

## 01. Table of Contents:

## LED Display Power Supply, Quad-Phase 5V, 45A Buck Converter

Marquette University Senior Design 2018/2019, Group E44  
Drew Maatman, Kvein Etta, Logan Wedel, Caroline Gilger, Tuoxuan Ren



### 02. Power Input

Power Input  
Power\_Input.sch

### 03. +5V Control

POS5\_Control  
POS5\_Control.sch

### 04. +5V Phase 1

POS5\_Phase\_1  
POS5\_Phase\_1.sch

### 05. +5V Phase 2

POS5\_Phase\_2  
POS5\_Phase\_2.sch

### 06. +5V Phase 3

POS5\_Phase\_3  
POS5\_Phase\_3.sch

### 07. +5V Phase 4

POS5\_Phase\_4  
POS5\_Phase\_4.sch

### 08. +5.5V MNG

POS5P5\_MNG  
POS5P5\_MNG.sch

### 09. Power Output

Power Output  
Power\_Output.sch

### 10. Mechanical

Mechanical  
Mechanical.sch

### 11. Active Load 1

Active\_Load\_1  
Active\_Load\_1.sch

### 12. Active Load 2

Active\_Load\_2  
Active\_Load\_2.sch

### 13. Active Load 3

Active\_Load\_3  
Active\_Load\_3.sch

### 14. Loop Response

Loop\_Response  
Loop\_Response.sch

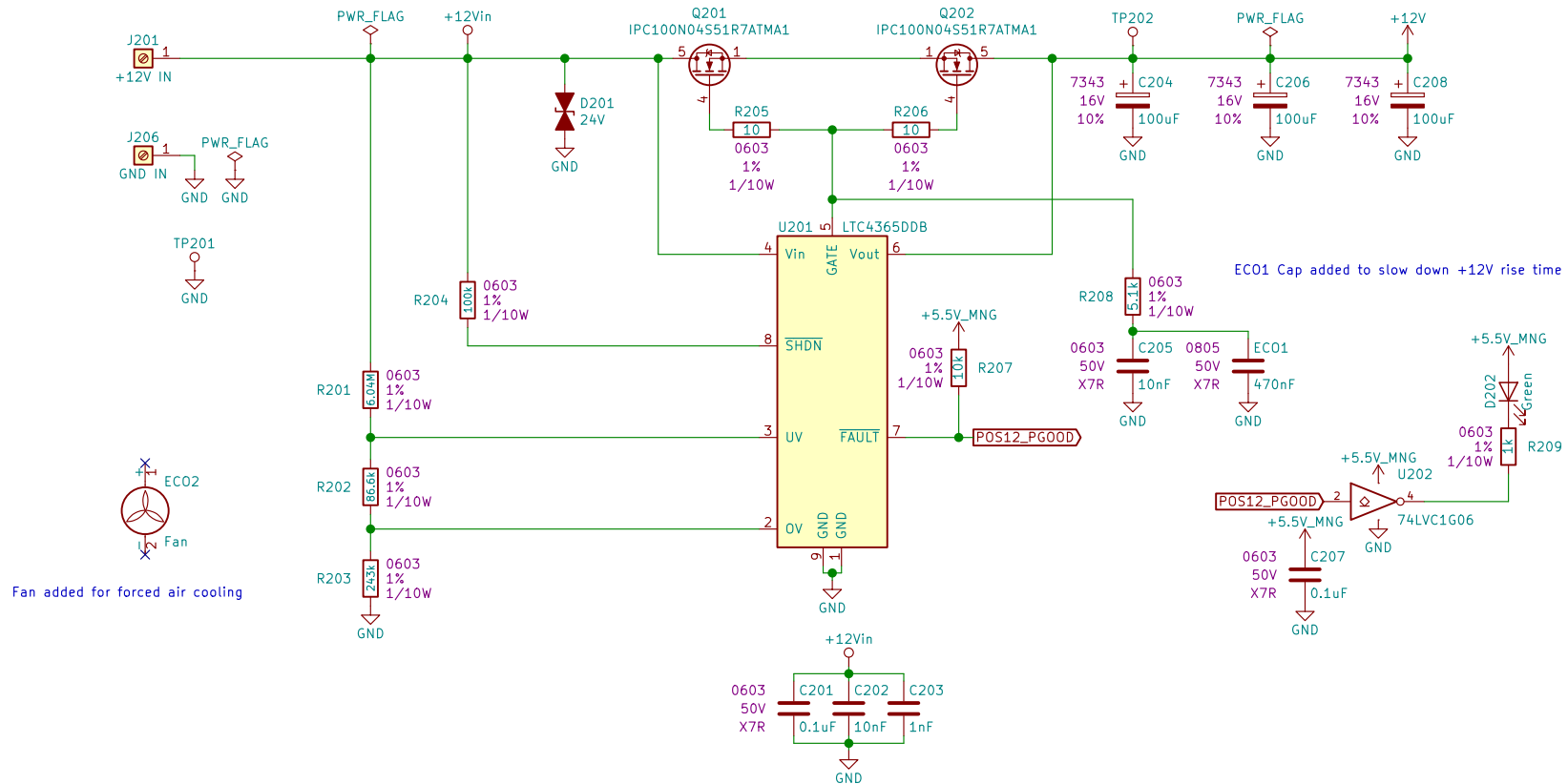
Sheet: /  
File: LTC7851\_Demo.sch

#### Title:

Size: A Date:  
KiCad E.D.A. kicad (5.0.1)-3

Rev:  
Id: 1/14

## 02. Power Input



Sheet: /Power Input/  
File: Power\_Input.sch

**Title:**

Size: A

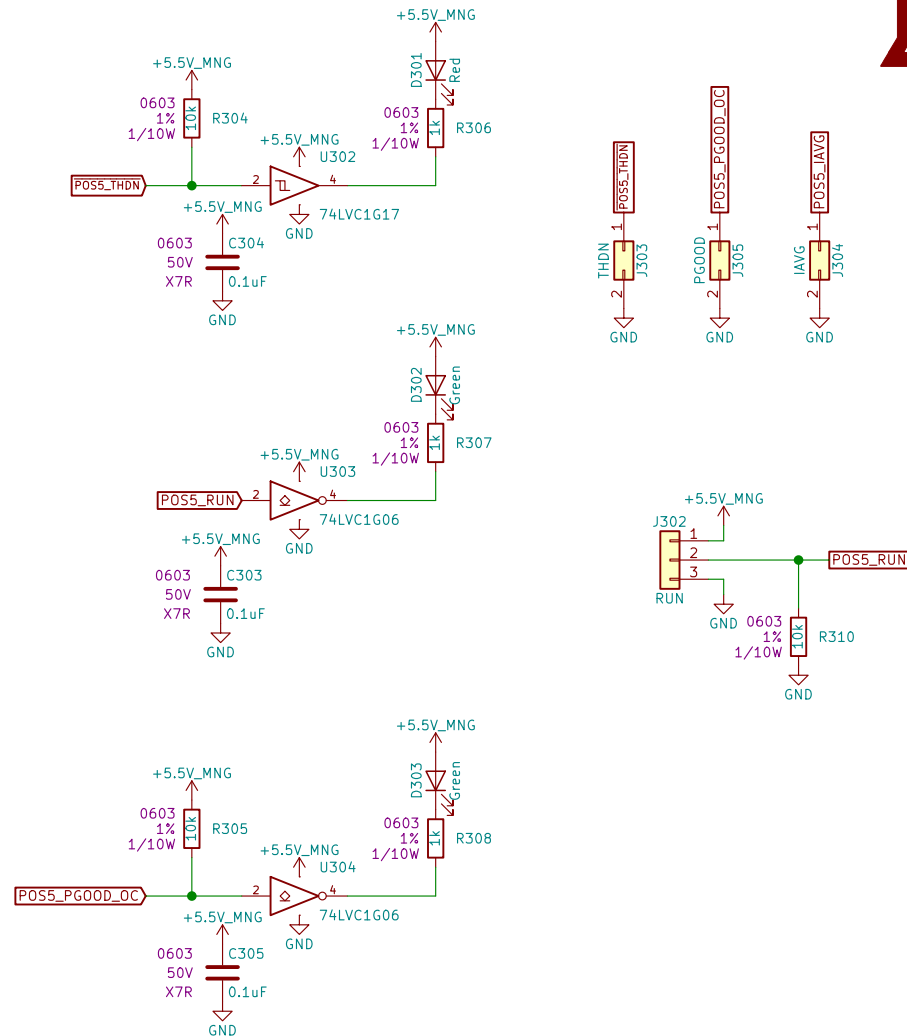
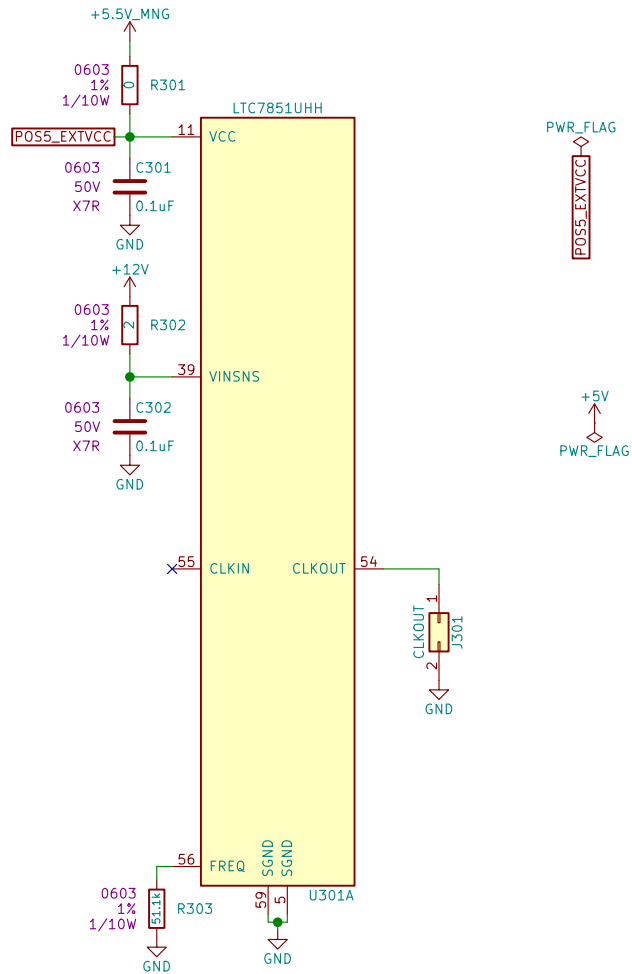
Date:

KiCad E.D.A. kicad (5.0.1)-3

**Rev:**

Id: 2/14

### 03. +5V Control



Sheet: /POS5 Control/  
File: POS5\_Control.sch

**Title:**

Size: A

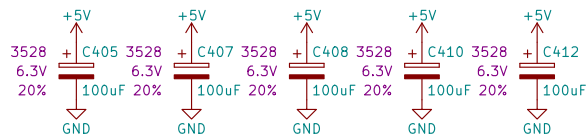
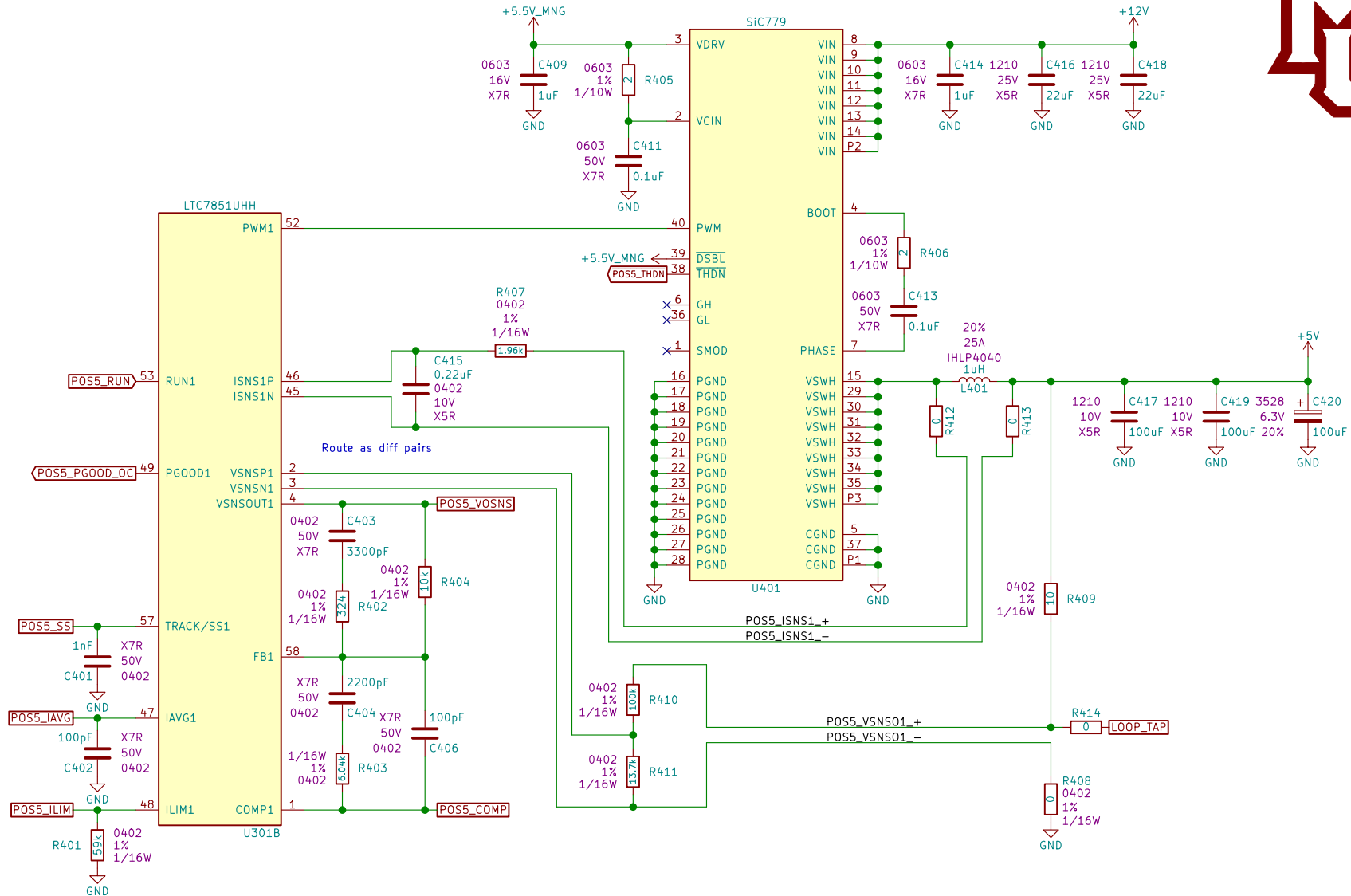
Date:

KiCad E.D.A. kicad (5.0.1)-3

**Rev:**

Id: 3/14

# 04. +5V Phase 1



Sheet: /POS5 Phase 1/  
File: POS5\_Phase\_1.sch

**Title:**

Size: A

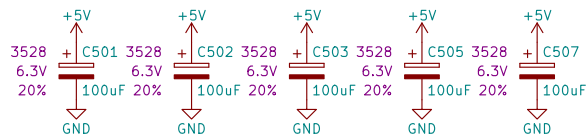
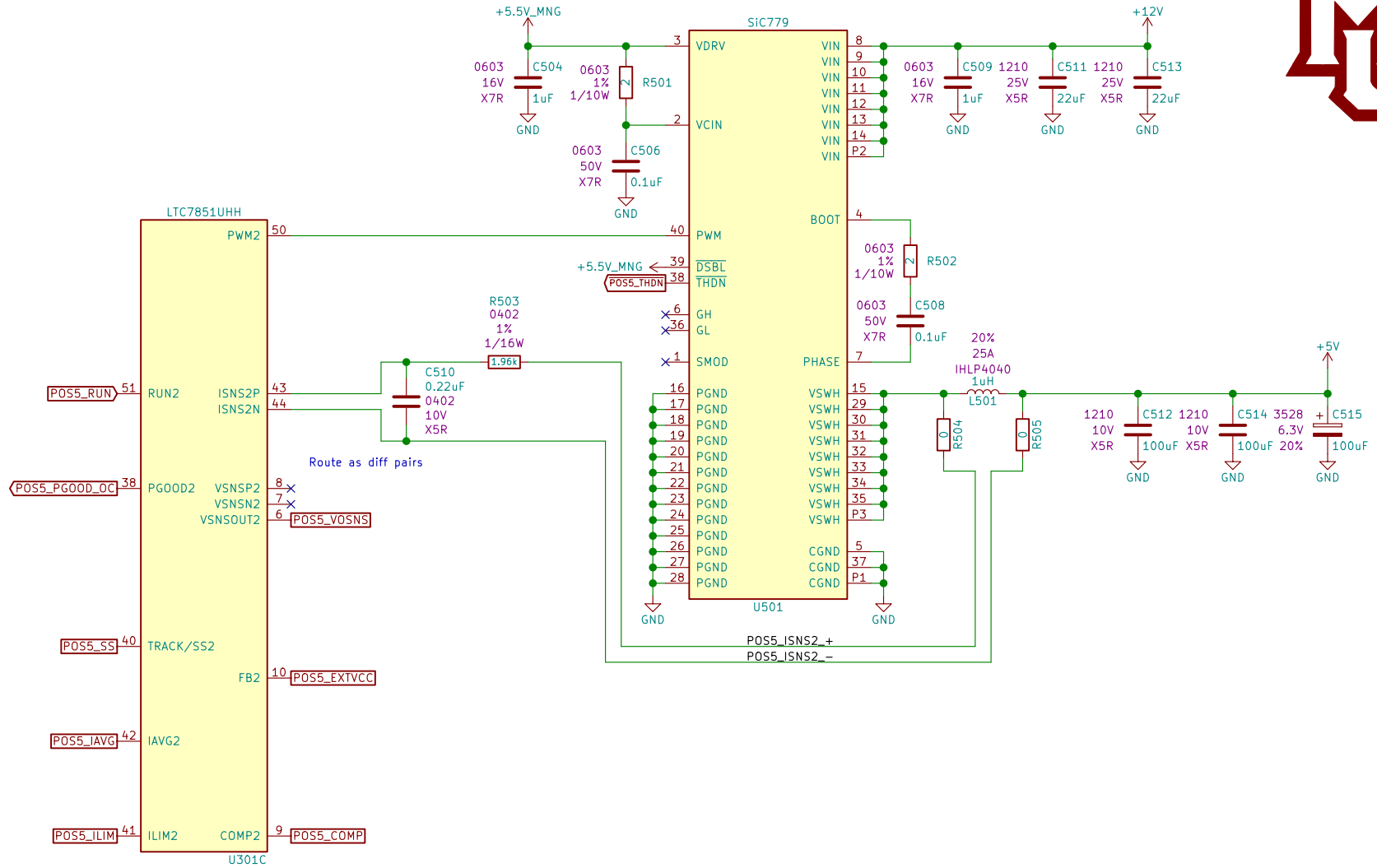
Date:

KiCad E.D.A. kicad (5.0.1)-3

**Rev:**

Id: 4/14

## 05. +5V Phase 2



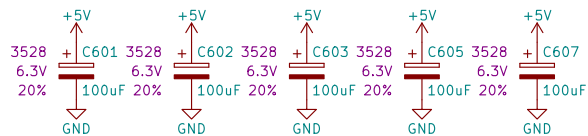
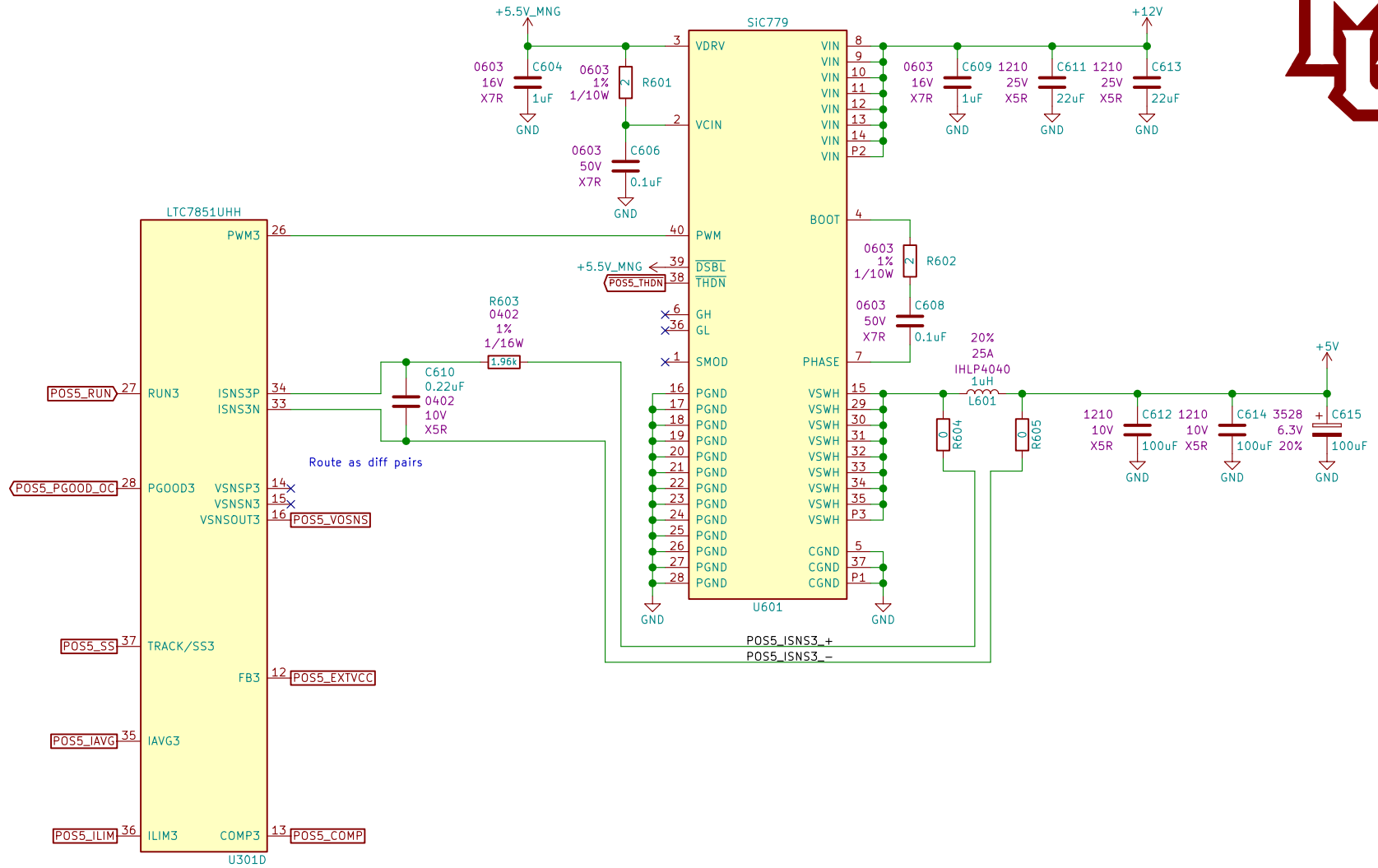
Sheet: /POS5 Phase 2/  
File: POS5\_Phase\_2.sch

**Title:**

Size: A	Date:
KiCad E.D.A.	kiCad (5.0.1)-3

Rev:  
Id: 5/14

## 06. +5V Phase 3



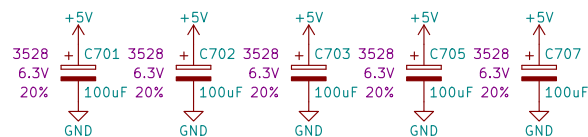
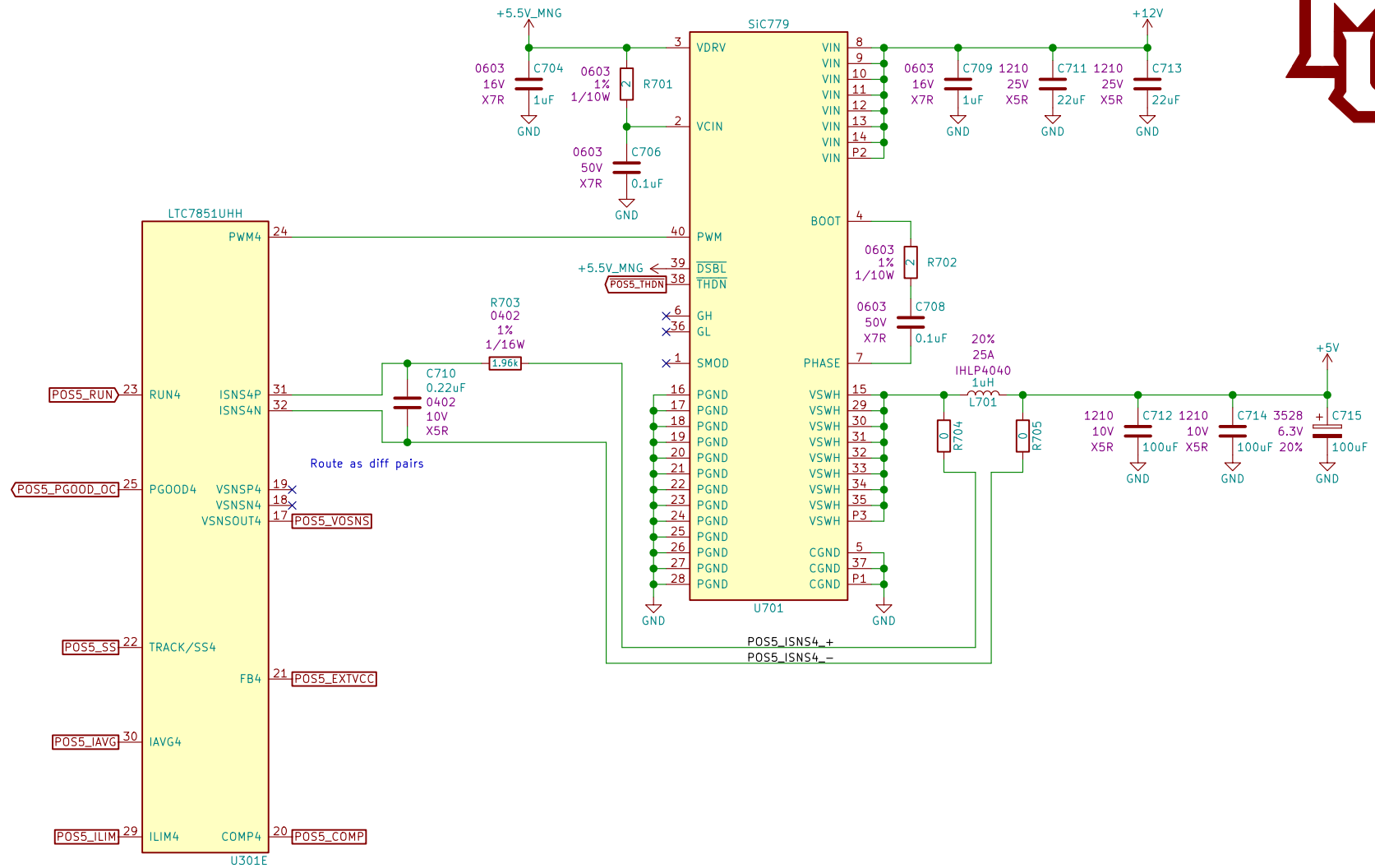
Sheet: /POS5 Phase 3/  
File: POS5\_Phase\_3.sch

**Title:**

Size: A	Date:
KiCad E.D.A.	kiCad (5.0.1)-3

Rev:  
Id: 6/14

## 07. +5V Phase 4



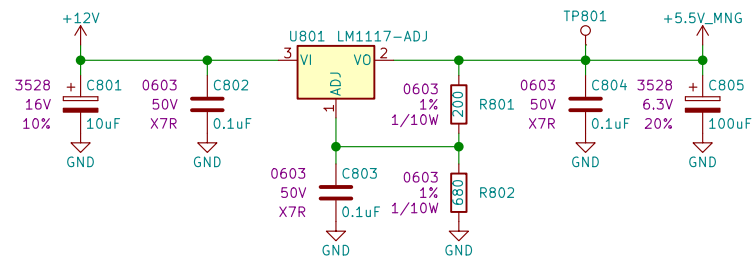
Sheet: /POS5 Phase 4/  
File: POS5\_Phase\_4.sch

**Title:**

Size: A	Date:
KiCad E.D.A.	kicad (5.0.1)–3

Rev:  
Id: 7/14

## 08. +5.5V MNG



Sheet: /POS5P5 MNG/  
File: POS5P5\_MNG.sch

### Title:

Size: A

Date:

KiCad E.D.A. kicad (5.0.1)-3

Rev:

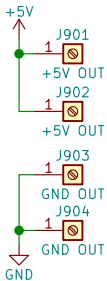
Id: 8/14



09. Power Output



Place bulk output caps close to terminals



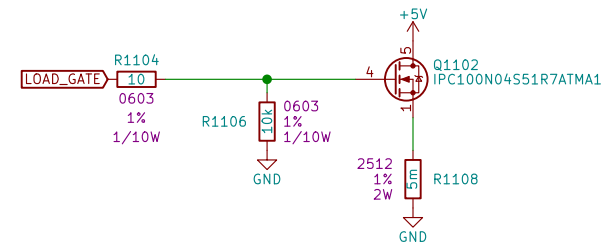
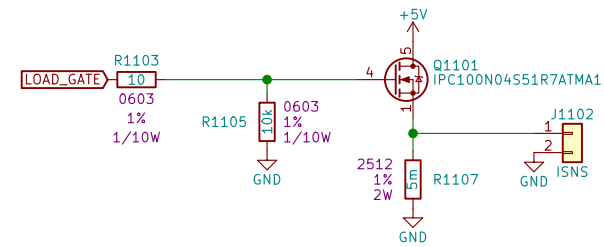
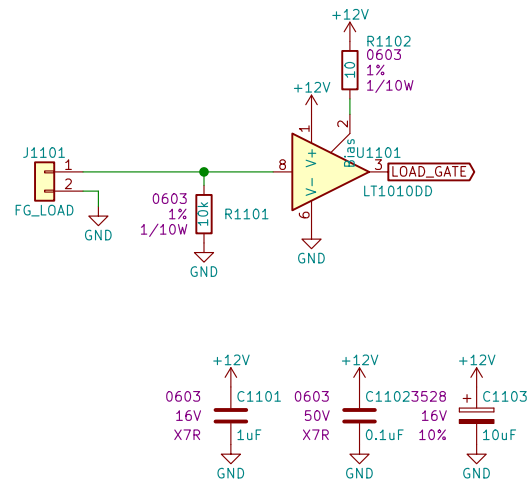
Sheet: /Power Output/ File: Power_Output.sch		
Title:		
Size: A	Date:	Rev:
KiCad E.D.A. kicad (5.0.1)-3		Id: 9/14

10. Mounting Holes and Mechanical Components



Sheet: /Mechanical/ File: Mechanical.sch		
Title:		
Size: A	Date: 2018-10-01	Rev: A
KiCad E.D.A. kicad (5.0.1)-3		Id: 10/14

## 11. Active Load Driver and Active Load Bank 1



Sheet: /Active Load 1/  
File: Active\_Load\_1.sch

**Title:**

Size: A

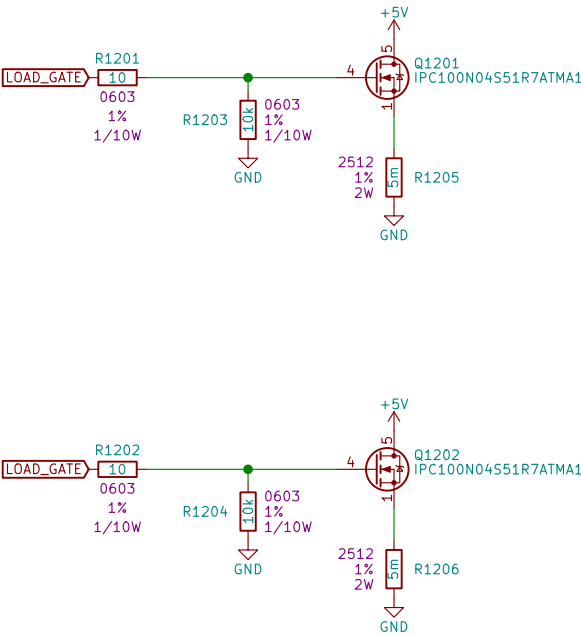
Date:

Size: A	Date:
KiCad E.D.A.	kiCad (5.0.1)–3

Rev:

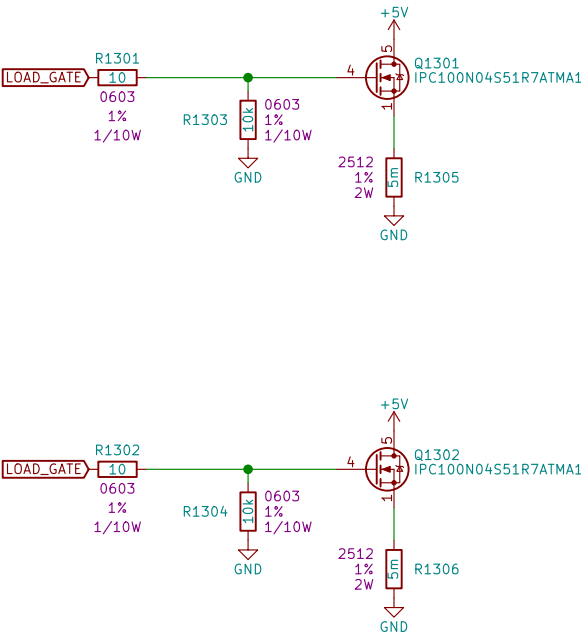
Id: 11/14

12. Active Load Bank 2



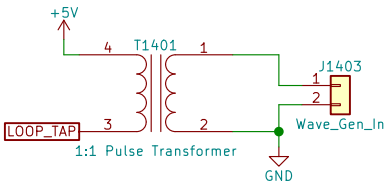
Sheet: /Active Load 2/ File: Active_Load_2.sch		
Title:		
Size: A	Date:	Rev:
KiCad E.D.A. kicad (5.0.1)-3		Id: 12/14

13. Active Load Bank 3



Sheet: /Active Load 3/ File: Active_Load_3.sch		
Title:		
Size: A	Date:	Rev:
KiCad E.D.A. kicad (5.0.1)-3		Id: 13/14

14. Open Loop Transfer Function Test Components



Sheet: /Loop Response/ File: Loop_Response.sch		
Title:		
Size: A	Date:	Rev:
KiCad E.D.A. kicad (5.0.1)-3		Id: 14/14