 IO\_4\_TRIS 104  
TP77 IO\_1\_PU 101  
TP78 IO\_2\_PU 102  
TP79 IO\_3\_PU 103  
TP80 IO\_4\_PU 104  
TP104 IO\_1\_PD 101  
TP105 IO\_2\_PD 102  
TP106 IO\_3\_PD 103  
TP107 IO\_4\_PD 104

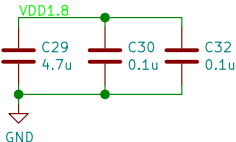
## USB 2.0 HIGH SPEED PHY



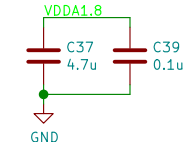
NOTE: PLACE CRYSTAL CLOSE TO XO/XI



NOTE: DECOUPLING CAPS, PLACE CLOSE TO VDD1.8



NOTE: DECOUPLING CAPS, PLACE CLOSE TO VDDA1.8



DT18 - I/O MASTER

THE UNIVERSITY OF AKRON

Sheet: /Microcontroller/

File: Microcontroller.sch

Title: MICROCONTROLLER SUBSYSTEM

Size: B

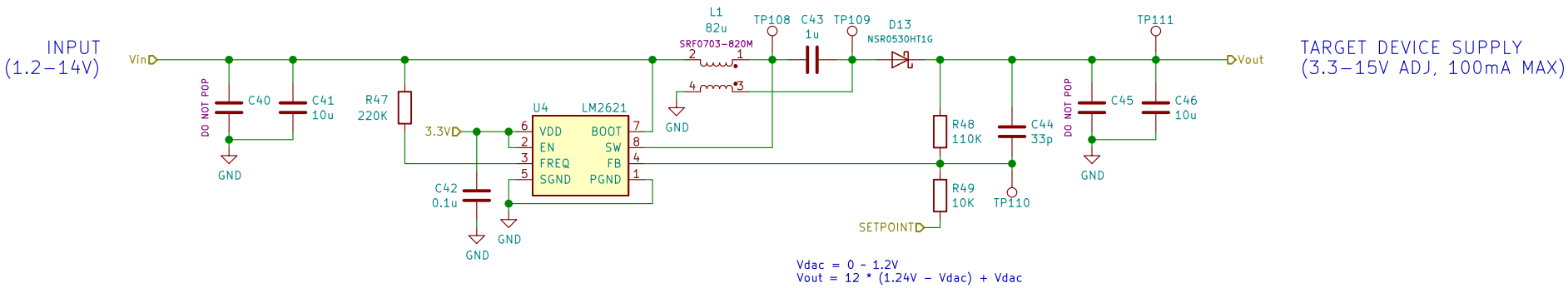
Date: 2020-02-05

Rev: A

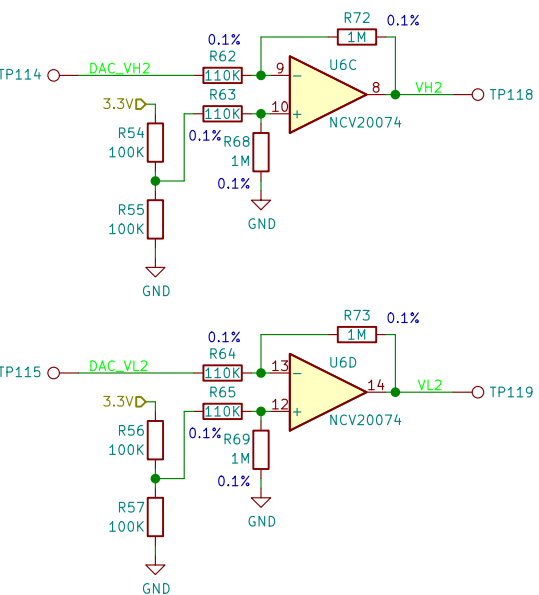
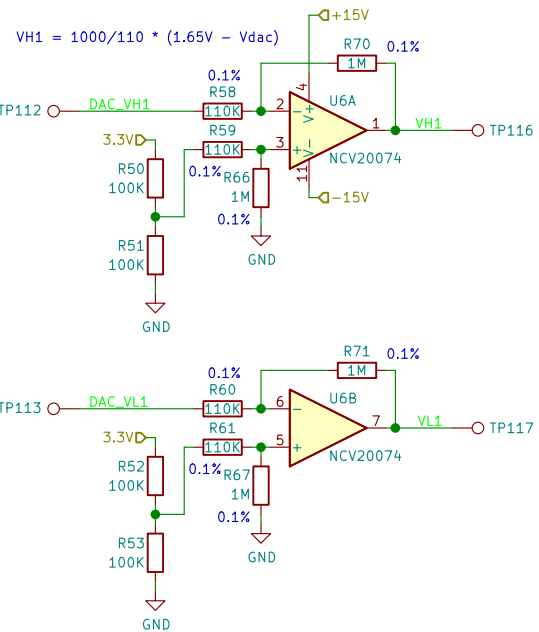
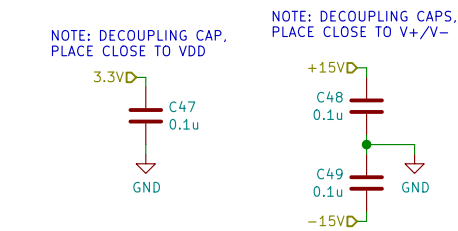
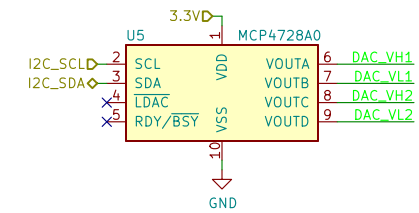
KiCad E.D.A. kicad 5.1.5

Id: 2/10

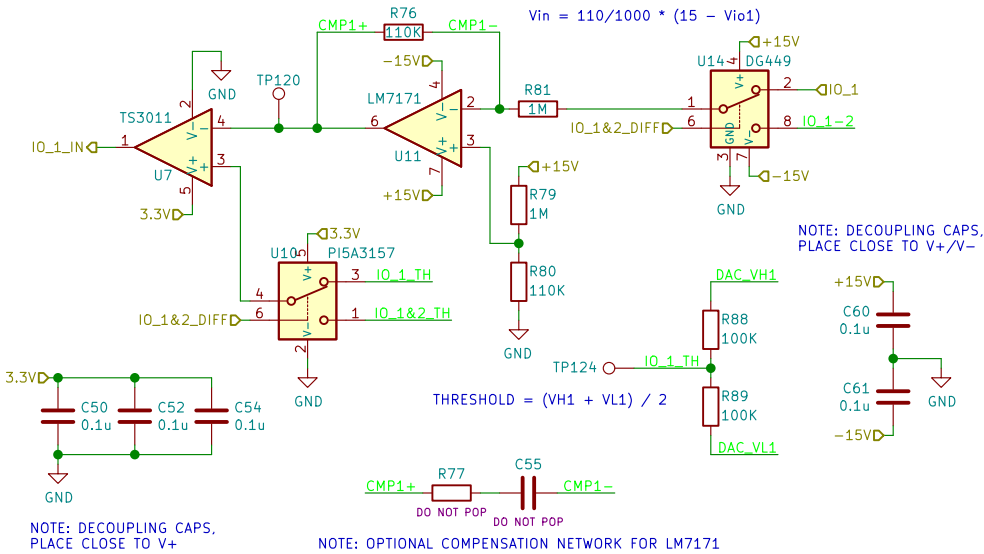
3.3–15V ADJUSTABLE REGULATOR



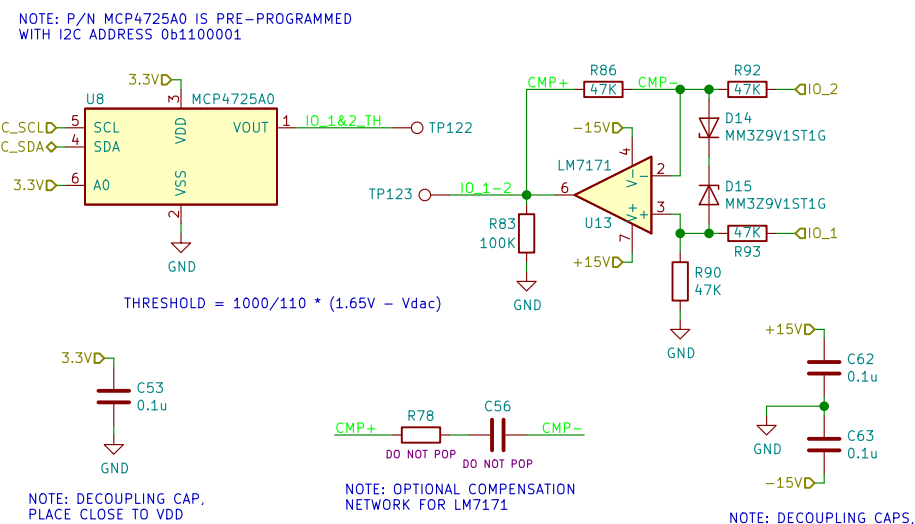
## LOGIC LEVEL GENERATOR



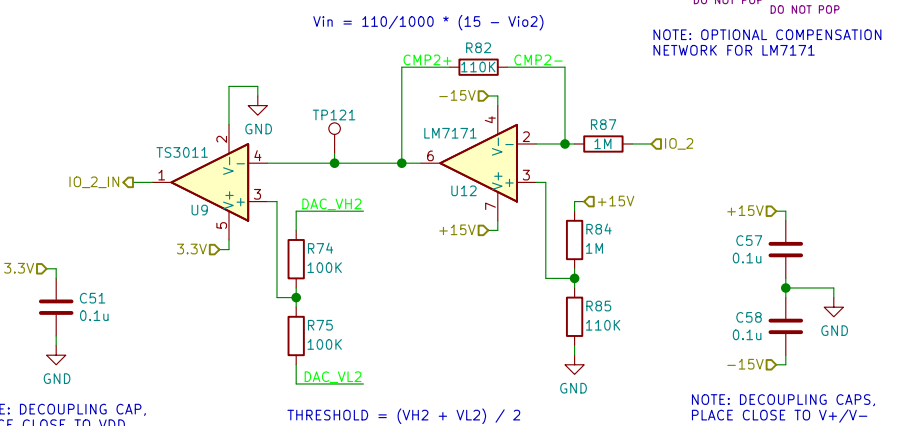
## SINGLE-ENDED RECEIVER (I/O PIN 1)



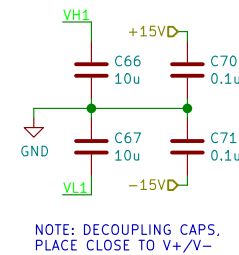
## DIFFERENTIAL RECEIVER (I/O PIN 1 - I/O PIN 2)



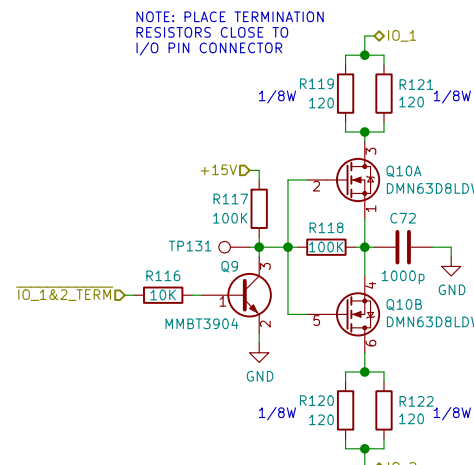
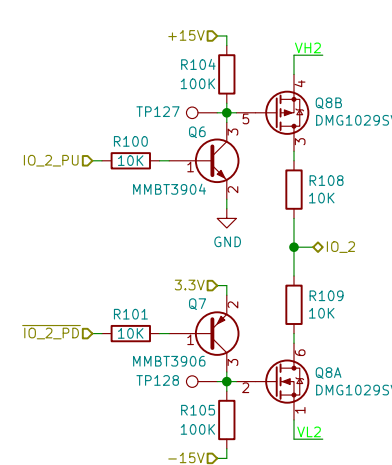
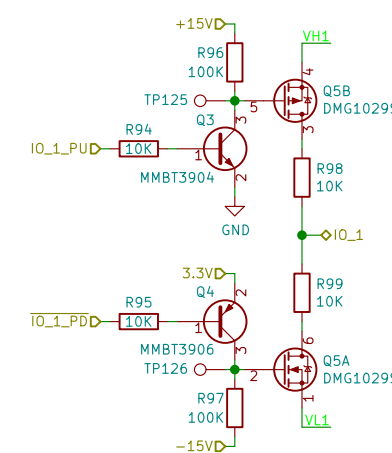
## SINGLE-ENDED RECEIVER (I/O PIN 2)



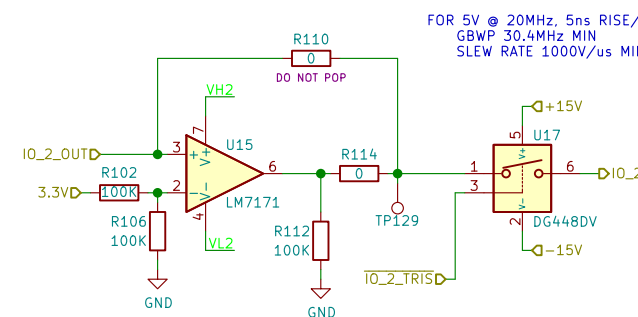
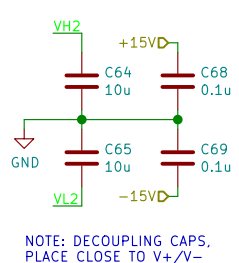
## OUTPUT DRIVER (I/O PIN 1)



## CONFIGURABLE RESISTORS

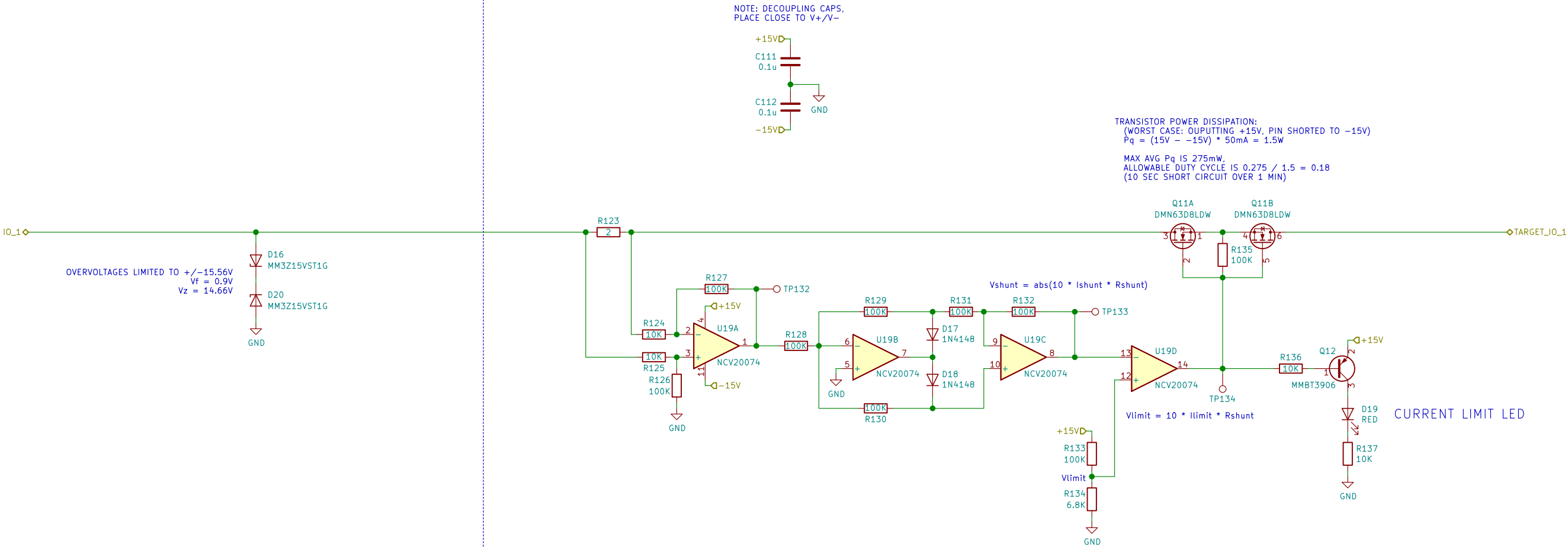


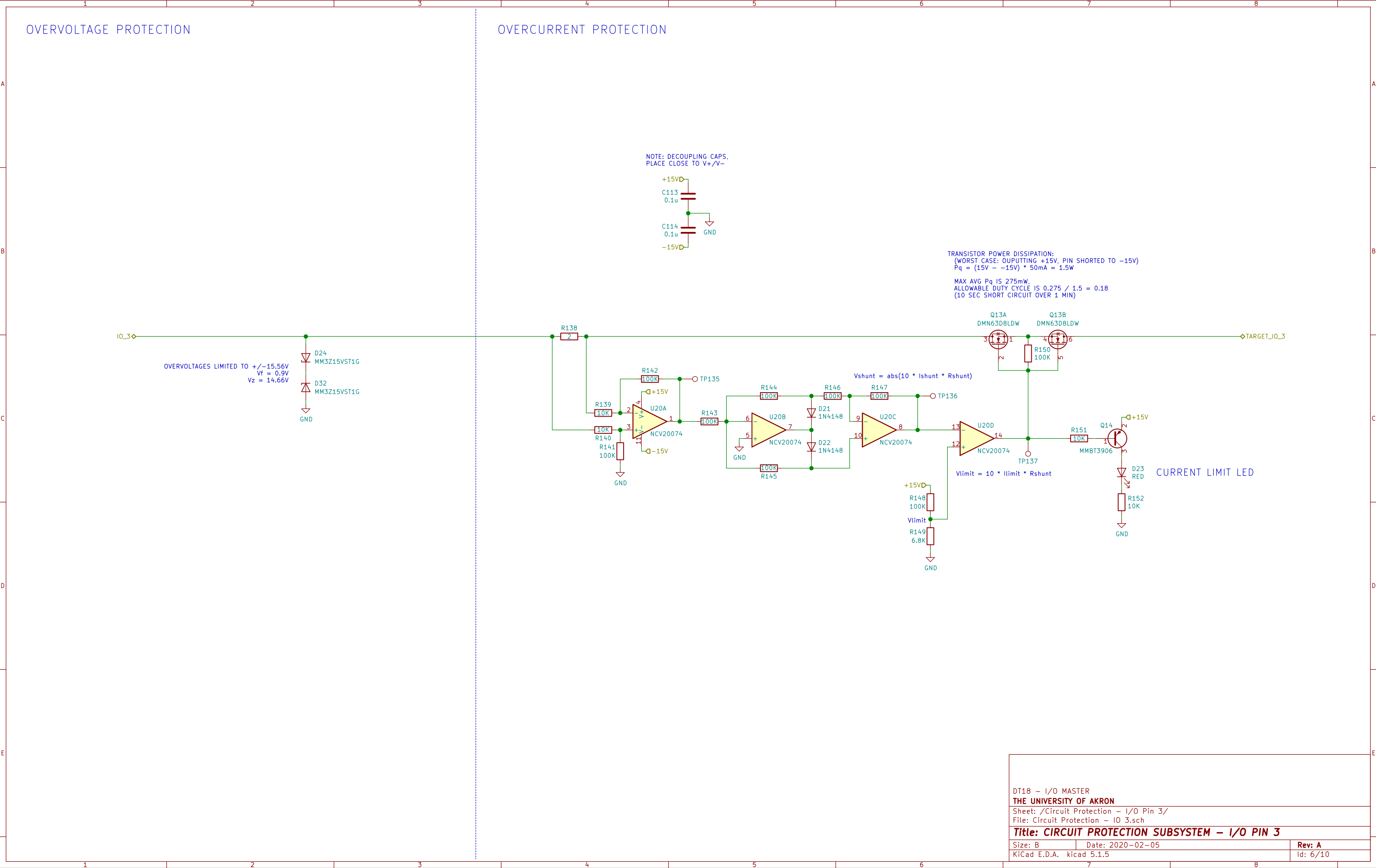
## OUTPUT DRIVER (I/O PIN 2)



OVERVOLTAGE PROTECTION

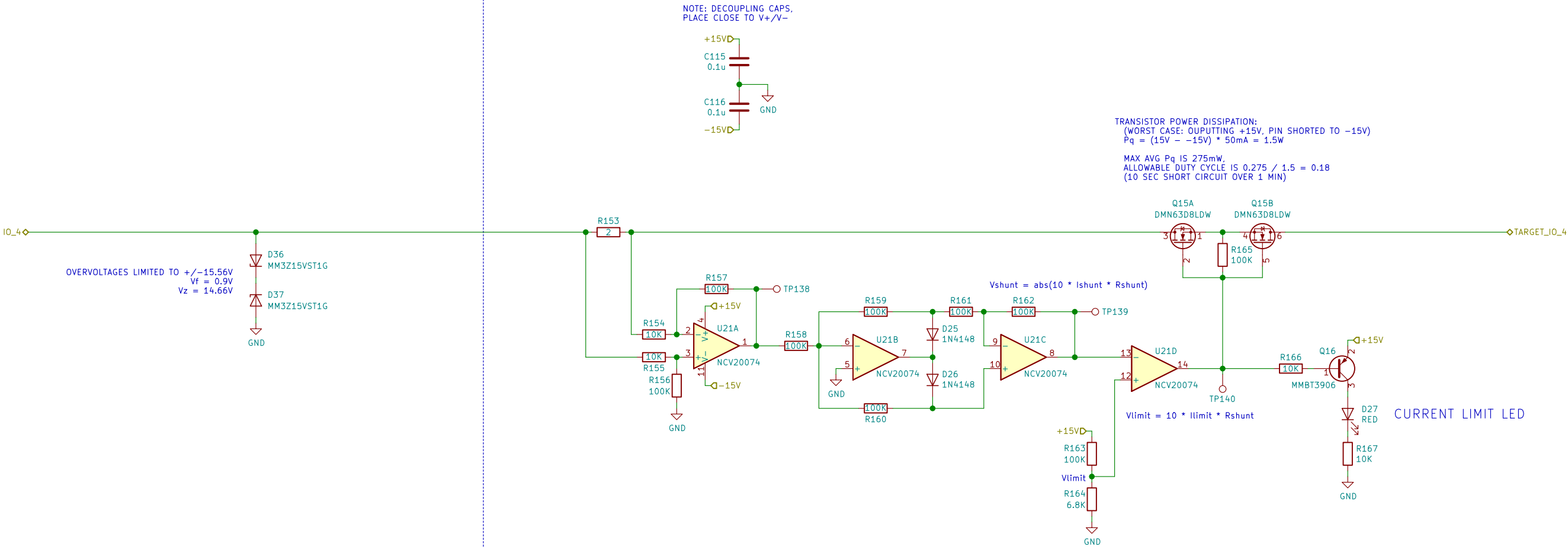
OVERCURRENT PROTECTION





OVERVOLTAGE PROTECTION

OVERCURRENT PROTECTION



1	2	3	4	5	6	7	8	
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1

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 2  
 3  
 4

11

1

5	6	7	8	
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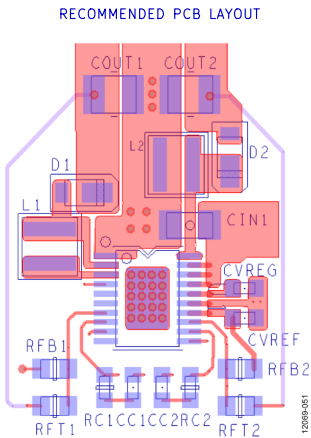
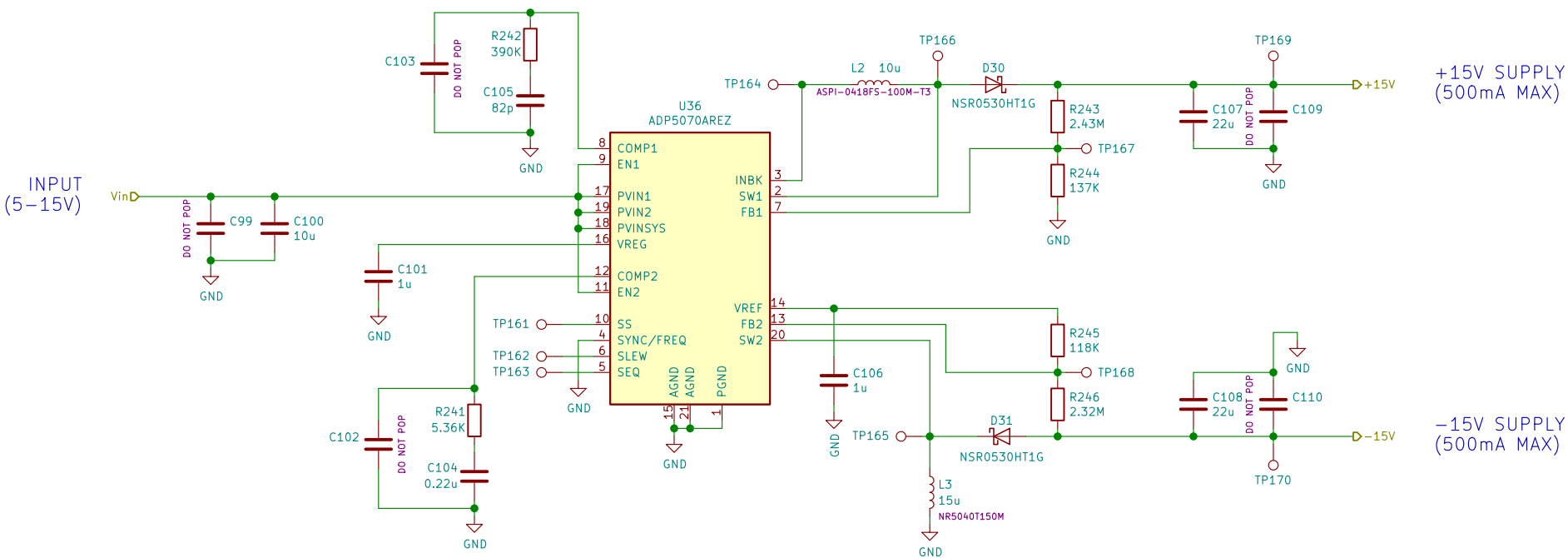
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10



+/-15V REGULATOR



OVERVOLTAGE PROTECTION

OVERCURRENT PROTECTION

