

# Homebrew Overdrive

## Based on:

JHS Moonshine V2

## Effect type:

Non-transparent overdrive w/clean blend

## Build difficult:

Average

## Amount of parts:

Average, total 62 components

## Technology:

Dual Opamp + Charge pump

## Power consumption:

9V (30mA)

## Enclosure type:

125b

## Get your board at:

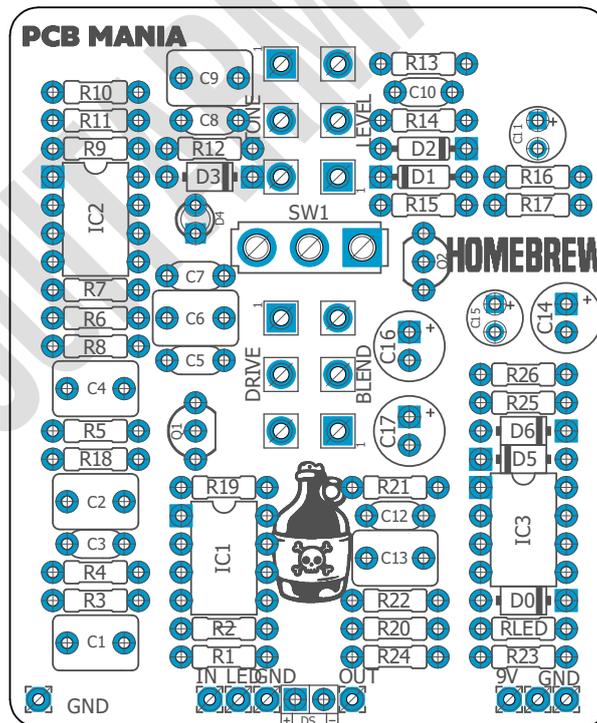
[Homebrew Overdrive](#)

## Get your kit at:

[Das Musikding \(Europe\)](#)

## Project overview:

Inspired by JHS Moonshine v2. Non-transparent overdrive, featuring a clean blend that adds all the sparkle, breath, clarity, and individual string definition you need. The Homebrew attempts to follow the traditional recipe of one of the most famous green overdrives out there but delivering much stronger results. This pedal features an internal charge pump that doubles your 9v input into 18v. **So remember use electrolytic capacitors rated for 25v or more!**



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## Introduction

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Homebrew, Moonshine, Rakjia, call it as you, but you'd definitely enjoy getting drunk on this overdrive. When I read for the first time about this pedal I felt it was indeed one of the very few TS-based pedals that were bringing something new on the table that the market was actually asking for.

JHS addressed many of the common complaints about the classic TS pedals, like the lack of clarity and loss of bass, which they solve through 2 creative add-ons, a clean blend, and a charge pump. The first one split the signal in between overdriven and clean, keeping the bass response and clarity intact, while the charge pump boosts the volume while adding headroom by operating the pedal at 18v from a simple 9v power supply.

The Diodes toggle adds also versatility on the pedal, allowing you to switch in between silicon diodes and red LEDs. In the original unit is a 2 positions SPDT, but we suggest you to try a 3 position SPDT, so you can have the "No diodes" option in the middle, giving you even more volume and clarity.

This pedal will be definitely that addition you were looking for on your board, great for stack before and after other drives or fuzzes, versatile enough for people who want to tickle their tube amp, metal players who want to tight up and boost their town, or even to use it as a standalone dumblesque overdrive.

## Controls

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- Drive
- Level
- Tone
- Blend
- Diode Toggle

# Bill of materials

Resistors	
Part	Value
R1	1M
R2	1M
R3	1K
R4	510K
R5	10K
R6	10K
R7	10K
R8	1K
R9	1K
R10	220R
R11	10K
R12	1K
R13	1K
R14	510K
R15	10K
R16	100R
R17	15K
R18	15K
R19	15K
R20	15K
R21	50K
R22	3K6
R23	10K
R24	100R
R25	47K
R26	47K
RLED	4K7

Capacitors	
Part	Value
C1	1u
C2	1u
C3	27n
C4	1u
C5	51p
C6	330n
C7	220n
C8	220n
C9	1u
C10	100n
C12	100p
C13	1u

Electrolytic Capacitors*	
Part	Value
C11	10u
C14	100u
C15	10u
C16	100u
C17	100u

Potentiometers	
Part	Value
BLEND	B10K
DRIVE	A500K
LEVEL	B100K
TONE	B5K

TREB	A10k
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IC	
Part	Value
IC1	NE5532
IC2	LM833
IC3	TC1044SCPA

Transistors	
Part	Value
Q1	2N3904
Q2	2N3904

Switches	
Part	Value
SW1	On/Off/On

Diodes	
Part	Value
D0	1N5817
D1	BA482
D2	BA482
D3	1N4002
D4	3mm Red LED
D5	1N5817
D6	1N5817
DS	3mm LED

# Shopping list

Resistors		
Qty	Value	Parts
2	100R	R16, R24
6	10K	R5, R6, R7, R11, R15, R23
4	15K	R17, R18, R19, R20
5	1K	R3, R8, R9, R12, R13
2	1M	R1, R2
1	220R	R10
1	3K6	R22
2	47K	R25, R26
1	4K7	RLED
1	50K	R21
2	510K	R4, R14

Capacitors		
Qty	Value	Parts
1	100n	C10
1	100p	C12
5	1u	C1, C2, C4, C9, C13
2	220n	C7, C8
1	27n	C3
1	330n	C6
1	51p	C5

Electrolytics Capacitors*		
Qty	Value	Parts
3	100u	C14, C16, C17
2	10u	C11, C15

Potentiometers		
Qty	Value	Parts
1	A500K	DRIVE
1	B100K	LEVEL
1	B10K	BLEND
1	B5K	TONE

IC		
Qty	Value	Parts
1	LM833	IC2
1	NE5532	IC1
1	TC1044SCPA	IC3

Transistors		
Qty	Value	Parts
2	2N3904	Q1, Q2

Switches		
Qty	Value	Parts
1	On/Off/On	SW1

Diodes		
Qty	Value	Parts
1	1N4002	D3
3	1N5817	D0, D5, D6
2	BA482	D1, D2
1	3mm LED	DS
1	3mm Red LED	D4



# Components Recommendations

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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.

**ELECTROLITIC CAPACITORS:** This pedal has an internal charge pump that raises the 9v from your power supply to 18v, so remember **use only electrolytic capacitors rated for 18v or more!**

## Build Notes

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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

## Wiring Diagram

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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

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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

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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.

Follow us on [Instagram](#) and [Facebook](#) to stay in tune with the latest projects!