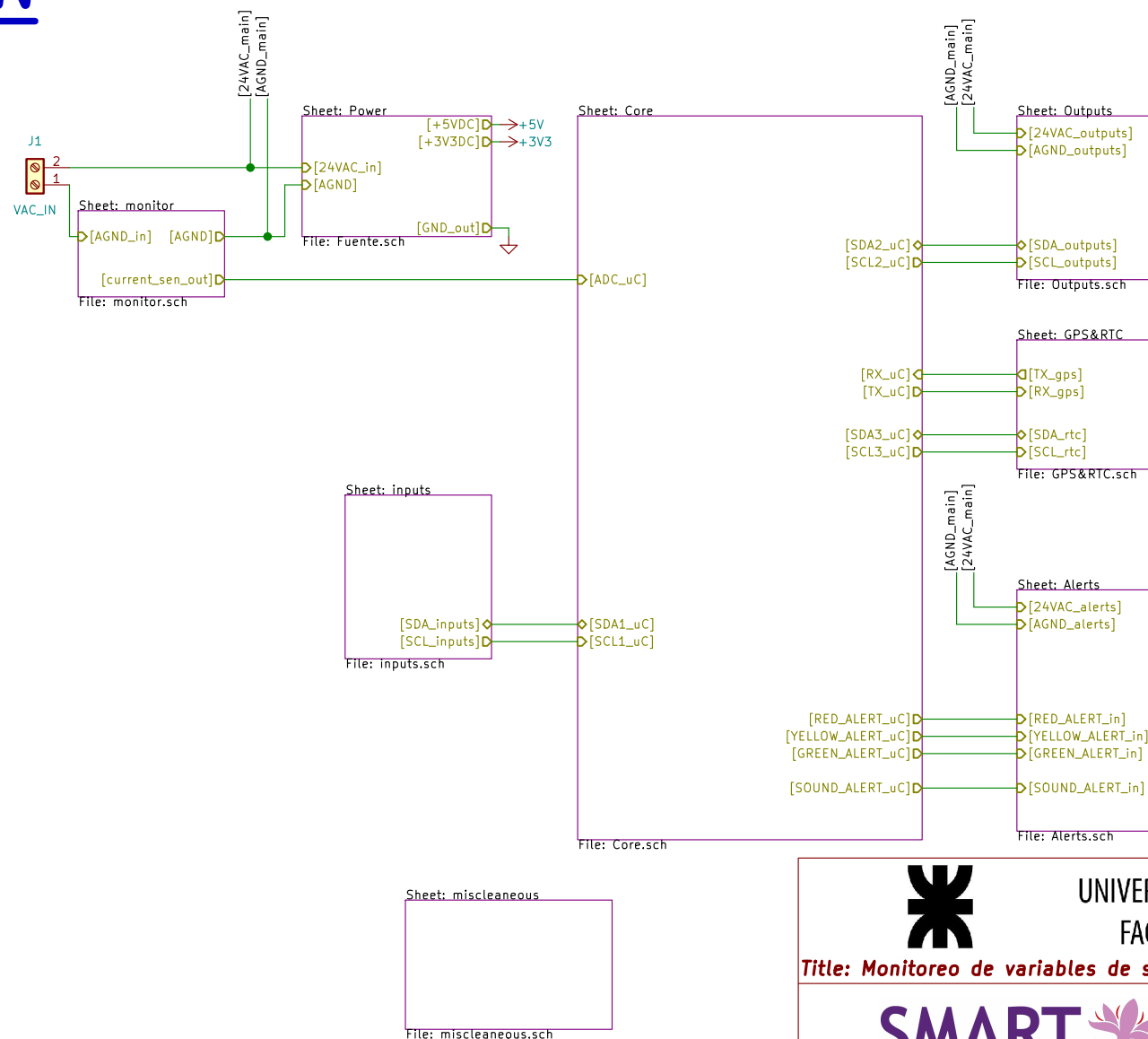


MAIN



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Title: Monitoreo de variables de suelo para control fungico en campos de azafraan



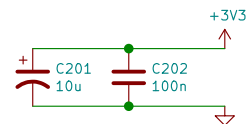
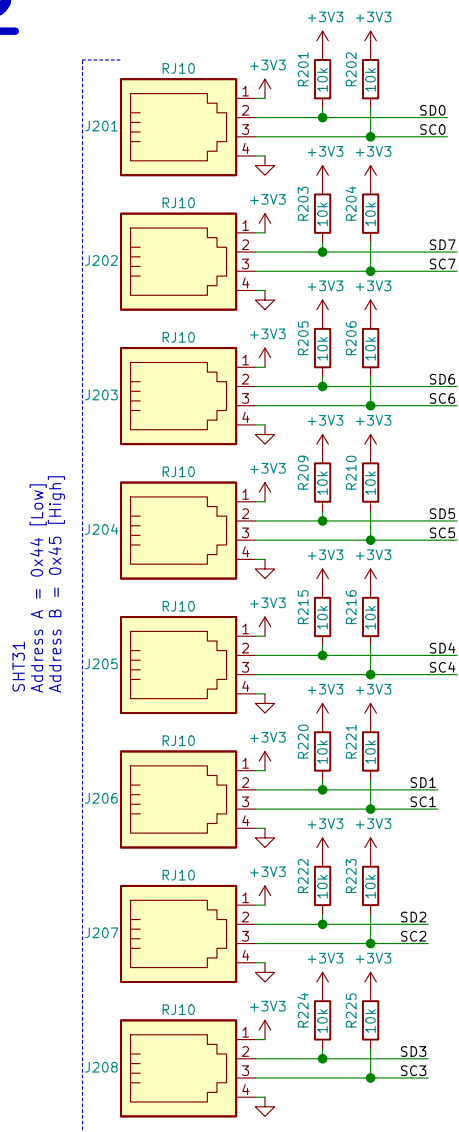
Autor: Castro, Franco
Cussa, Mayco
Navarro, Facundo
Nobile, Jonathan

Responsable: Grupo6/21 Sheet: /
File: tesis.sch

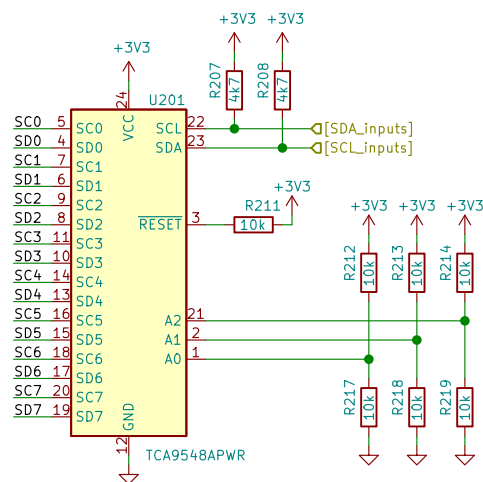
Size: A4 Date: 2021-10-03
KiCad E.D.A. kicad 5.1.10

Rev: v1.0
Id: 1/9

INPUTS



Capacitores de desacople.
Colocar lo mas cercano posible
a los pines del IC en cuestion.



A2	A1	A0	Address
L	L	L	0x70
L	L	H	0x71
L	H	L	0x72
L	H	H	0x73
H	L	L	0x74
H	L	H	0x75
H	H	L	0x76
H	H	H	0x77



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SMART
SAFFRON

Autor: Castro, Franco
Cussa, Mayco
Navarro, Facundo
Nobile, Jonathan

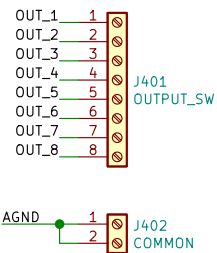
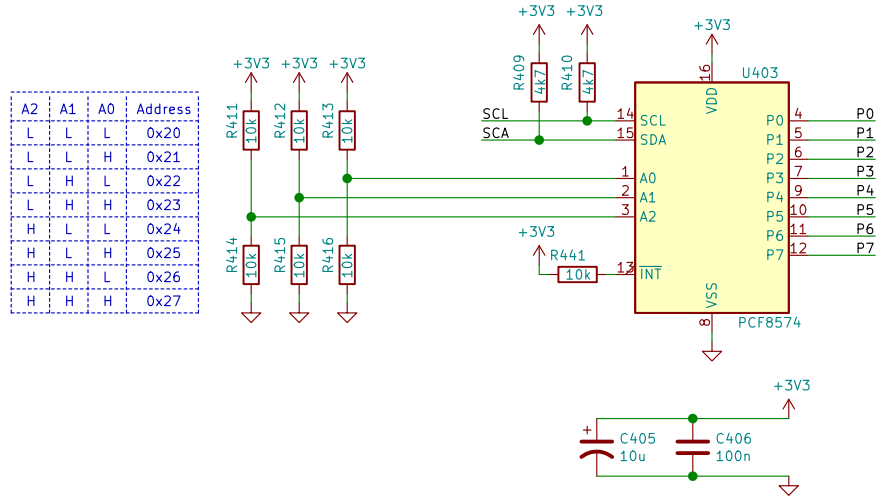
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File: inputs.sch

Size: A4
KiCad E.D.A. kicad 5.1.10

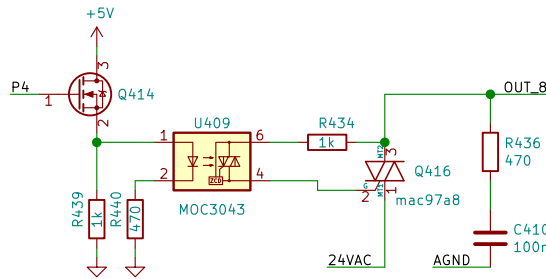
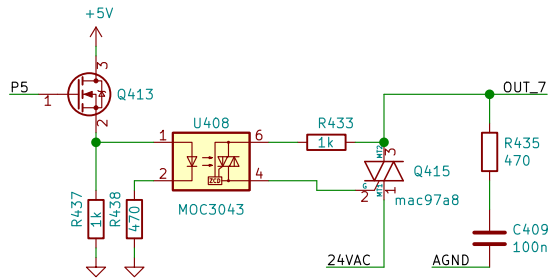
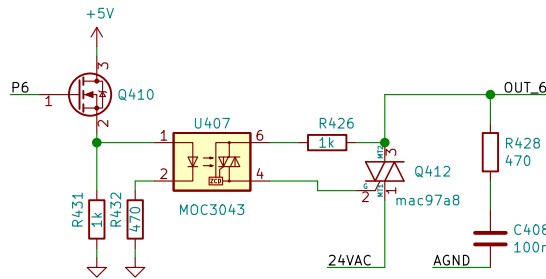
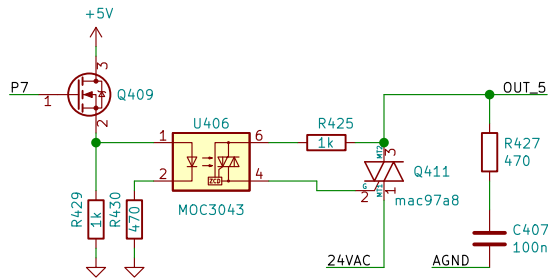
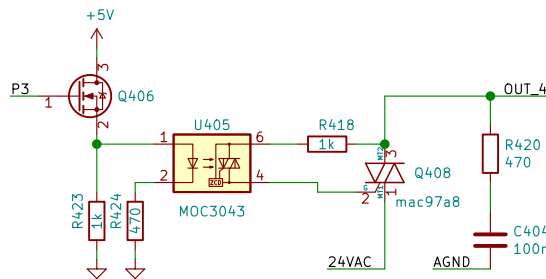
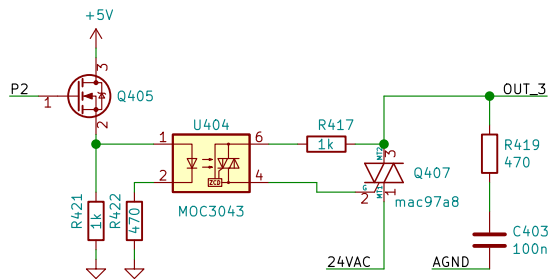
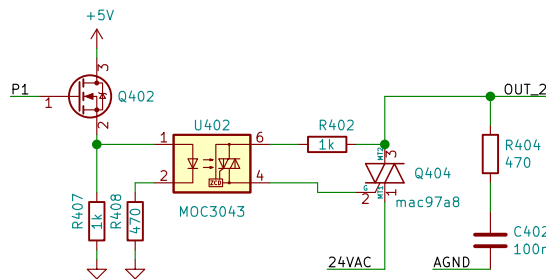
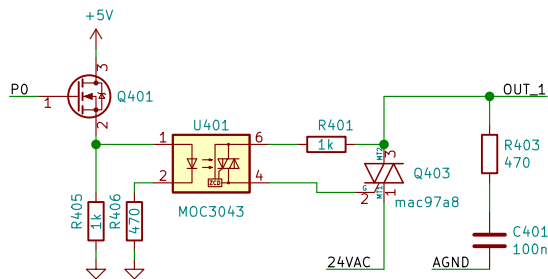
Date:

Rev:
Id: 2/9

OUTPUTS



[SCL_outputs] SCL
[SDA_outputs] SDA
[24VAC_outputs] 24VAC
[AGND_outputs] AGND





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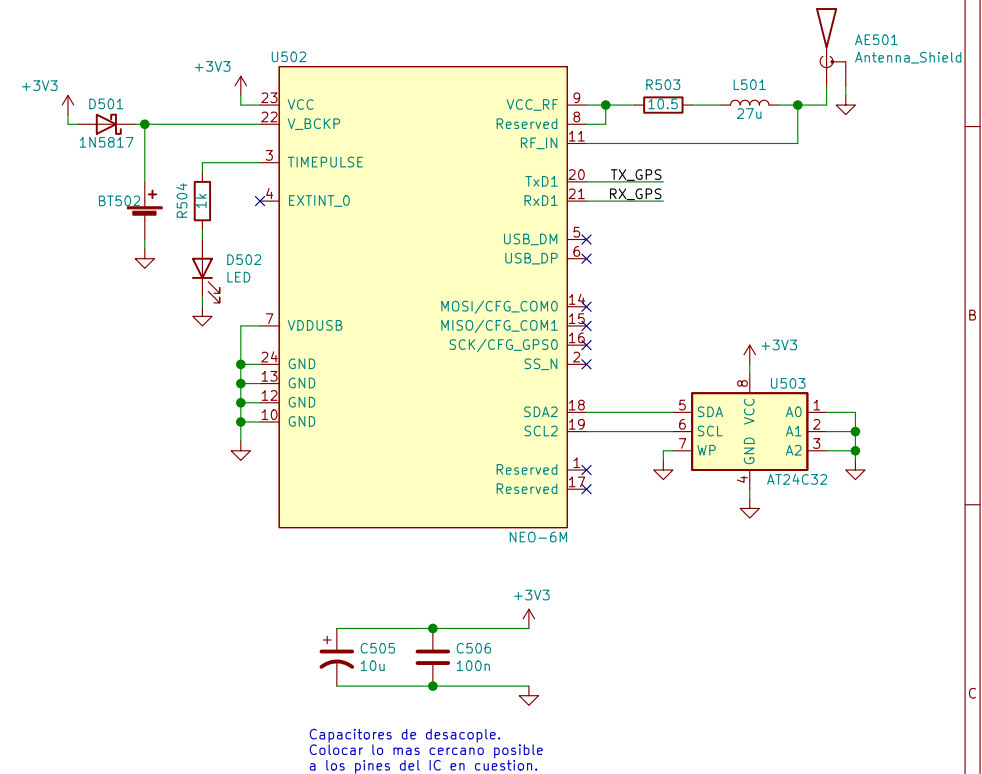
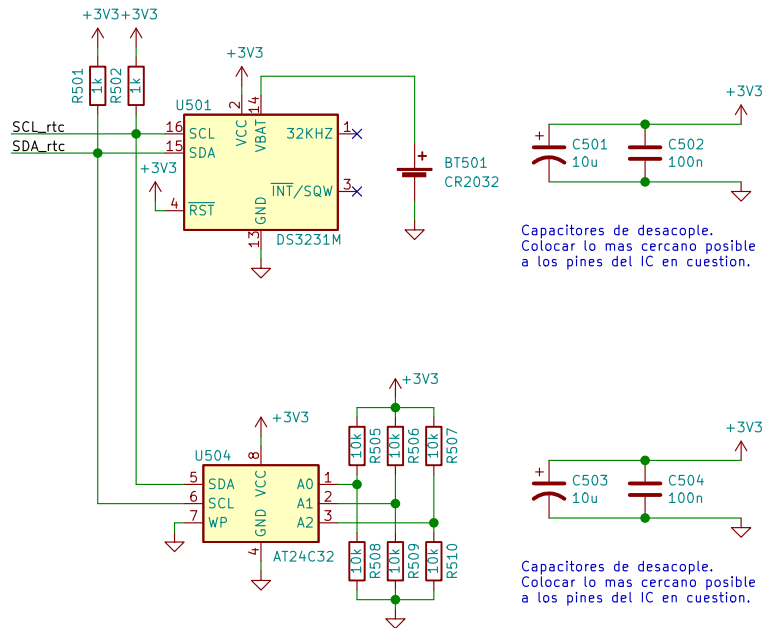
Autor: Castro, Franco
Cussa, Mayco
Navarro, Facundo
Nobile, Jonathan

Responsable: Grupo6/21 Sheet: /Outputs/
File: Outputs.sch

Size: A3 Date:
KiCad E.D.A. kicad 5.1.10

Rev:
Id: 3/9

GPS&RTC



[SDA_rtc] SDA_rtc
[SCL_rtc] SCL_rtc
[TX_gps] TX_GPS
[RX_gps] RX_GPS



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Title: **Monitoreo de variables de suelo para control fungico en campos de azafrañ**

**SMART
SAFFRON**

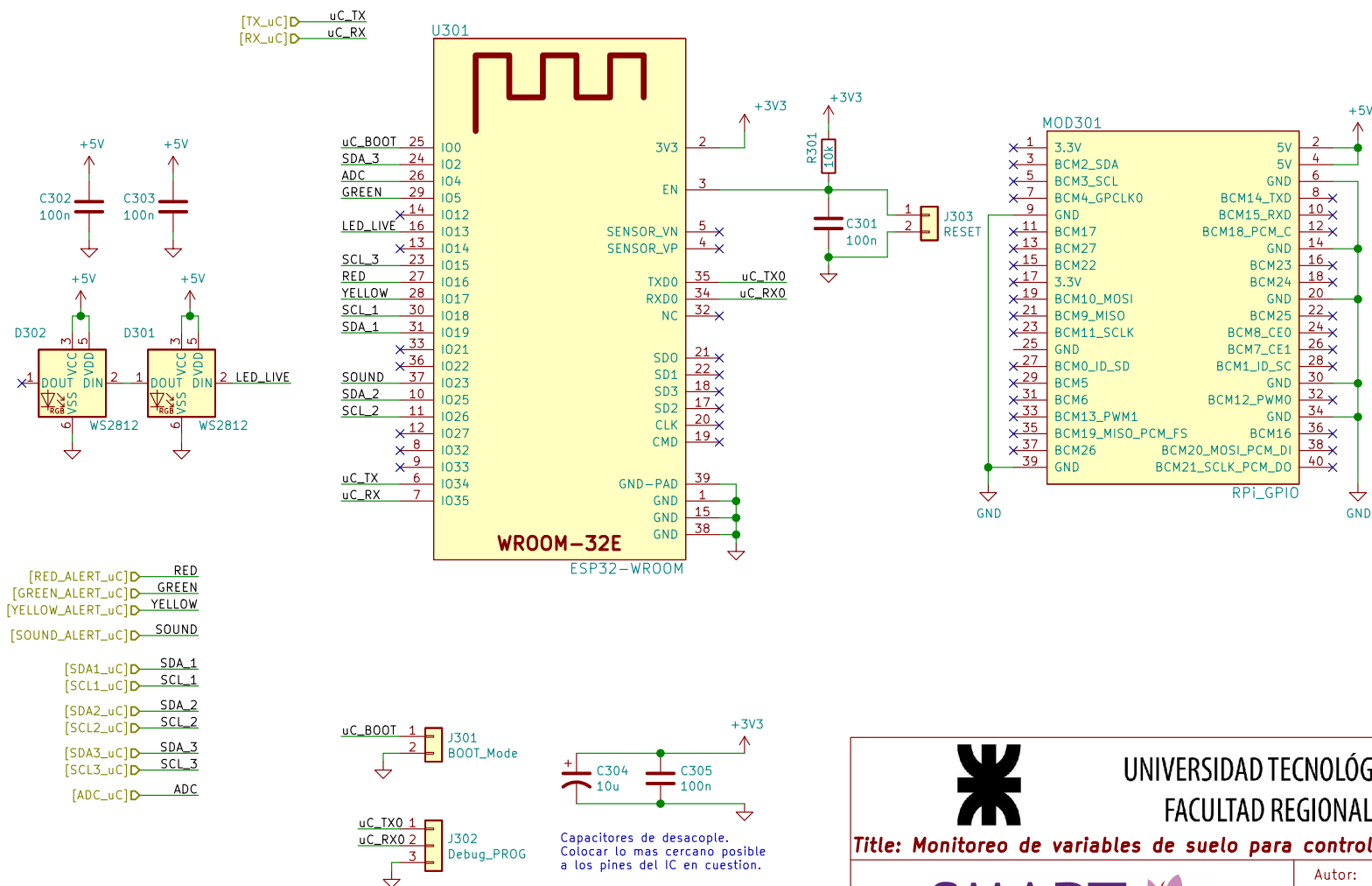
Autor: Castro, Franco
Cussa, Mayco
Navarro, Facundo
Nobile, Jonathan

Responsable: Grupo6/21 Sheet: /GPS&RTC/
File: GPS&RTC.sch

Size: A4 Date:
KiCad E.D.A. kicad 5.1.10

Rev:
Id: 4/9

CORE



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FACULTAD REGIONAL CÓRDOBA

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**SMART
SAFFRON**

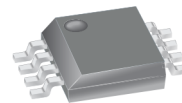
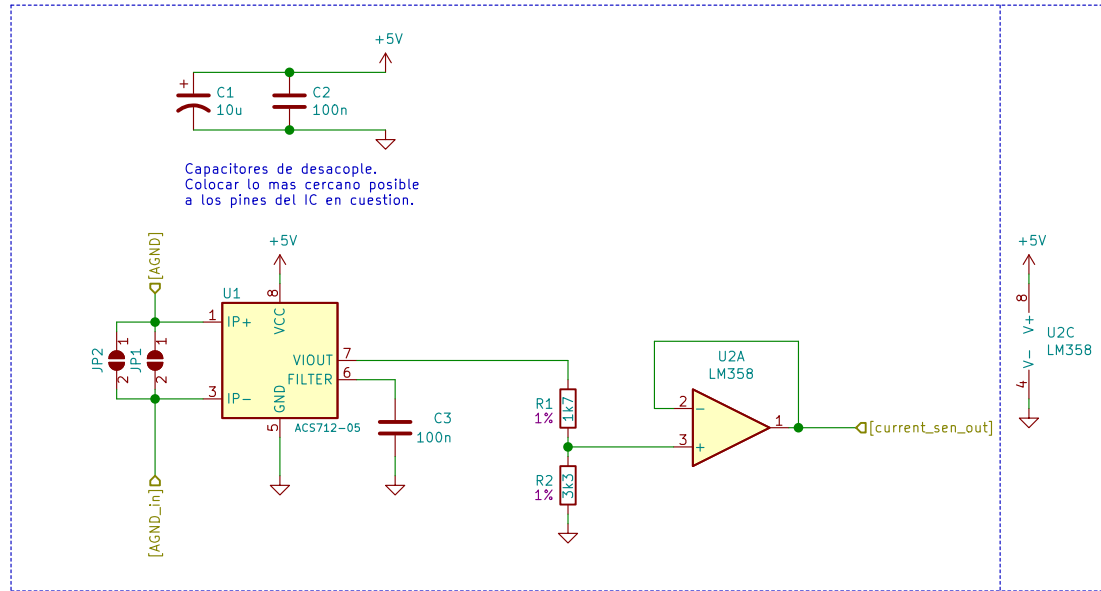
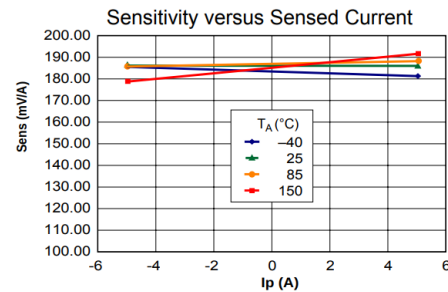
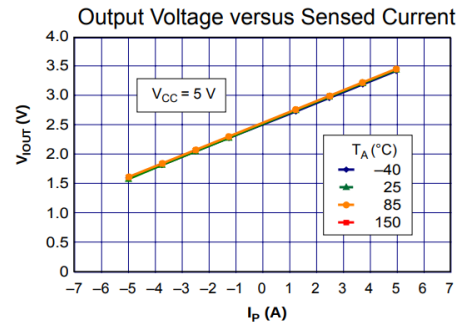
Autor: Castro, Franco
Cussa, Mayco
Navarro, Facundo
Nobile, Jonathan

Responsable: Grupo6/21 Sheet: /Core/
File: Core.sch

Size: A4
KiCad E.D.A. kicad 5.1.10

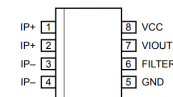
Rev:
Id: 5/9

MONITOR



Package: 8 Lead SOIC

Pin-out Diagram



Terminal List Table

Number	Name	Description
1 and 2	IP+	Terminals for current being sensed; fused internally
3 and 4	IP-	Terminals for current being sensed; fused internally
5	GND	Signal ground terminal
6	FILTER	Terminal for external capacitor that sets bandwidth
7	VIOU	Analog output signal
8	VCC	Device power supply terminal

COMMON OPERATING CHARACTERISTICS¹ over full range of T_A , $C_F = 1\text{ nF}$, and $V_{CC} = 5\text{ V}$, unless otherwise specified

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
ELECTRICAL CHARACTERISTICS						
Supply Voltage	V_{CC}		4.5	5.0	5.5	V
Supply Current	I_{CC}	$V_{CC} = 5.0\text{ V}$, output open	—	10	13	mA
Output Capacitance Load	C_{LOAD}	VIOU to GND	—	—	10	nF
Output Resistive Load	R_{LOAD}	VIOU to GND	4.7	—	—	k Ω
Primary Conductor Resistance	$R_{PRIMARY}$	$T_A = 25^{\circ}\text{C}$	—	1.2	—	m Ω
Rise Time	t_r	$I_P = I_P(\text{max})$, $T_A = 25^{\circ}\text{C}$, $C_{OUT} = \text{open}$	—	5	—	μs
Frequency Bandwidth	f	-3 dB, $T_A = 25^{\circ}\text{C}$; I_P is 10 A peak-to-peak	—	80	—	kHz
Nonlinearity	E_{LIN}	Over full range of I_P	—	1.5	—	%
Symmetry	E_{SYM}	Over full range of I_P	98	100	102	%
Zero Current Output Voltage	$V_{IOUT(Q)}$	Bidirectional; $I_P = 0\text{ A}$, $T_A = 25^{\circ}\text{C}$	—	$V_{CC} \times 0.5$	—	V
Power-On Time	t_{PO}	Output reaches 90% of steady-state level, $T_J = 25^{\circ}\text{C}$, 20 A present on leadframe	—	35	—	μs
Magnetic Coupling ²			—	12	—	G/A
Internal Filter Resistance ³	$R_{F(INT)}$		—	1.7	—	k Ω

¹Device may be operated at higher primary current levels, I_P , and ambient, T_A , and internal leadframe temperatures, T_J , provided that the Maximum Junction Temperature, $T_J(\text{max})$, is not exceeded.

²1G = 0.1 mT.

³ $R_{F(INT)}$ forms an RC circuit via the FILTER pin.



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SAFFRON**

Autor: Castro, Franco
Cussa, Mayco
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Nobile, Jonathan

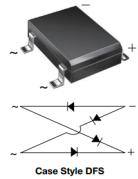
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Size: A4
KiCad E.D.A. kicad 5.1.10

Date:

Rev:
Id: 6/9

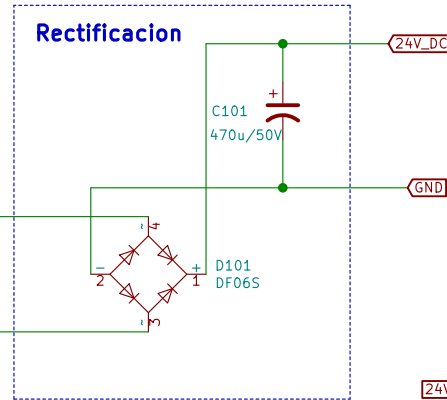
POWER



[24VAC_in]

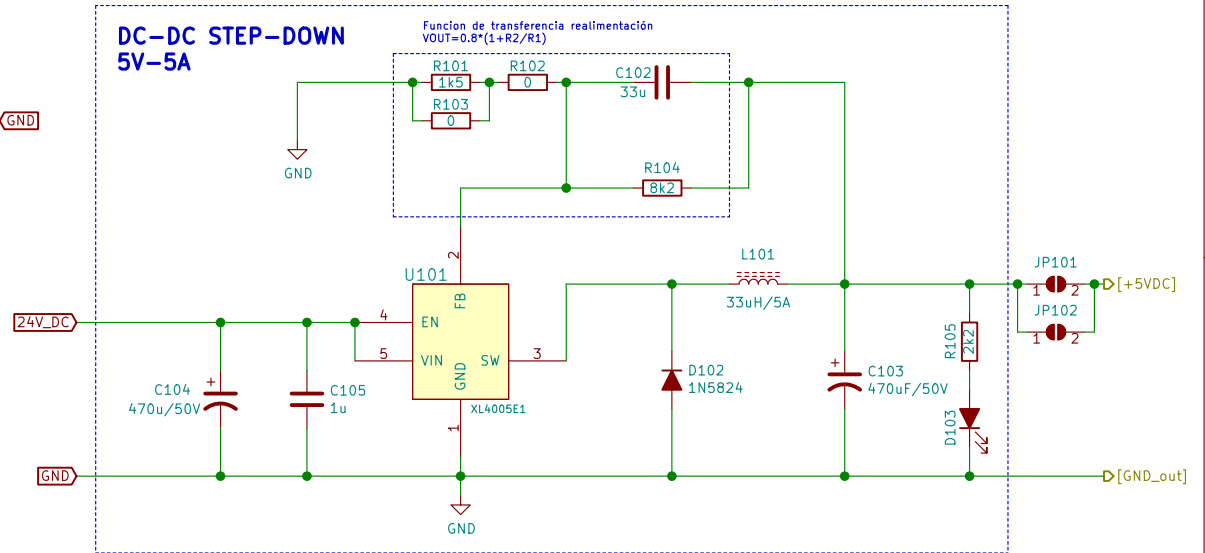
[AGND]

Rectification

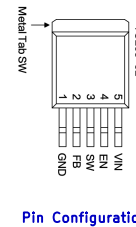
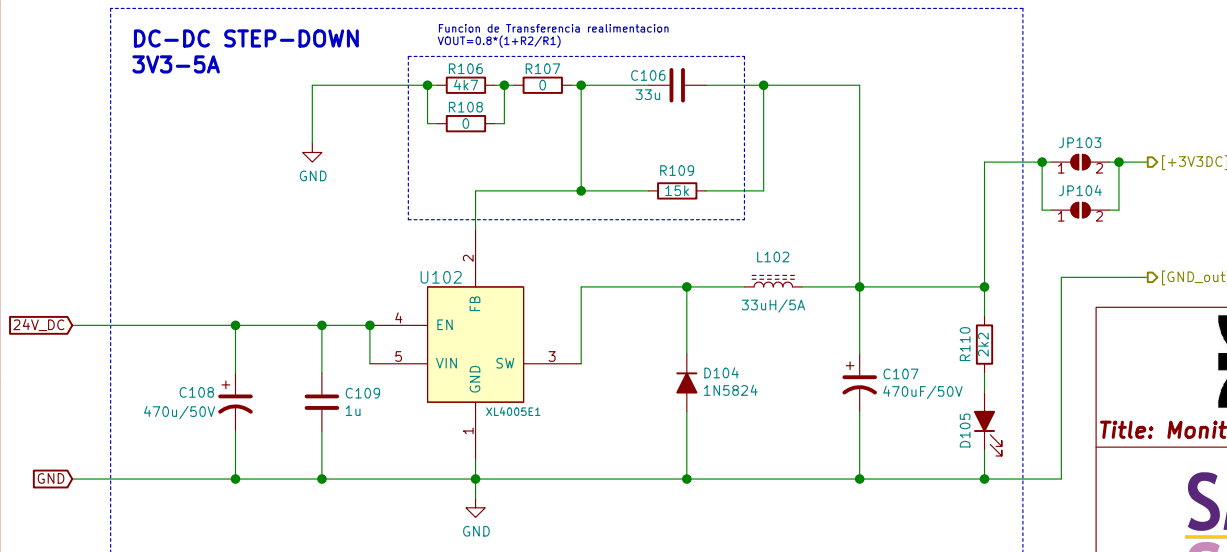


MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	DF005S	DF01S	DF02S	DF04S	DF06S	DF08S	DF10S
Device marking code		DF005S	DF01S	DF02S	DF04S	DF06S	DF08S	DF10S
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	200	400	600	800	1000
Maximum RMS voltage	V _{RMS}	35	70	140	280	420	560	700
Maximum DC blocking voltage	V _{DC}	50	100	200	400	600	800	1000
Maximum average forward output rectified current at T _A = 40 °C (1)	I _{F(AV)}	1.0						A
Peak forward surge current single half sine-wave superimposed on rated load	I _{FSM}	50						A
Rating for fusing (t < 8.3 ms)	I _{ft}	10						A ² s
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150						°C

DC-DC STEP-DOWN 5V-5A



DC-DC STEP-DOWN 3V3-5A



Absolute Maximum Ratings (Note1)

Parameter	Symbol	Value	Unit
Input Voltage	V _{in}	-0.3 to 35	V
Feedback Pin Voltage	V _{FB}	-0.3 to V _{in}	V
EN Pin Voltage	V _{EN}	-0.3 to V _{in}	V
Output Switch Pin Voltage	V _{Output}	-0.3 to V _{in}	V
Power Dissipation	P _D	Internally limited	mW
Thermal Resistance (TO263) (Junction to Ambient, No Heatsink, Free Air)	R _{JA}	30	°C/W
Operating Junction Temperature	T _J	-40 to 125	°C
Storage Temperature	T _{STG}	-65 to 150	°C
Lead Temperature (Soldering, 10 sec)	T _{LEAD}	260	°C
ESD (HBM)		2000	V



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SMART
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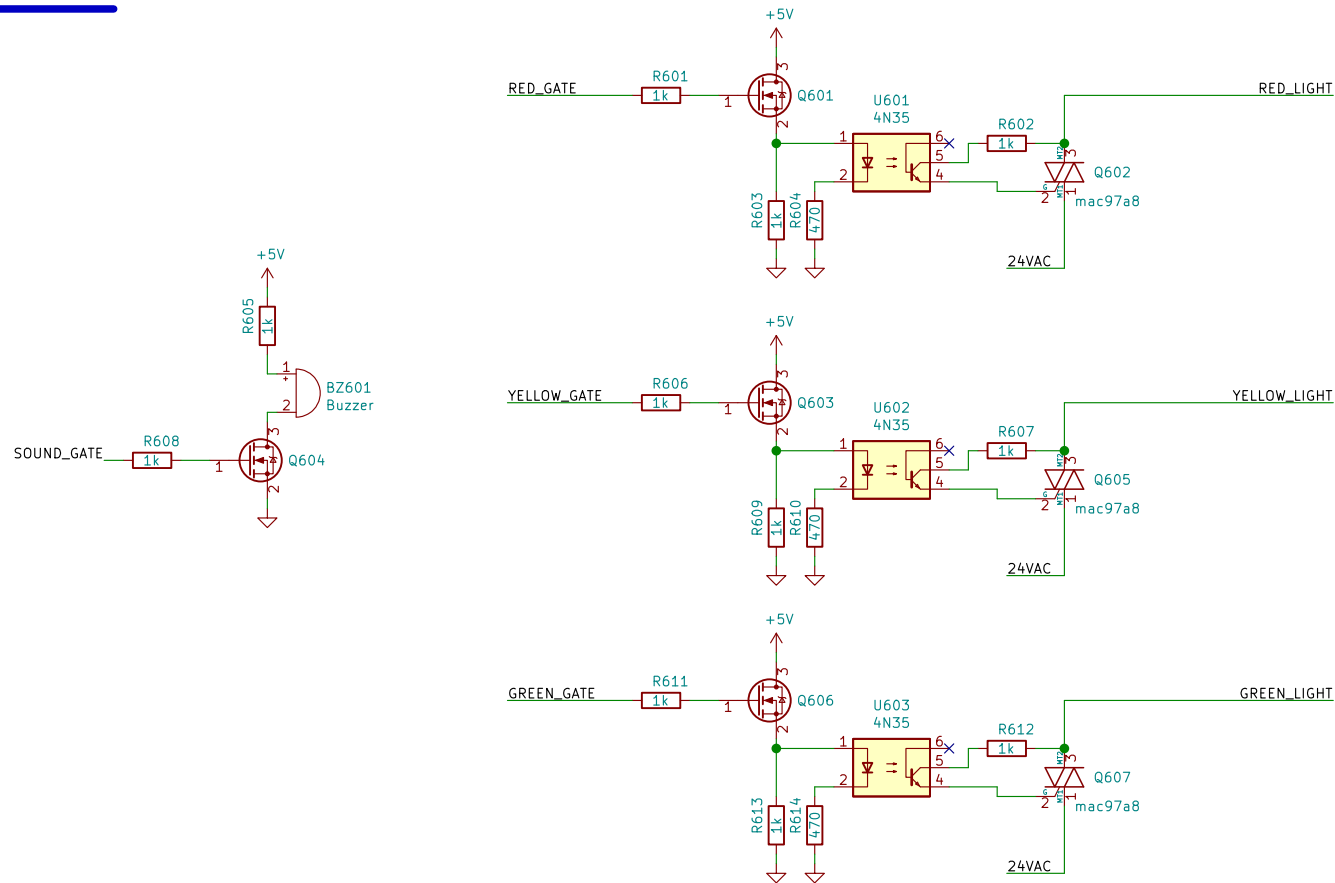
Autor: Castro, Franco
Cussa, Mayo
Navarro, Facundo
Nobile, Jonathan

Responsable: Grupo6/21 Sheet: /Power/
File: Fuente.sch

Size: A4 Date:
KiCad E.D.A. kicad 5.1.10

Rev:
Id: 7/9

ALERTS



[RED_ALERT_in] → RED_GATE
 [YELLOW_ALERT_in] → YELLOW_GATE
 [GREEN_ALERT_in] → GREEN_GATE
 [SOUND_ALERT_in] → SOUND_GATE

[24VAC_alerts] → 24VAC
 [AGND_alerts] → AGND



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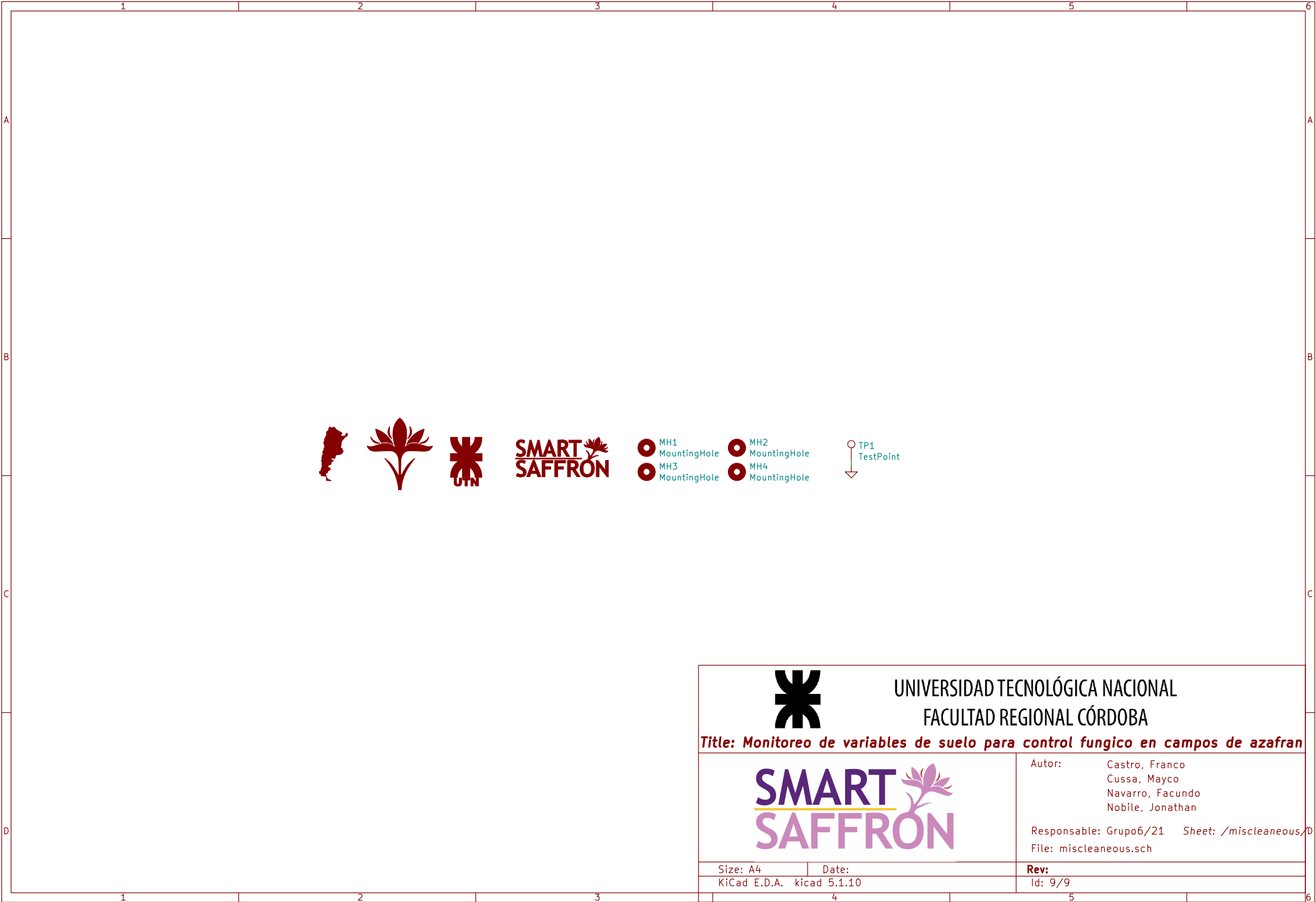
**SMART
 SAFFRON**

Autor: Castro, Franco
 Cussa, Mayco
 Navarro, Facundo
 Nobile, Jonathan

Responsable: Grupo6/21 Sheet: /Alerts/
 File: Alerts.sch

Size: A4 Date:
 KiCad E.D.A. kicad 5.1.10

Rev:
 Id: 8/9





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Autor: Castro, Franco
Cussa, Mayco
Navarro, Facundo
Nobile, Jonathan

Responsable: Grupo6/21 Sheet: /miscellaneous/D

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KiCad E.D.A. kicad 5.1.10	Id: 9/9	