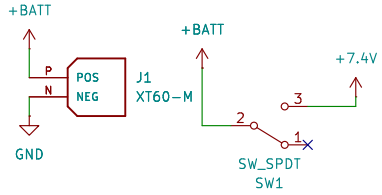
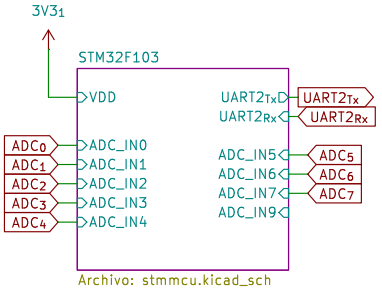
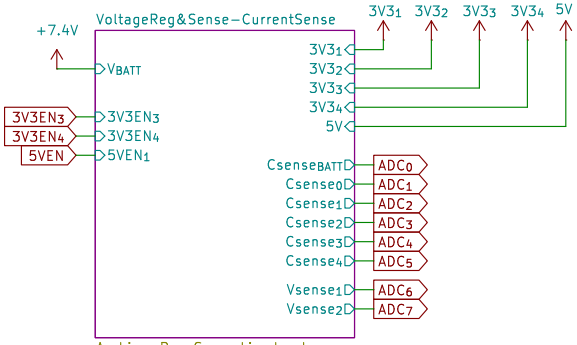
BATTERY & ON/OFF

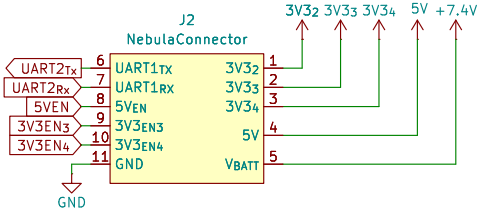


MCU



Regulation & CurrentSense





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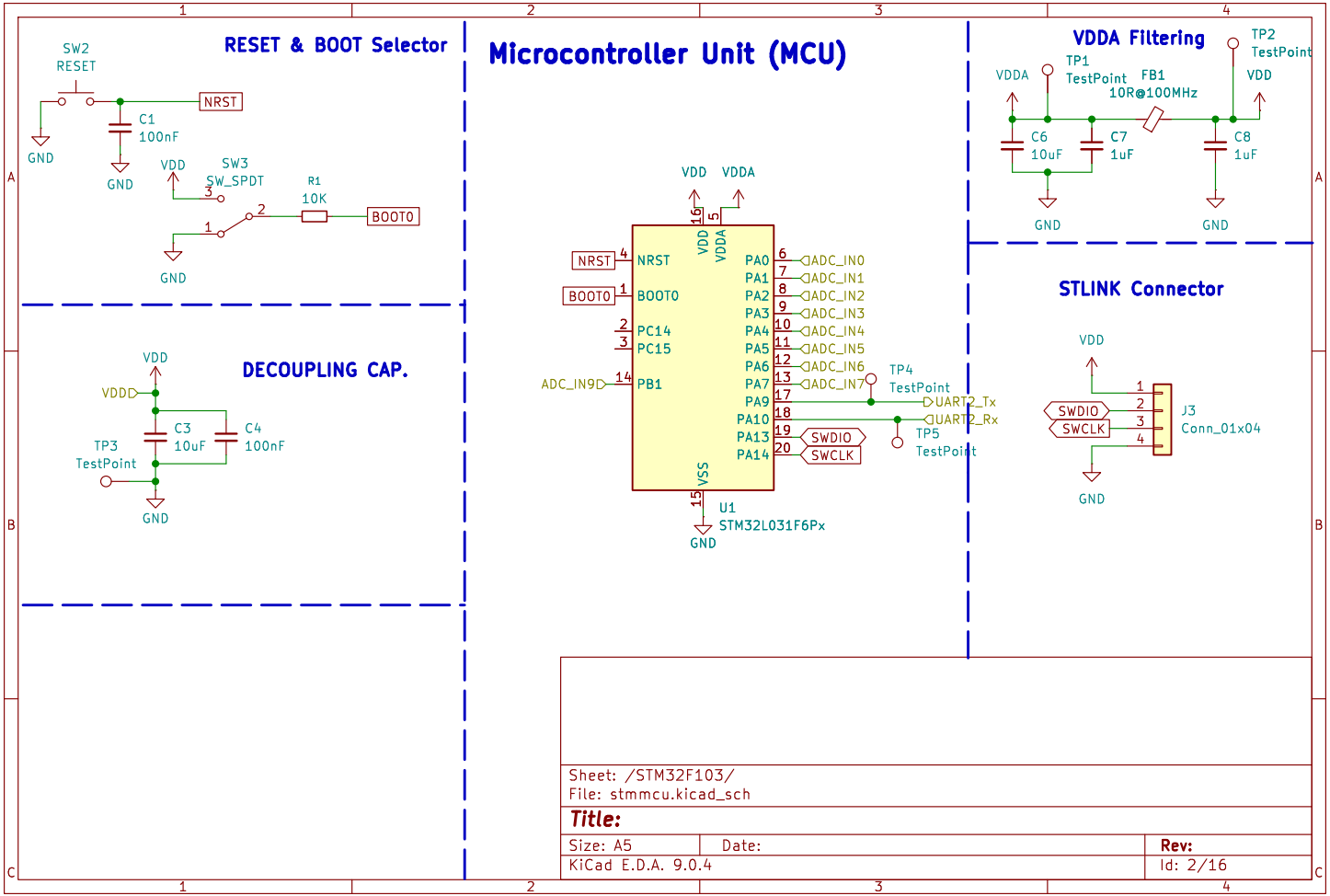
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 1/16


RESET & BOOT Selector
SW2
RESET
NRST
C1
100nF
GND
VDD
SW3
SW_SPDT
R1
10K
BOOT0
DECOUPLING CAP.
VDD
C3
10uF
C4
100nF
TP3
TestPoint
Microcontroller Unit (MCU)
NRST
BOOT0
PC14
PC15
PB1
ADC_IN9
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PA9
PA10
PA13
PA14
ADC_IN0
ADC_IN1
ADC_IN2
ADC_IN3
ADC_IN4
ADC_IN5
ADC_IN6
ADC_IN7
TP4
TestPoint
UART2_Tx
UART2_Rx
TP5
TestPoint
SWDIO
SWCLK
VSS
U1
STM32L031F6Px
VDDA Filtering
TP1
TestPoint
FB1
10R@100MHz
TP2
TestPoint
C6
10uF
C7
1uF
C8
1uF
STLINK Connector
J3
Conn_01x04
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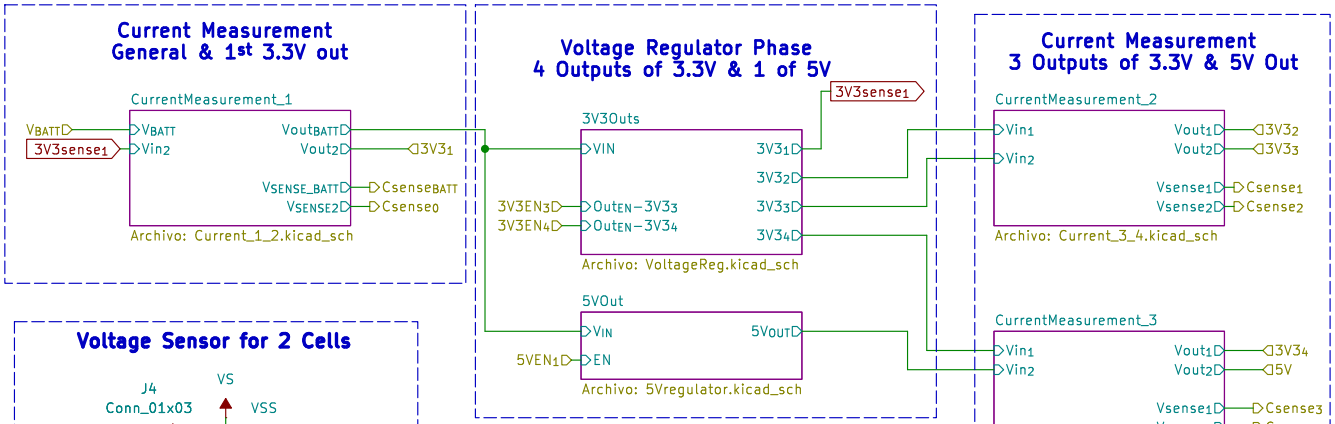
Size: A5
Date:
Rev:
KiCad E.D.A. 9.0.4
Id: 2/16



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File: Reg_Sense.kicad_sch

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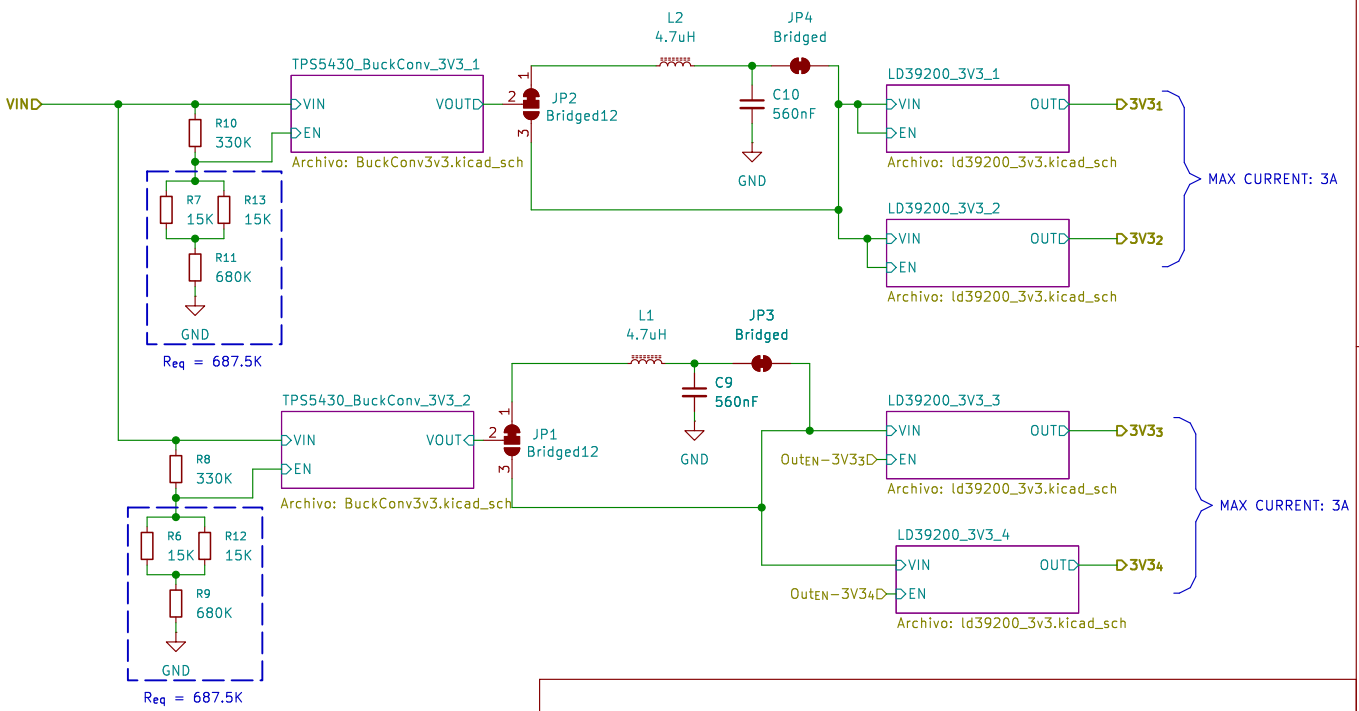
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 3/16



Sheet: /VoltageReg&Sense-CurrentSense/3V3Outs/
File: VoltageReg.kicad_sch

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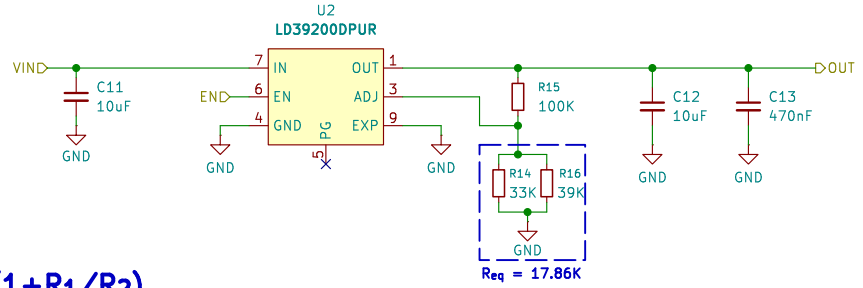
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 4/16



$$V_{out} = V_{adj}(1+R_1/R_2)$$

$$(V_{out}/V_{adj} - 1)R_2 = R_1$$

$$R_2 = R_1/(V_{out}/V_{adj} - 1)$$

Sustituyendo..

$$R_2 = 100K/(3.3/0.5 - 1)$$

$$R_2 = 17.86K$$

Sheet: /VoltageReg&Sense-CurrentSense/3V3Outs/LD39200_3V3_1/
File: ld39200_3v3.kicad_sch

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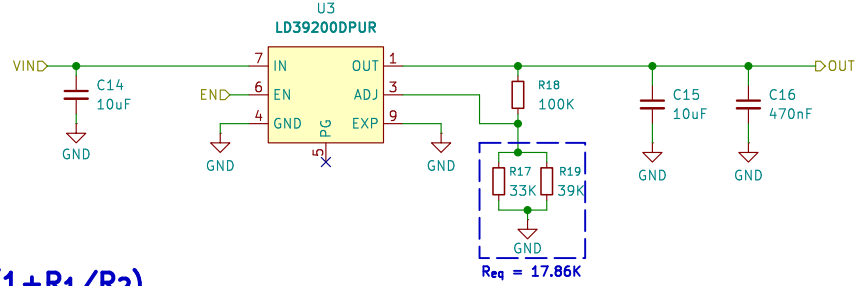
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 5/16



$$V_{out} = V_{adj}(1+R_1/R_2)$$

$$(V_{out}/V_{adj} - 1)R_2 = R_1$$

$$R_2 = R_1/(V_{out}/V_{adj} - 1)$$

Sustituyendo..

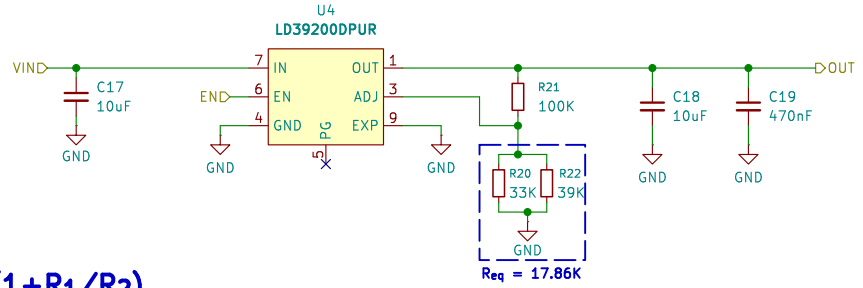
$$R_2 = 100K/(3.3/0.5 - 1)$$

$$R_2 = 17.86K$$

Sheet: /VoltageReg&Sense-CurrentSense/3V3Outs/LD39200_3V3_2/
File: ld39200_3v3.kicad_sch

Title:

Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 6/16



$$V_{out} = V_{adj}(1+R_1/R_2)$$

$$(V_{out}/V_{adj} - 1)R_2 = R_1$$

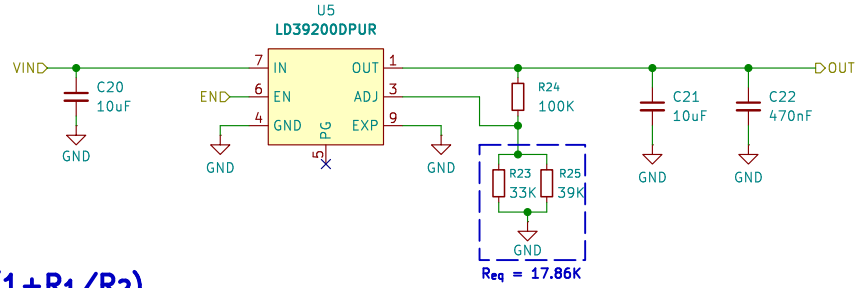
$$R_2 = R_1/(V_{out}/V_{adj} - 1)$$

Sustituyendo..

$$R_2 = 100K/(3.3/0.5 - 1)$$

$$R_2 = 17.86K$$

Sheet: /VoltageReg&Sense-CurrentSense/3V3Outs/LD39200_3V3_3/		
File: ld39200_3v3.kicad_sch		
Title:		
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 7/16



$$V_{out} = V_{adj}(1+R_1/R_2)$$

$$(V_{out}/V_{adj} - 1)R_2 = R_1$$

$$R_2 = R_1/(V_{out}/V_{adj} - 1)$$

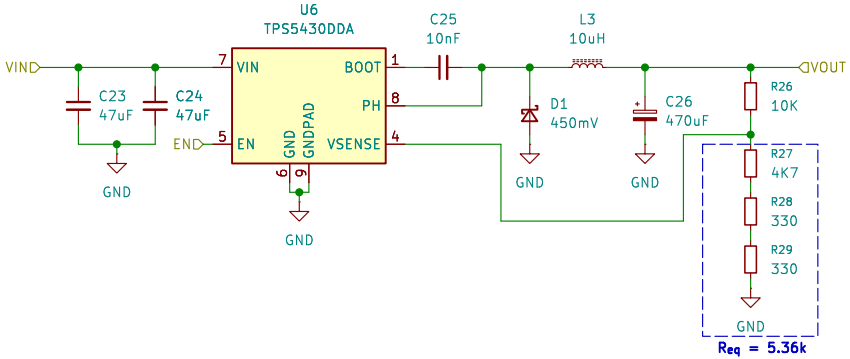
Sustituyendo..

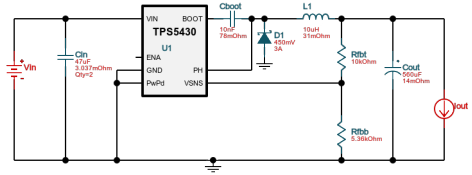
$$R_2 = 100K/(3.3/0.5 - 1)$$

$$R_2 = 17.86K$$

Sheet: /VoltageReg&Sense-CurrentSense/3V3Outs/LD39200_3V3_4/		
File: ld39200_3v3.kicad_sch		
Title:		
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 8/16

VIN: 6.5V – 9V
VOUT: 3.5V
IMAX: 3A





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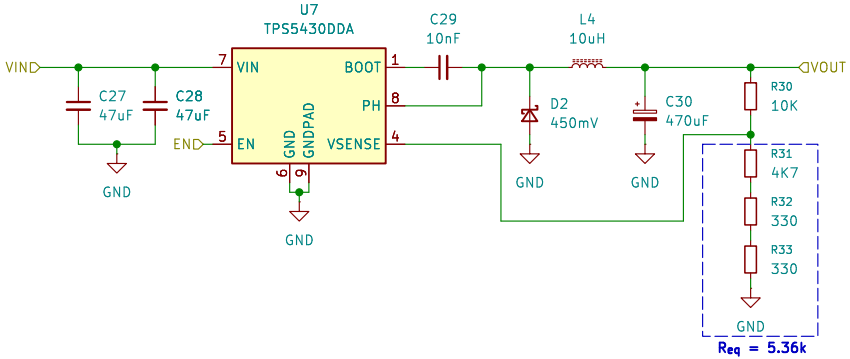
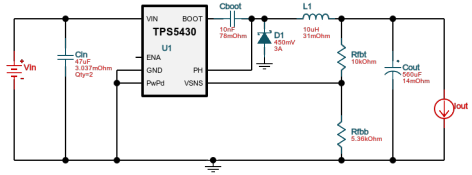
Sheet: /VoltageReg&Sense-CurrentSense/3V3Outs/TPS5430_BuckConv_3V3_1/
File: BuckConv3v3.kicad_sch

Title:

Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 9/16

VIN: 6.5V – 9V
VOUT: 3.5V
IMAX: 3A





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Sheet: /VoltageReg&Sense-CurrentSense/3V3Outs/TPS5430_BuckConv_3V3_2/
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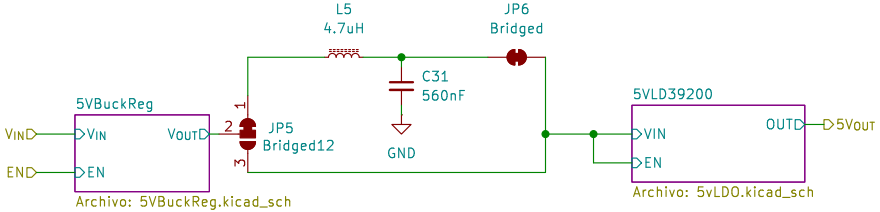
Title:

Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 10/16



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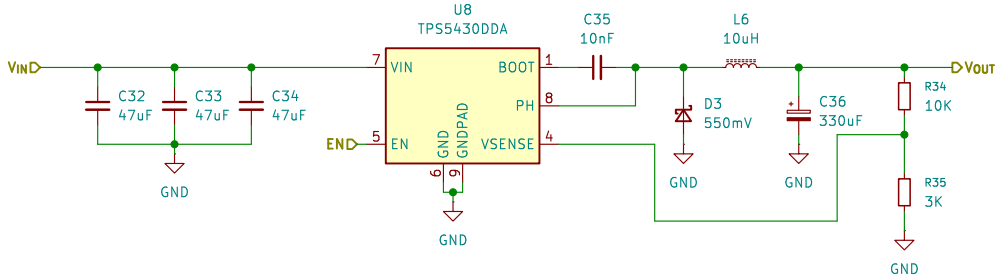
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 13/16



Sheet: /VoltageReg&Sense-CurrentSense/5VOut/5VBuckReg/		
File: 5VBuckReg.kicad_sch		
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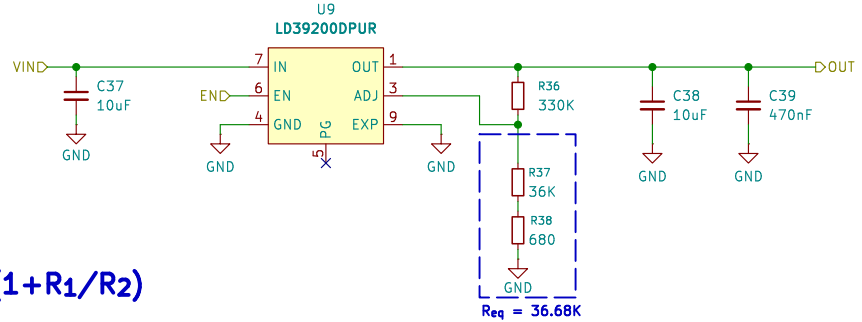
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 14/16



$$V_{out} = V_{adj}(1+R_1/R_2)$$

$$(V_{out}/V_{adj} - 1)R_2 = R_1$$

$$R_2 = R_1/(V_{out}/V_{adj} - 1)$$

Sustituyendo..

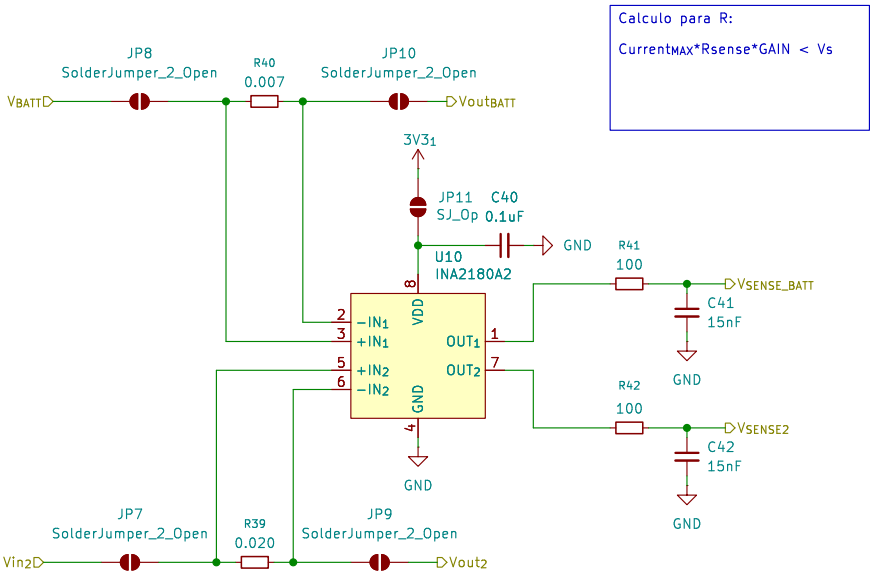
$$R_2 = 330K/(5/0.5 - 1)$$

$$R_2 = 36.66K$$

Sheet: /VoltageReg&Sense-CurrentSense/5VOut/5VLD39200/
File: 5vLDO.kicad_sch

Title:

Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 15/16



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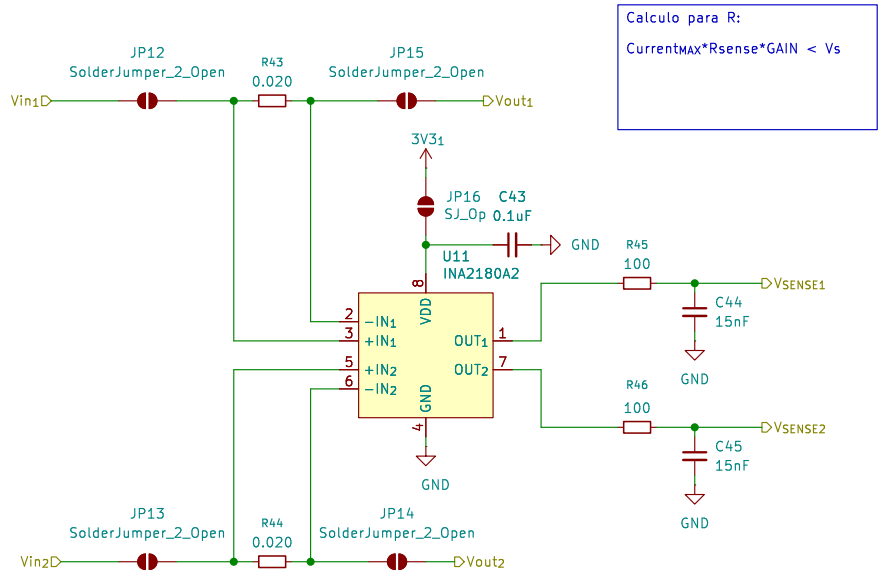
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 17/16



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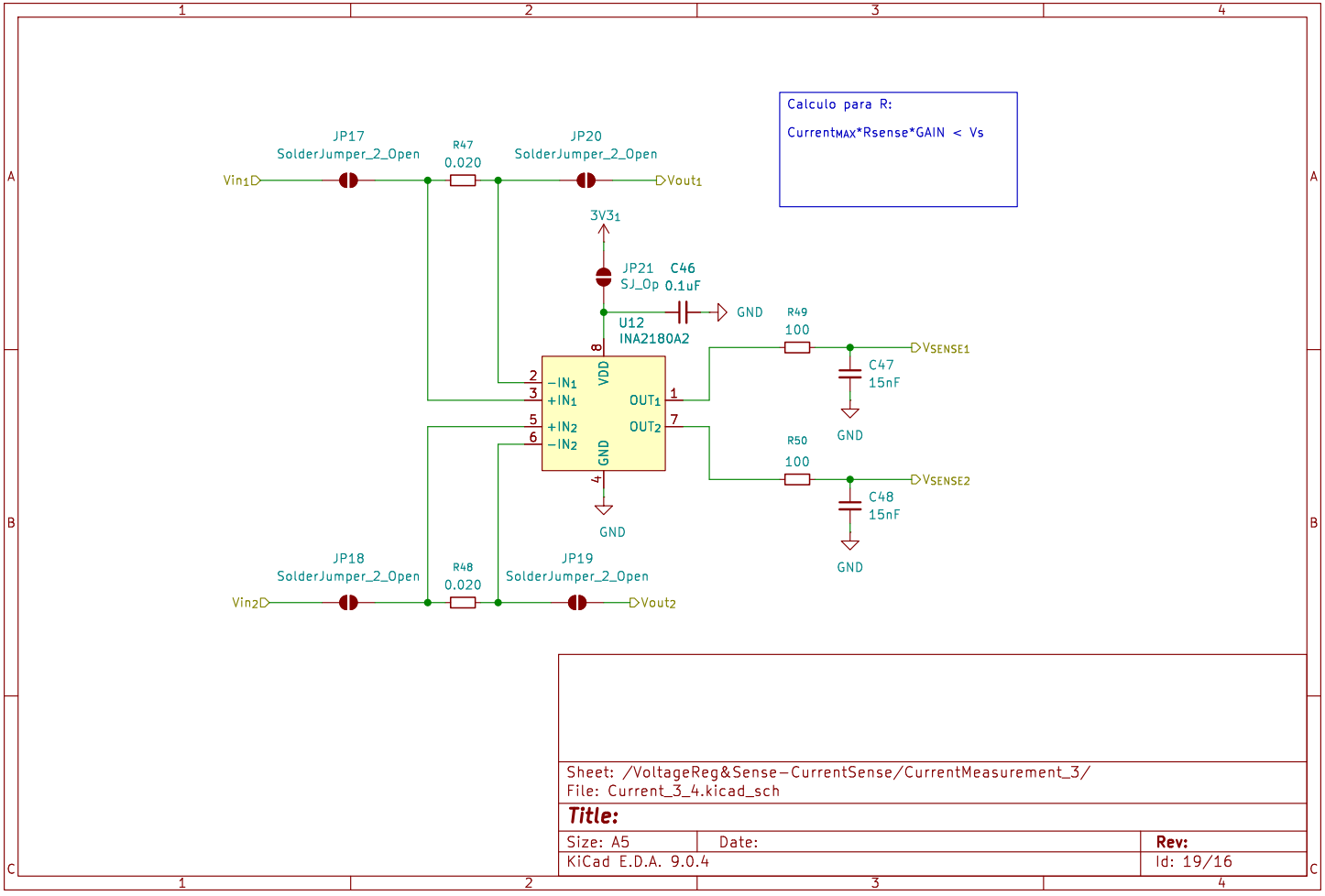
Size: A5	Date:	**Rev:**
KiCad E.D.A. 9.0.4		Id: 18/16


Calculo para R:
CurrentMAX*Rsense*GAIN < Vs
JP17
SolderJumper_2_Open
R47
0.020
JP20
SolderJumper_2_Open
Vin1
Vout1
3V31
JP21
SJ_Op
C46
0.1uF
GND
U12
INA2180A2
R49
100
VSENSE1
C47
15nF
GND
R50
100
VSENSE2
C48
15nF
GND
VDD
GND
−IN1
+IN1
+IN2
−IN2
OUT1
OUT2
JP18
SolderJumper_2_Open
R48
0.020
JP19
SolderJumper_2_Open
Vin2
Vout2
Sheet: /VoltageReg&Sense−CurrentSense/CurrentMeasurement_3/
File: Current_3_4.kicad_sch
Title:
Size: A5
Date:
Rev:
KiCad E.D.A. 9.0.4
Id: 19/16