Soldado

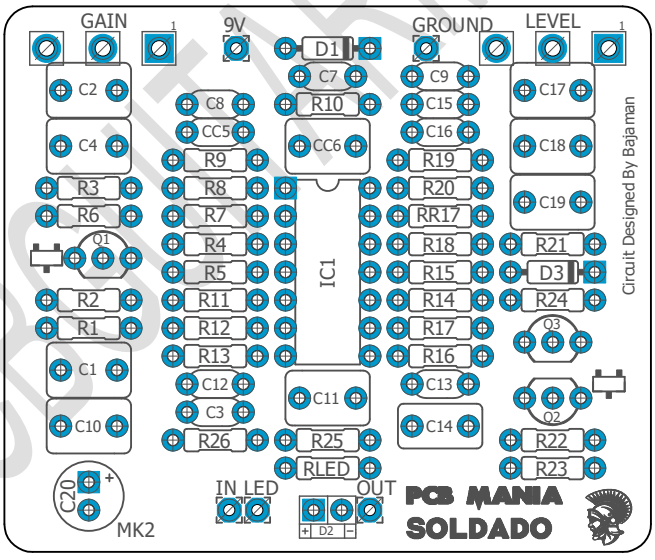
Based on:
Soldano SLO 100
Effect type:
High gain Overdrive
Build difficult:
Average

Amount of parts:
Low, total 59 components
Technology:
Ompamp Frequency response emulation
Power consumption:
9V

Enclosure type:
125b
Get your board at:
Soldado
Get your kit at:
Das Musikding (Europe)

Project overview:

Based on the frequency response of the Soldano Slo 100. Part of the series 'Develop your own Preamp' where you can combine preamp sections of iconic amplifiers with different types of eqs in order to create your own custom boutique pedal. More information about the EQ sections here.



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Introduction

Finally! My all-time favorite amp the Super Lead Overdrive got captured in a box without sacrificing the sound. So many really disappointing versions out there... None of them nailed it, till now!

You may wonder what it took to make this possible? Well... there is this legend from Freestompboxes called Bajaman and he worked on the circuit till his design matched the exact frequency response of the actually amp. Meaning this is not just a Jfet version of Preamp that gets you somehow... eventually close to it. IT IS the tone you are looking for! So how do I know that, did I compare it to one of this super rare amps? Yes, because I actually own a Soldano SLO 100 ™ that never leaves my house and it only took me one strum to hear that the search is over. From classic Rock to pushing mid pronounced metal tones that cut trough. If you are looking for that SLO sound. I promise, you will not be disappointed.

Controls

- Volume
- Gain

Bill of materials

Resistors	
Part	**Value**
R1	1M5
R2	1M
R3	10K
R4	100K
R5	6K8
R6	1K5
R7	1K
R8	8K2
R9	100K
R10	100K
R11	1K
R12	1K
R13	2K7
R14	47K
R15	100K
R16	2K7
R17	1K
R18	22K
R19	2K7
R20	1K
R21	2k2
R22	1M
R23	10K
R24	1K
R25	10K
R26	10K
RLED	4K7
RR17	33K

Diods	
Part	**Value**
D1	1N5817
D2	LEDSTATUS-LED
D3	1N4148

IC	
Part	**Value**
IC1	TL064

Capacitors	
Part	**Value**
C1	1u
C2	1u
C3	120p
C4	1u
C7	10n
C8	2n2
C9	560p
C10	1u
C11	1u
C12	560p
C13	33n
C14	220n
C15	330p
C16	10n
C17	1u
C18	1u
C19	1u
CC5	1n
CC6	1u

Electrolytics Capacitors	
Part	**Value**
C20	220u

Potentiometers	
Part	**Value**
GAIN	B100K
LEVEL	B100K

Transistors	
Part	**Value**
Q1	J201
Q2	J201
Q3	BC547B

Shopping list

Resistors		
Qty	**Value**	**Parts**
4	100K	R4, R9, R10, R15
4	10K	R3, R23, R25, R26
6	1K	R7, R11, R12, R17, R20, R24
1	1K5	R6
2	1M	R2, R22
1	1M5	R1
1	22K	R18
3	2K7	R13, R16, R19
1	2k2	R21
1	33K	RR17
1	47K	R14
1	4K7	RLED
1	6K8	R5
1	8K2	R8

Capacitors		
Qty	**Value**	**Parts**
2	10n	C7, C16
1	120p	C3
1	1n	CC5
9	1u	C1, C2, C4, C10, C11, C17, C18, C19, CC6
1	220n	C14
1	2n2	C8
1	330p	C15
1	33n	C13
2	560p	C9, C12

Electrolytics Capacitors		
Qty	**Value**	**Parts**
1	220u	C20

Potentiometers		
Qty		**Parts**
1	B100K	GAIN, LEVEL

IC		
Qty	**Value**	**Parts**
1	TL064	IC1

Transistors		
Qty	**Value**	**Parts**
1	BC547B	Q3
2	J201	Q1, Q2

Diods		
Qty	**Value**	**Parts**
1	1N4148	D3
1	1N5817	D1
1	LED 3mm	D2

Components Recommendations

As many people like to experiment some pedals with higher voltage, always ensure the max tolerance of your **electrolytic capacitors** is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf, and ceramics discs for the ones under 1nf. However, high quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusively regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

Sidenote, there are Plenty 1uf capacitors close to each other in this build. I highly recommend using WIMA MKS2 63V or something similar in size - even smaller would be better. Panasonics SMF for instance. You will run into some problems when you are not checking the footprints before you start soldering. Also give the IC a dry fit before you solder the 1uf on above and underneath the IC. Depending where you get the chips they can be wider than you IC Socket. Meaning you may not want to sit that capacitors so close on the pub that you can't bend them a little more.
You can also try to stack sockets for the IC, this will raise the height making more comfortable to fit in between the capacitors.

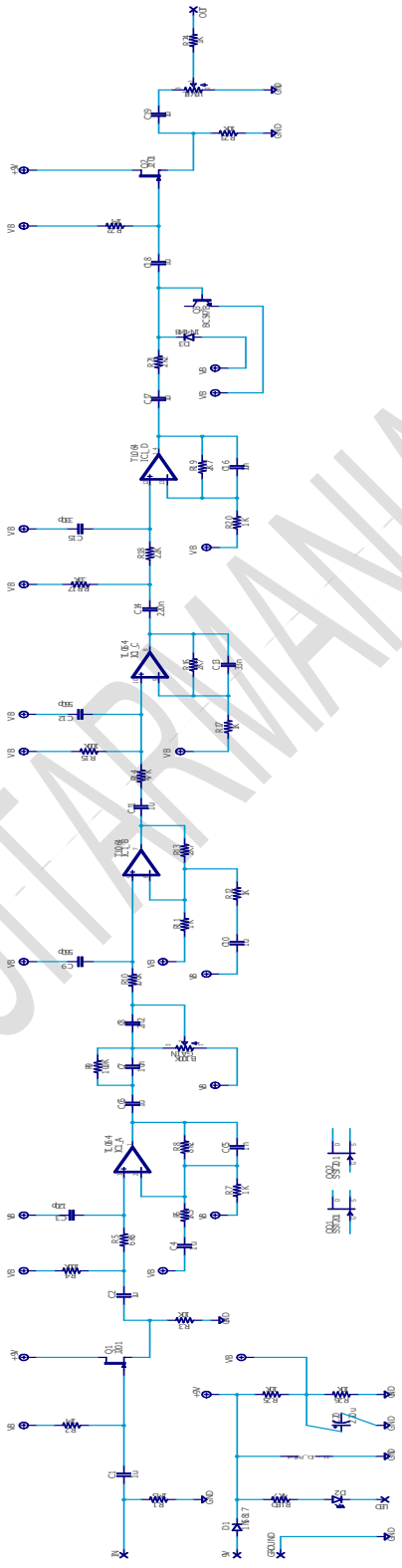
Build Notes

If this is one of your first projects I recommend you to take a look on our Pedal Building Guide

For a successful and tidy build it's recommended the following order:

1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off board wiring

Schematic



Wiring Diagram

All our projects include a free 3PDT Board to make the wiring easier and tidier. Also all of our PCBs feature the status LED on board.

The pad named “Ctrl” or “LED” is the one that controls the status of the led, wire it to the “LED”pad on the 3PDT board, or in control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB check it here to access to our Pedal Wiring Guide

Drill Template

This Project has been planned to fit into a 125b enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print in an A4 page.

Licensing and Usage

We really appreciate your trust and support buying this PCB, as well as your will to dive into the DIY electronics world. That’s why for us is really important that you can make this project work properly and to enjoy not only the building process, but also to experiment and play with it on your rig.

We try to reply to every question we receive on our email or in our social media, but we try to encourage all our customers to join our PCB Guitar Mania – Builders Group on Facebook, in order to post all your doubts, issues, suggestions or request, as well to share your builds and have some feedback from us and other fellow builders!

All of our projects have been tested following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been tested. These are suggestions based on the schematic analysis, and on the experiences and opinions of others. Feel free to share with us your opinions and suggestions regarding the mods your own personal experimentation.

These boards may be used for commercial endeavors in any quantity unless specifically noted. No attribution is necessary, though accreditation or a link back is always greatly appreciated.

If you are a builder planning to make your own run of pedals we also offer the service of custom made boards with your brand and logo, design according your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silk screen, or other way of trying to hide our logos and the source of the PCBs. Like it’s written above, if you want to have your own designs, with your brand and logo we could certainly reach an agreement.

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