Paulo Gilberto

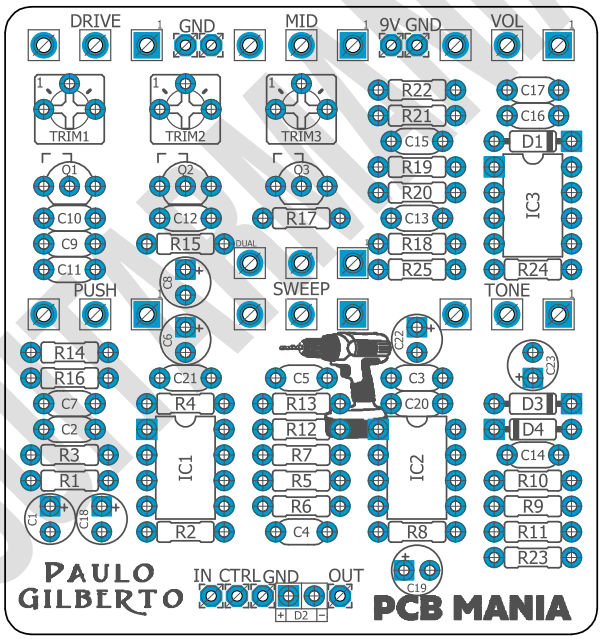
Based on:
JHS PG-14
Effect type:
Overdrive, fuzz, distortion
Build difficult:
Advanced

Number of parts:
Average, total 67 components
Technology:
Hunting mids (op amp section) + Super bolt (J-FET)
Power consumption:
9V

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

Project overview:
This drive is one of those very few pedals that sounds fresh, although this circuit's architecture is basically a JHS Haunting mids +JHS Super bolt.

Oh man, this combination is a total killer, nailing every pallet of overdrive to saturated sputter fuzz tones.



Index

Introduction

A unique distortion circuit designed explicitly to Paul's specifications, and oh man, it shows. Paulo Gilberto can emulate a pushed tube amplifier's touch, feel, and sensitivity thanks to its FET-based distortion engine. This board will give you the dynamics and tone of a loud stadium level amplifier at low/moderate volume levels!

Controls

Potentiometers

- DRIVE
- MID
- PUSH
- TONE
- VOL
- SWEED

Bill of materials

Resistors	
Part	**Value**
R1	1m
R2	470k
R3	10k
R4	4k7
R5	22k
R6	3k3
R7	22k
R8	5k6
R9	5k6
R10	6k8
R11	3k3
R12	4k7
R13	4k7
R14	1m
R15	1k5
R16	470k
R17	2k7
R18	120k
R19	470k
R20	330r
R21	12k
R22	12k
R23	4k7
R24	10k
R25	10k

Capacitors	
Part	**Value**
C2	47p
C3	10n
C4	1n5
C5	47p
C7	22n
C9	470p
C10	4n7
C11	4n7
C12	470p
C13	10n
C14	4n7
C15	10n
C16	3n3
C17	3n3
C20	100n
C21	100n

Electrolytics Capacitors	
Part	**Value**
C1	4u7
C6	4u7
C8	47u
C18	100u
C19	10u
C22	10u
C23	10u

Potentiometers	
Part	**Value**
DRIVE	500k A
MID	10k B
PUSH	10k B
TONE	500k A
VOL	50k A
SWEEP	100K B DUAL

Trimpots	
Part	**Value**
TRIM1	100k
TRIM2	100k
TRIM3	100k

IC	
Part	**Value**
IC1	NE5532
IC2	TL072
IC3	TC1044SCPA

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

Diodes	
Part	**Value**
D1	1n5817
D2	3mm red LED
D3	1n5817
D4	1n5817

Shopping list

Resistors		
Qty	**Value**	**Parts**
3	10k	R3, R24, R25
1	120k	R18
2	12k	R21, R22
1	1k5	R15
2	1m	R1, R14
2	22k	R5, R7
1	2k7	R17
1	330r	R20
2	3k3	R6, R11
3	470k	R2, R16, R19
4	4k7	R4, R12, R13, R23
2	5k6	R8, R9
1	6k8	R10

Capacitors		
Qty	**Value**	**Parts**
2	100n	C20, C21
3	10n	C3, C13, C15
1	1n5	C4
1	22n	C7
2	3n3	C16, C17
2	470p	C9, C12
2	47p	C2, C5
3	4n7	C10, C11, C14

Electrolytics Capacitors		
Qty	**Value**	**Parts**
1	100u	C18
3	10u	C19, C22, C23
1	47u	C8
2	4u7	C1, C6

Potentiometers		
Qty	**Value**	**Parts**
2	10k B	MID, PUSH
2	500k A	DRIVE, TONE
1	50k A	VOL
1	100K B DUAL	SWEEP

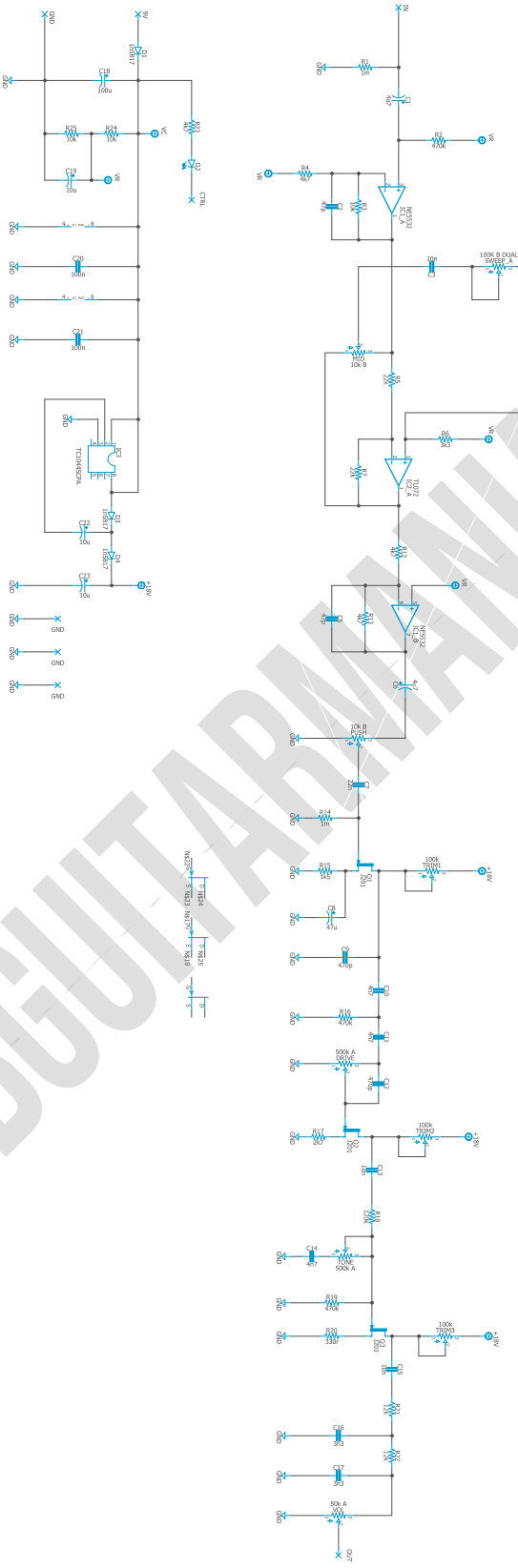
Trimpots		
Qty	**Value**	**Parts**
3	100k	TRIM1, TRIM2, TRIM3

IC		
Qty	**Value**	**Parts**
1	NE5532	IC1
1	TC1044SCPA	IC3
1	TL072	IC2

Transistors		
Qty	**Value**	**Parts**
3	J201	Q1, Q2, Q3

Diodes		
Qty	**Value**	**Parts**
3	1n5817	D1, D3, D4
1	3mm red LED	D2

Schematic



Components Recommendations

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

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those 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 exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

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 the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it here to access 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 on an A4 page.

Build Notes

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

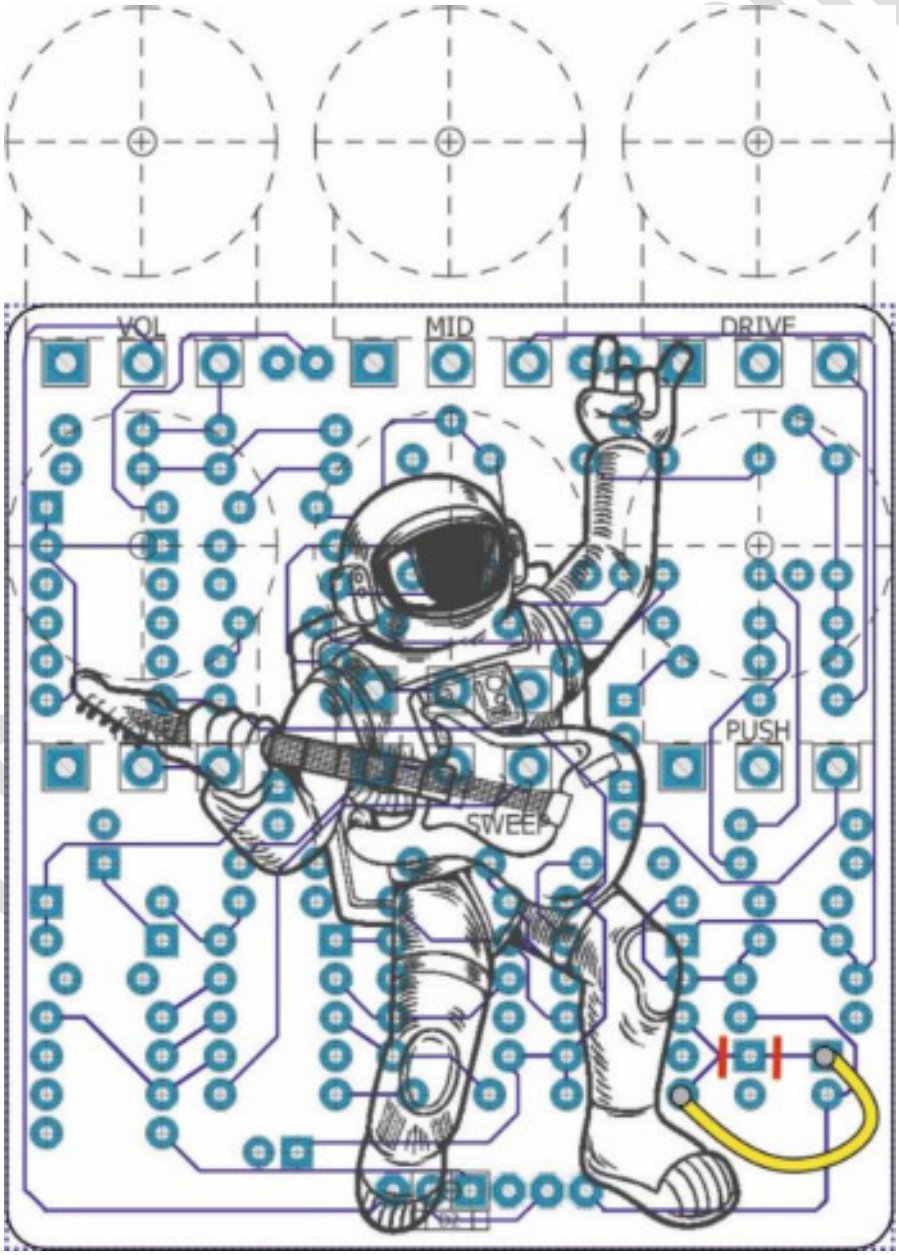
For a successful and tidy build, it’s recommended the following order:

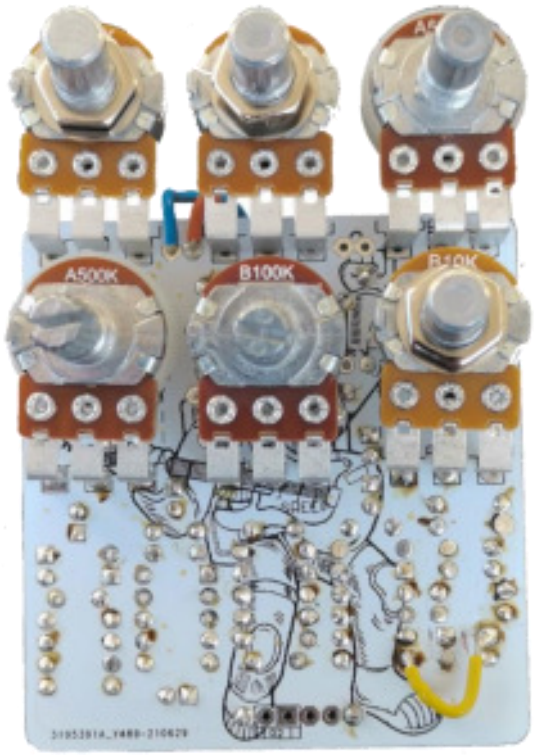
1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)

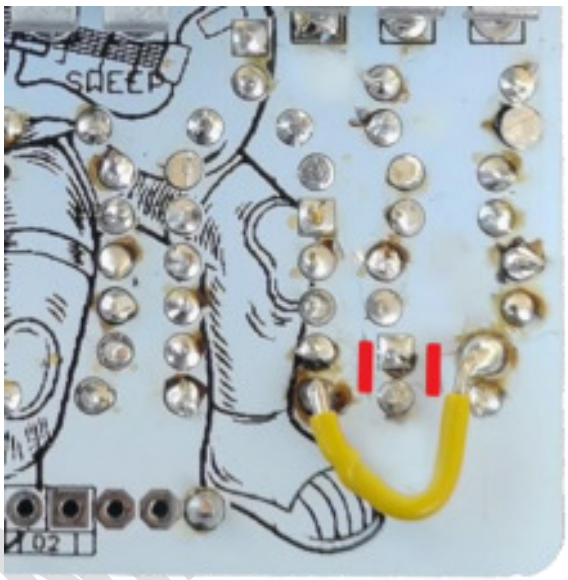
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

IMPORTANT

The first version of this project is on sale due to a minor mistake on the PCB. You can fix it quickly by placing a jumper and cutting a trace on the bottom of the board as you can see in the pictures below. The red lines indicates where you have to make the cuts. Version 1.1v of this board has this problem solved.







Licensing and Usage

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

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

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

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much 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 to 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 silkscreen 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 designs with your brand and logo, we could undoubtedly reach an agreement.

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