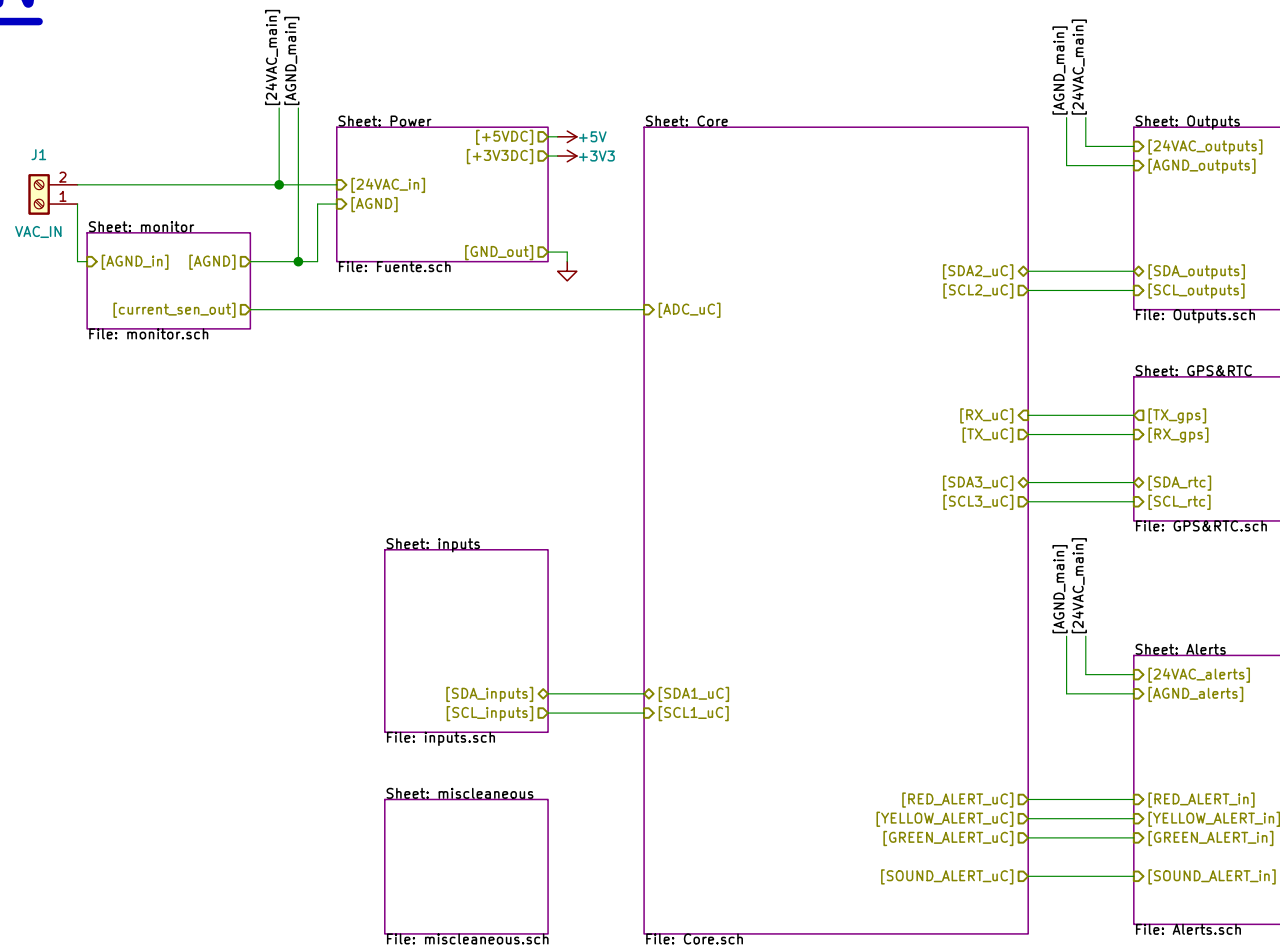


# MAIN



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FACULTAD REGIONAL CÓRDOBA

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

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SAFFRON**

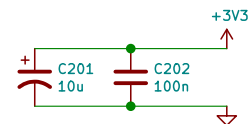
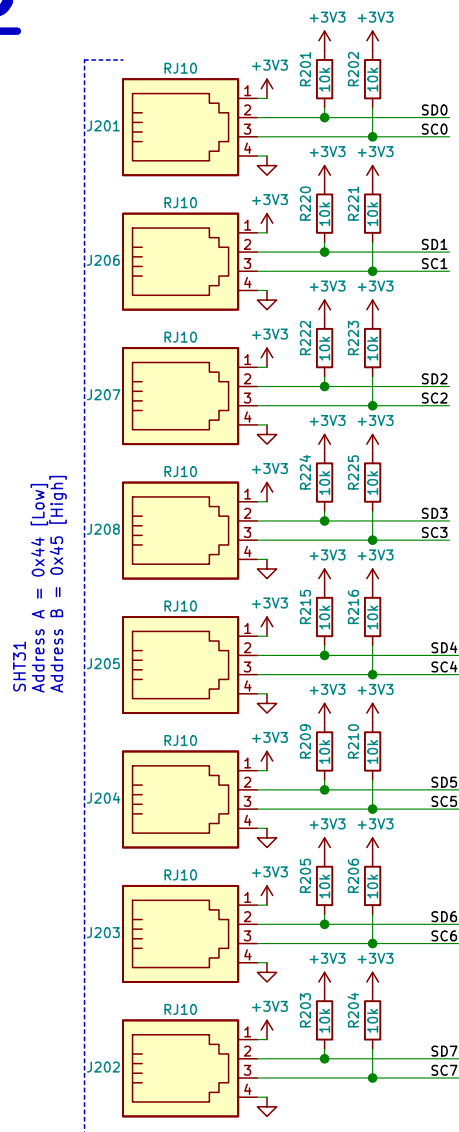
Autor: Castro, Franco  
Cussa, Mayco  
Navarro, Facundo  
Nobile, Jonathan

Responsable: Grupo6/21 Sheet: /  
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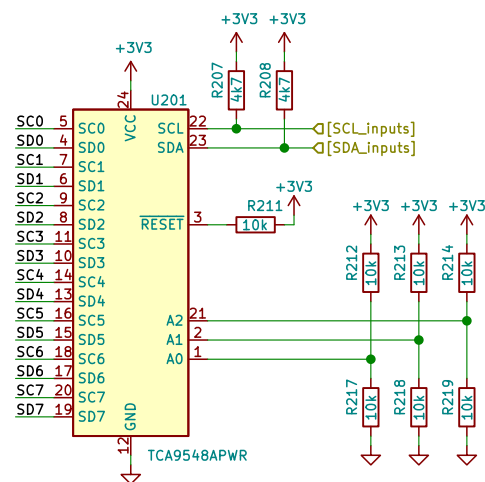
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KiCad E.D.A. kicad 5.1.10

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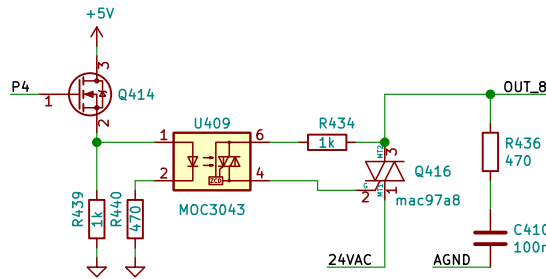
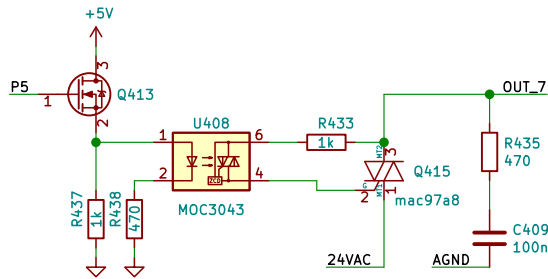
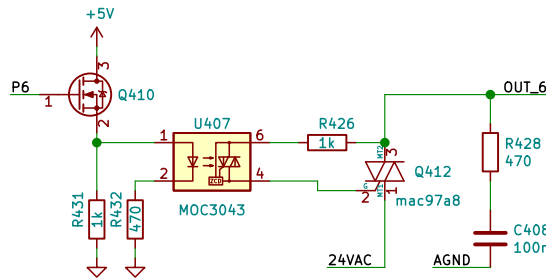
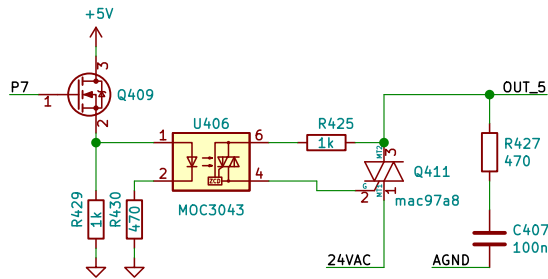
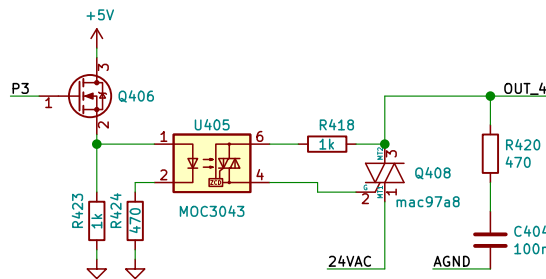
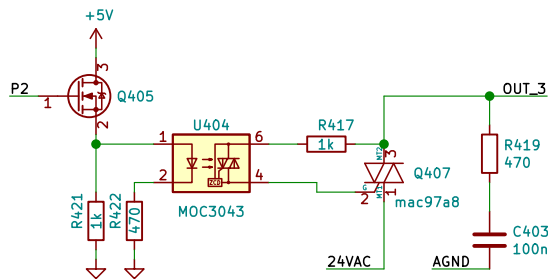
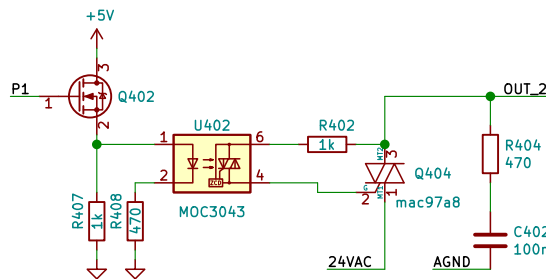
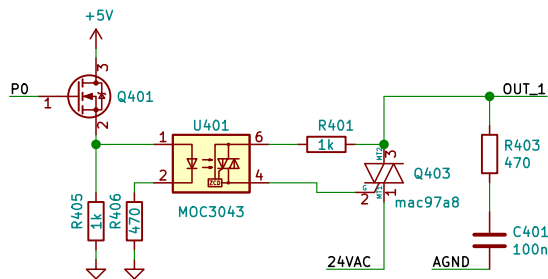
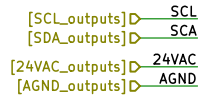
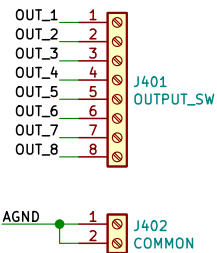
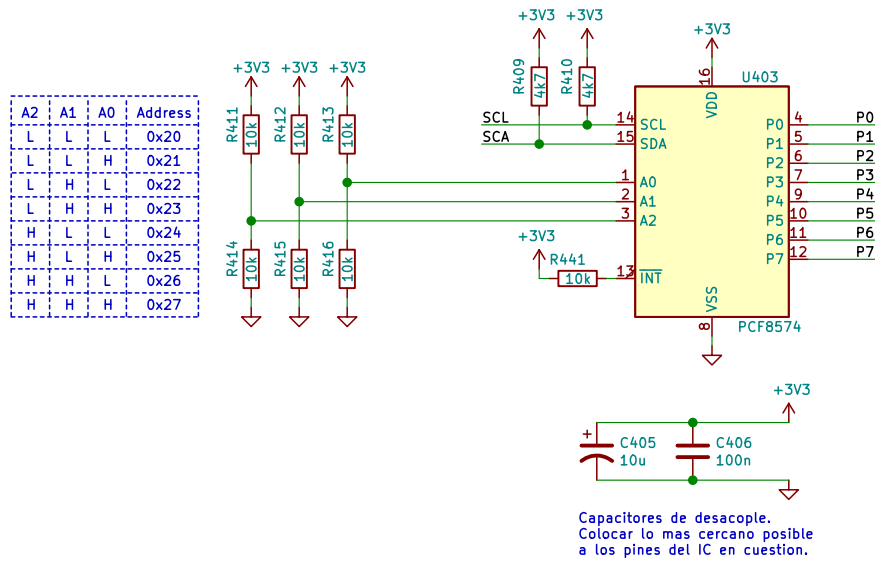
**Autor:** Castro, Franco  
Cussa, Mayco  
Navarro, Facundo  
Nobile, Jonathan

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**File:** inputs.sch

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

**Rev:**  
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OUTPUTS





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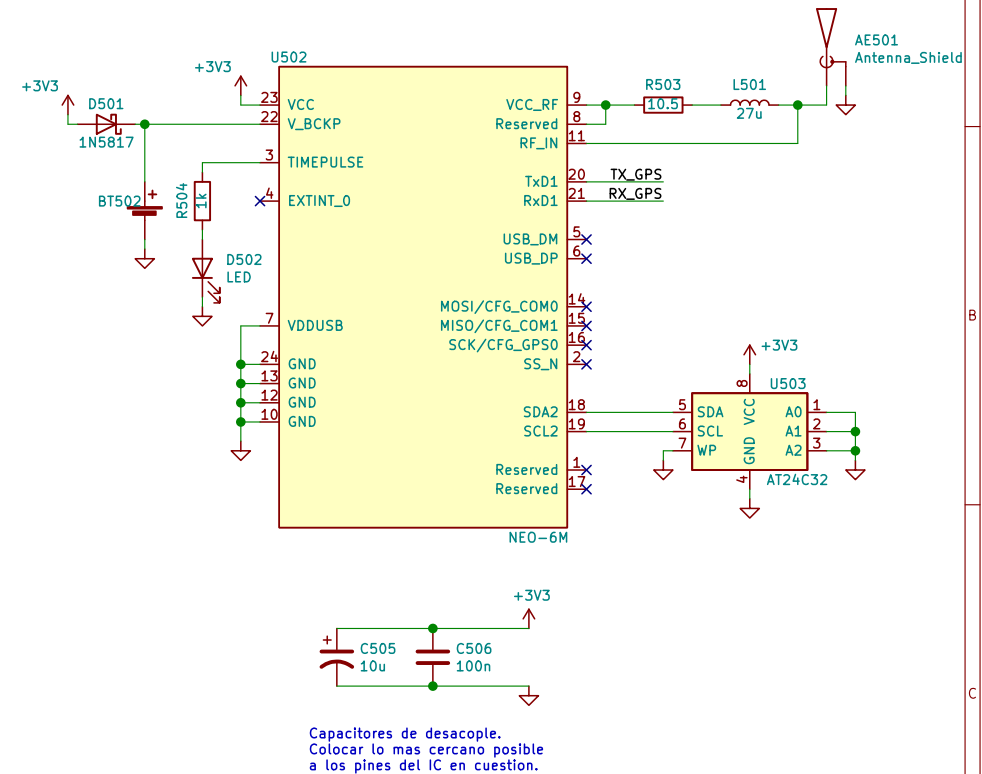
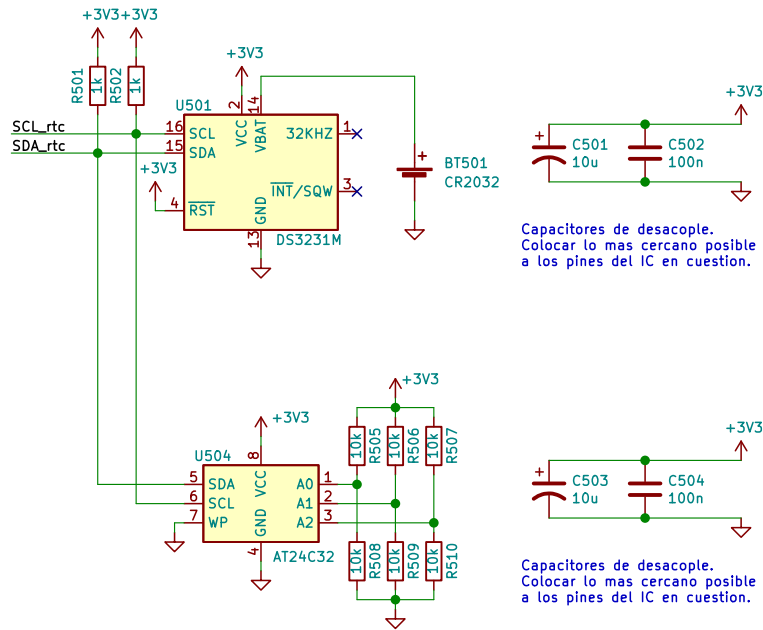


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Cussa, Mayco  
Navarro, Facundo  
Nobile, Jonathan

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File: Outputs.sch

Size: A3 Date: Rev:  
KiCad E.D.A. kicad 5.1.10 Id: 3/9

# GPS&RTC



[SDA\_rtc] D SDA\_rtc  
[SCL\_rtc] D SCL\_rtc  
[TX\_gps] D TX\_GPS  
[RX\_gps] D RX\_GPS



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**SMART  
SAFFRON**

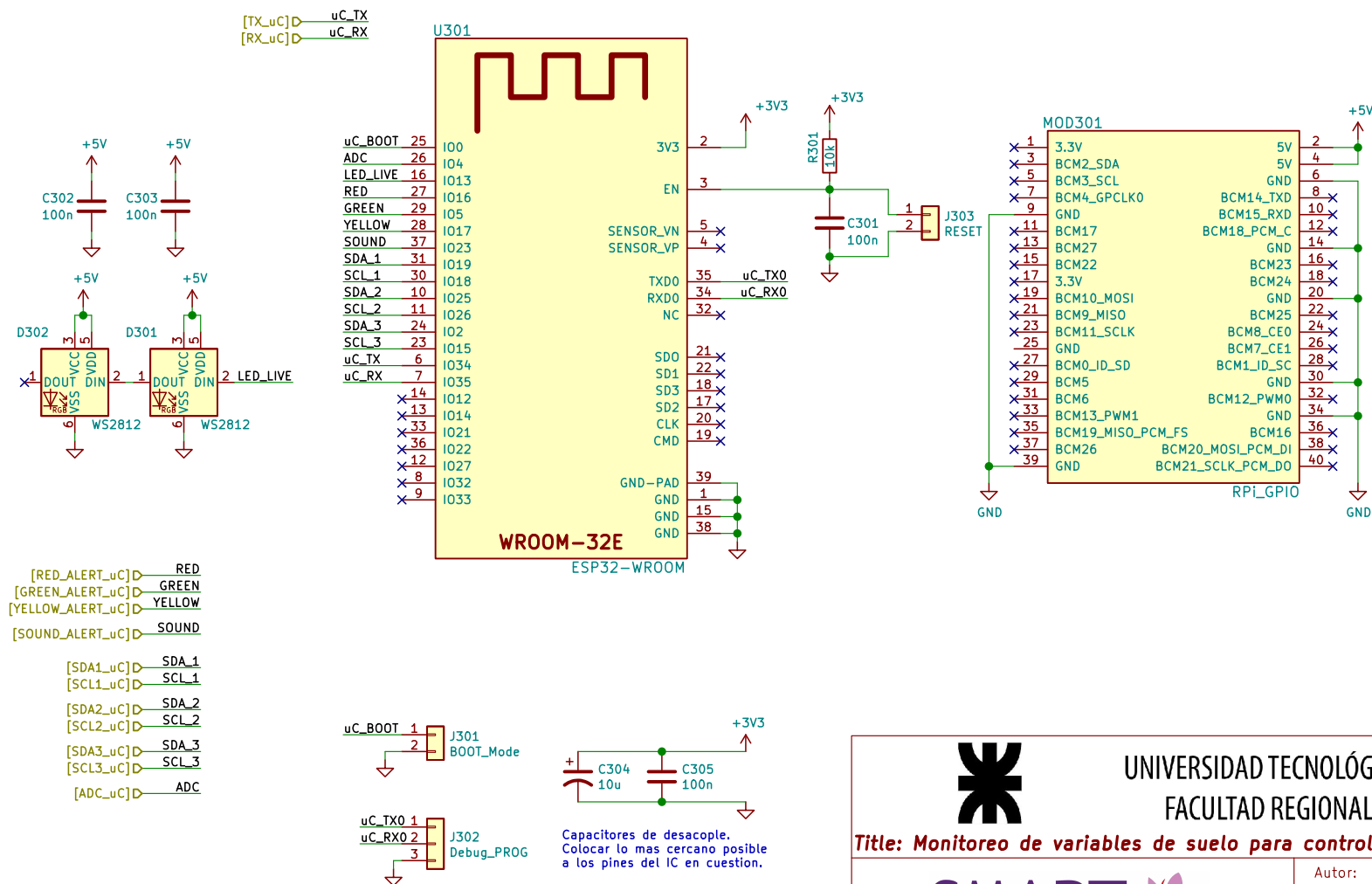
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Cussa, Mayco  
Navarro, Facundo  
Nobile, Jonathan

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

Rev:  
Id: 4/9

# CORE



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Autor: Castro, Franco  
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Navarro, Facundo  
Nobile, Jonathan

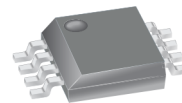
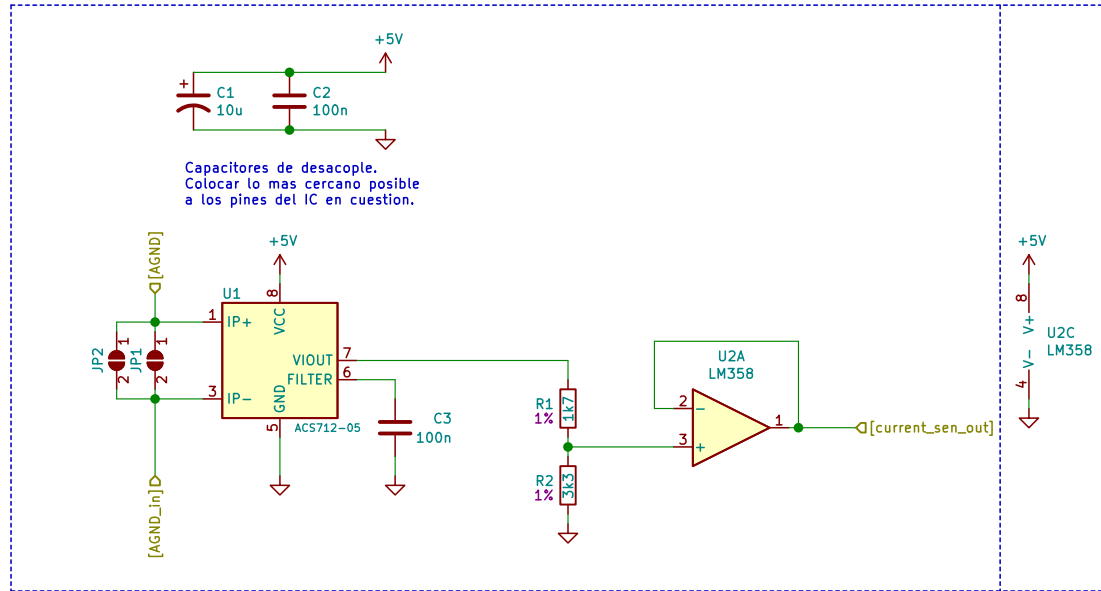
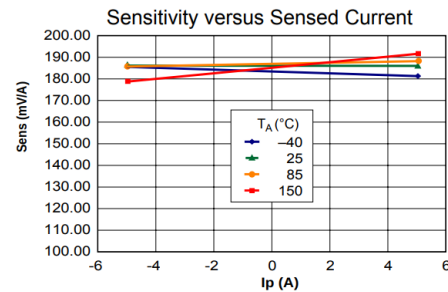
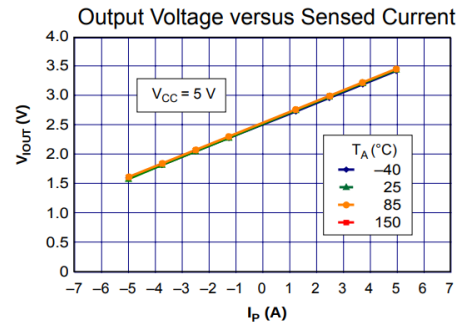
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Rev:  
Id: 5/9

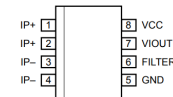
Capacitores de desacople.  
Colocar lo mas cercano posible  
a los pines del IC en cuestion.

# 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	VOUT	Analog output signal
8	VCC	Device power supply terminal

## COMMON OPERATING CHARACTERISTICS<sup>1</sup> 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
<b>ELECTRICAL CHARACTERISTICS</b>						
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	$C_{LOAD}$	VOUT to GND	—	—	10	nF
Output Resistive Load	$R_{LOAD}$	VOUT to GND	4.7	—	—	k $\Omega$
Primary Conductor Resistance	$R_{PRIMARY}$	$T_A = 25^{\circ}\text{C}$	—	1.2	—	m $\Omega$
Rise Time	$t_r$	$I_P = I_P(\text{max})$ , $T_A = 25^{\circ}\text{C}$ , $C_{OUT} = \text{open}$	—	5	—	$\mu\text{s}$
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	—	$\mu\text{s}$
Magnetic Coupling <sup>2</sup>			—	12	—	G/A
Internal Filter Resistance <sup>3</sup>	$R_{F(INT)}$		—	1.7	—	k $\Omega$

<sup>1</sup>Device 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.

<sup>2</sup>1G = 0.1 mT.

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



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SMART  
SAFFRON

Autor: Castro, Franco  
Cussa, Mayco  
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Nobile, Jonathan

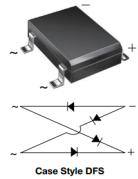
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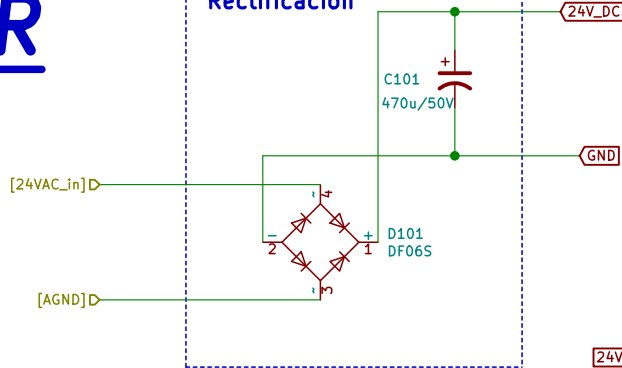
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Rev:  
Id: 6/9

# POWER

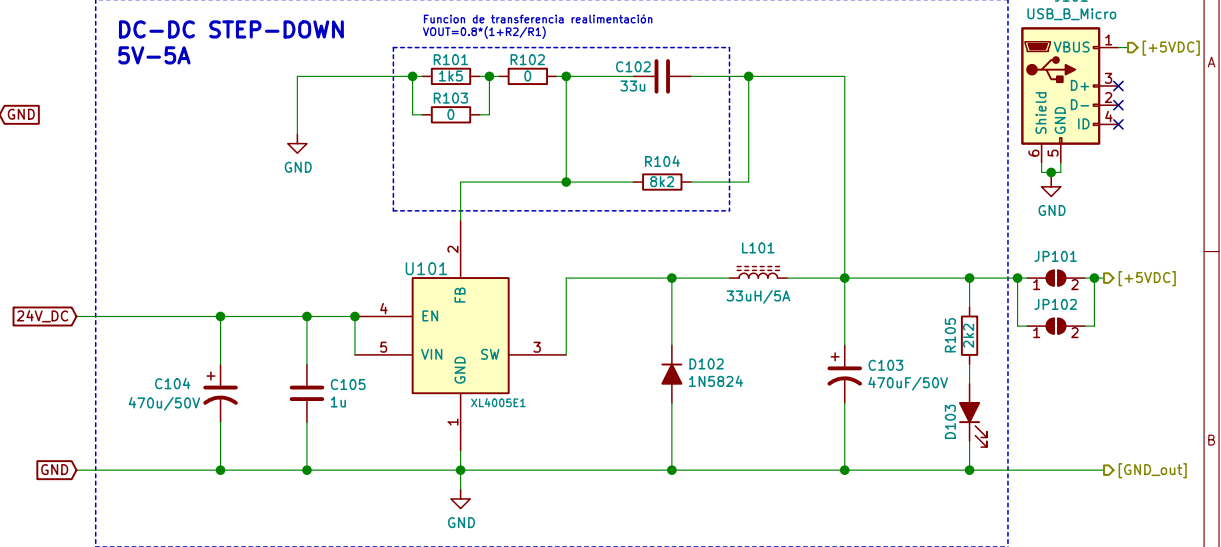


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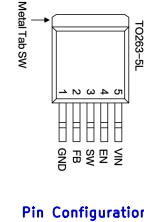
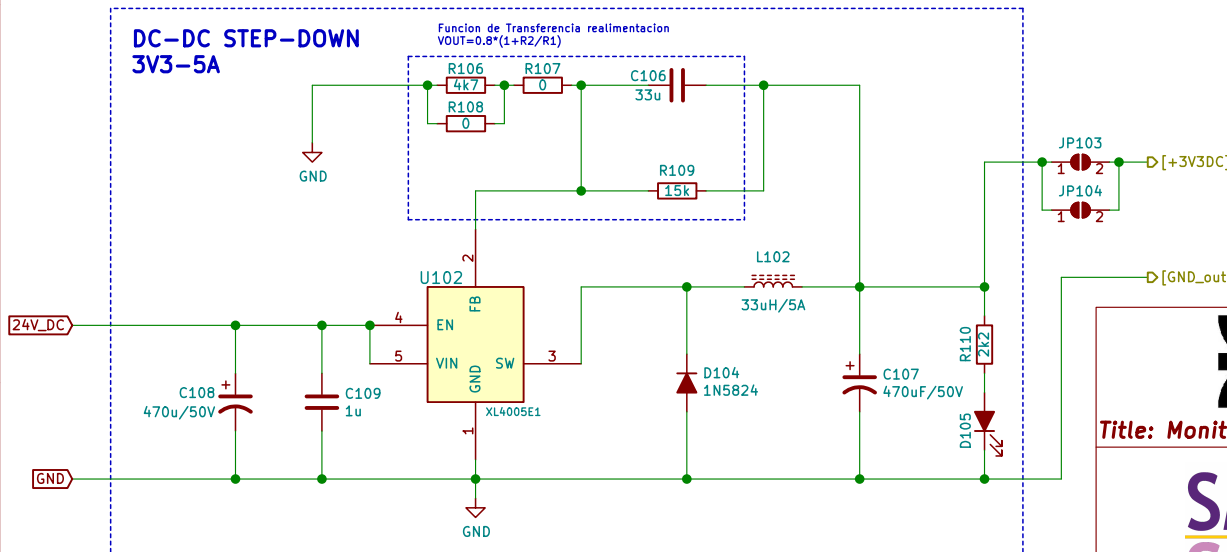


MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	DF005S	DF01S	DF02S	DF04S	DF06S	DF08S	DF10S
Device marking code		DF005S	DF01S	DF02S	DF04S	DF06S	DF08S	DF10S
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000
Maximum RMS voltage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

## DC-DC STEP-DOWN 5V-5A



## DC-DC STEP-DOWN 3V3-5A



### Absolute Maximum Ratings (Note1)

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



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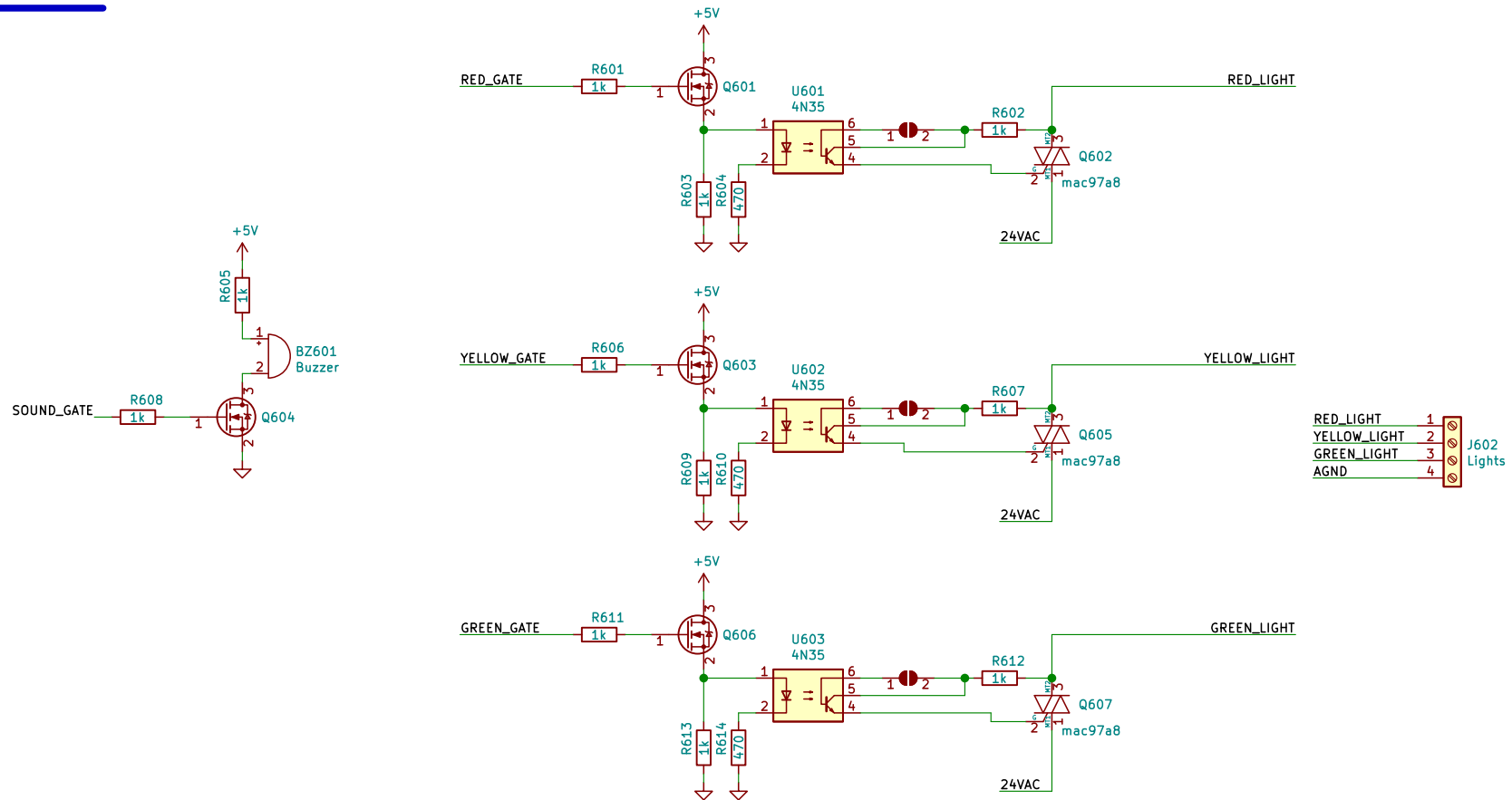
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Cussa, Mayco  
Navarro, Facundo  
Nobile, Jonathan

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Size: A4 Date:  
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# ALERTS



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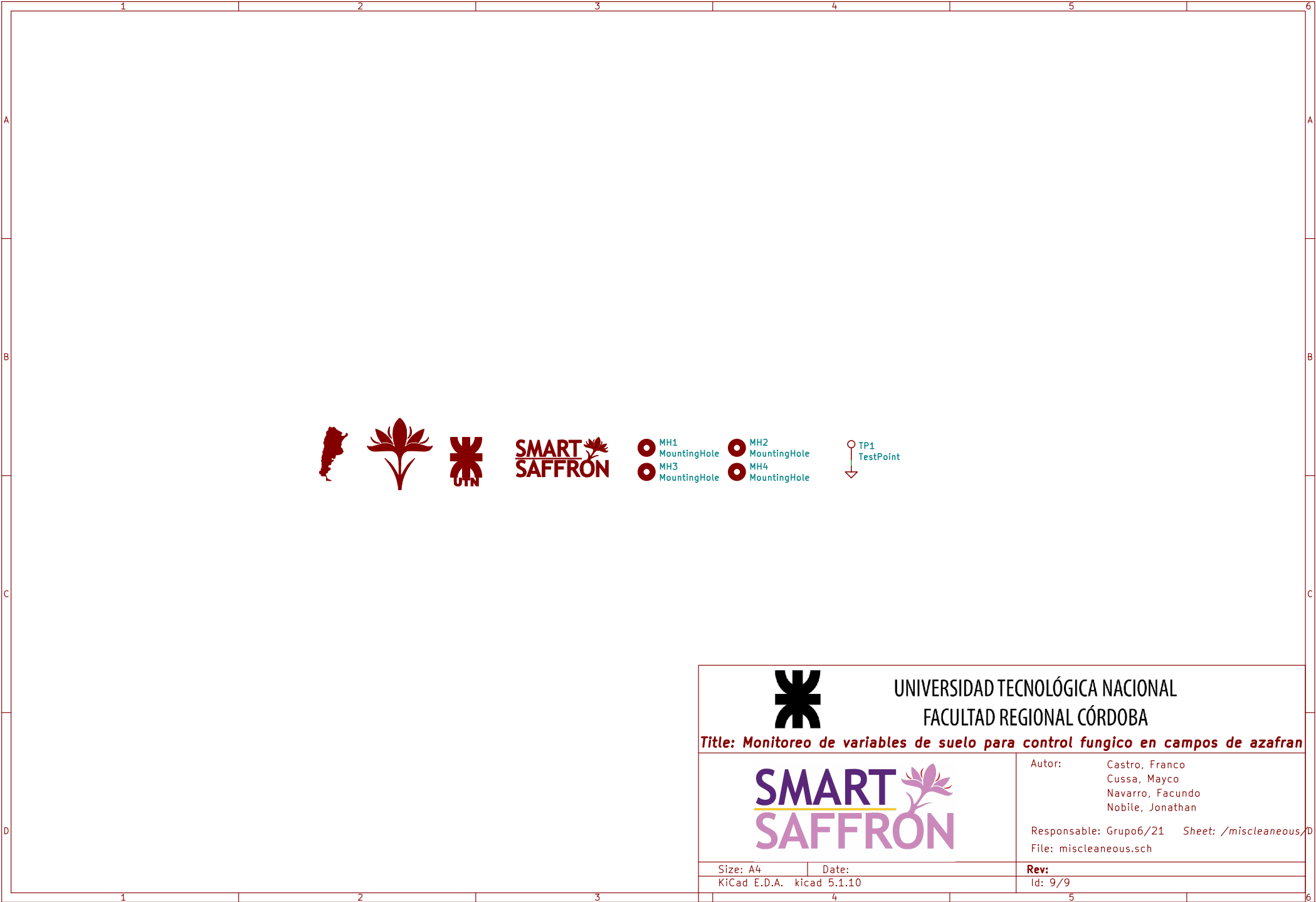
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Cussa, Mayco  
Navarro, Facundo  
Nobile, Jonathan

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**File:** Alerts.sch

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

**Rev:**  
Id: 8/9





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MH1  
MountingHole  
MH3  
MountingHole

MH2  
MountingHole  
MH4  
MountingHole

TP1  
TestPoint



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

Responsable: Grupo6/21 Sheet: /miscellaneous/D  
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