Einstein Constant Overdrive

Based on:
Greer Lightspeed

Effect type:
Transparent overdrive

Build difficult:
Easy

Number of parts:
Low, 36 components

Technology:
High performance audio amp

Power consumption:
9V

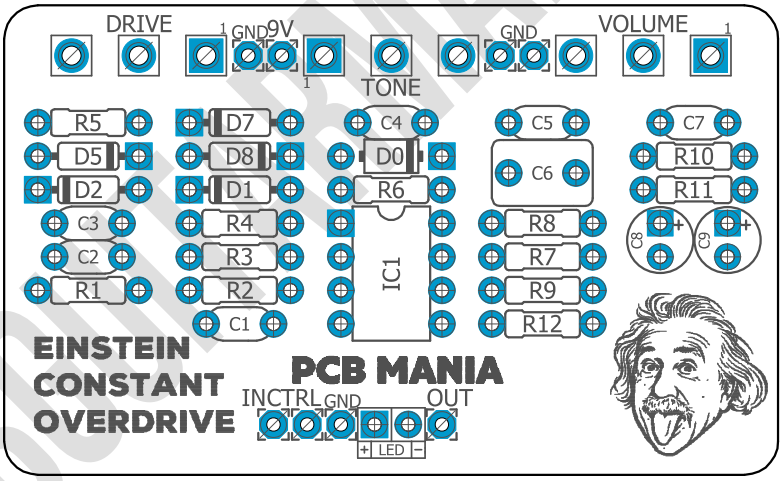
Enclosure type:
125b

Get your board at:
Einstein Constant Overdrive

Get your kit at:
Das Musikding (Europe)

Project overview:

Introducing the Einstein Constant Overdrive, the pedal that can go from natural light to a mild overdrive with rich harmonics and smooth clipping at the speed of light! It can be set to sound like the original signal, making it perfect for those who appreciate transparency. Plus, it features true bypass, so your tone is never compromised.



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Introduction

Looking to add some natural drive to your tone? The Einstein Organic Overdrive is just what you need. This pedal delivers a clear, organic sound that's perfect for players who want a natural overdrive tone.

Blending with the tone of your guitar and amplifier, this pedal has rich harmonics and complex but smooth clipping. With its sensitive pick attacks and "transparent" setting, the Einstein Organic Overdrive is perfect for players who want to add a touch of overdrive without losing their original sound.

Controls

Potentiometers

- Volume
- Tone
- Drive

Bill of materials

Resistors	
Part	**Value**
R1	1m
R2	430k
R3	3k3
R4	12k
R5	5k6
R6	5k6
R7	3k9
R8	4k7
R9	3k3
R10	4k7
R11	5k6
R12	4k7

Capacitors	
Part	**Value**
C1	47n
C2	47n
C3	470n
C4	100p
C5	10n
C6	1u
C7	220n

Electrolytic Capacitors	
Part	**Value**
C8	22u
C9	22u

Potentiometers	
Part	**Value**
DRIVE	500k A
TONE	10k A
VOLUME	100k A

Trimpots	
Part	**Value**
IC1	opa2134

Switches	
Part	**Value**
-	3PDT Stomp foot

Diodes	
Part	**Value**
D0	1n5817
D1	1n914
D2	1n914
D5	1n914
D7	1n914
D8	1n914
LED	3mm red LED

Shopping list

Resistors		
Qty	**Value**	**Parts**
1	12k	R4
1	1m	R1
2	3k3	R3, R9
1	3k9	R7
1	430k	R2
3	4k7	R8, R10, R12
3	5k6	R5, R6, R11

Capacitors		
Qty	**Value**	**Parts**
1	100p	C4
1	10n	C5
1	1u	C6
1	220n	C7
1	470n	C3
2	47n	C1, C2

Electrolytic Capacitors		
Qty	**Value**	**Parts**
2	22u	C8, C9

Potentiometers		
Qty	**Value**	**Parts**
1	100k A	VOLUME
1	10k A	TONE
1	500k A	DRIVE

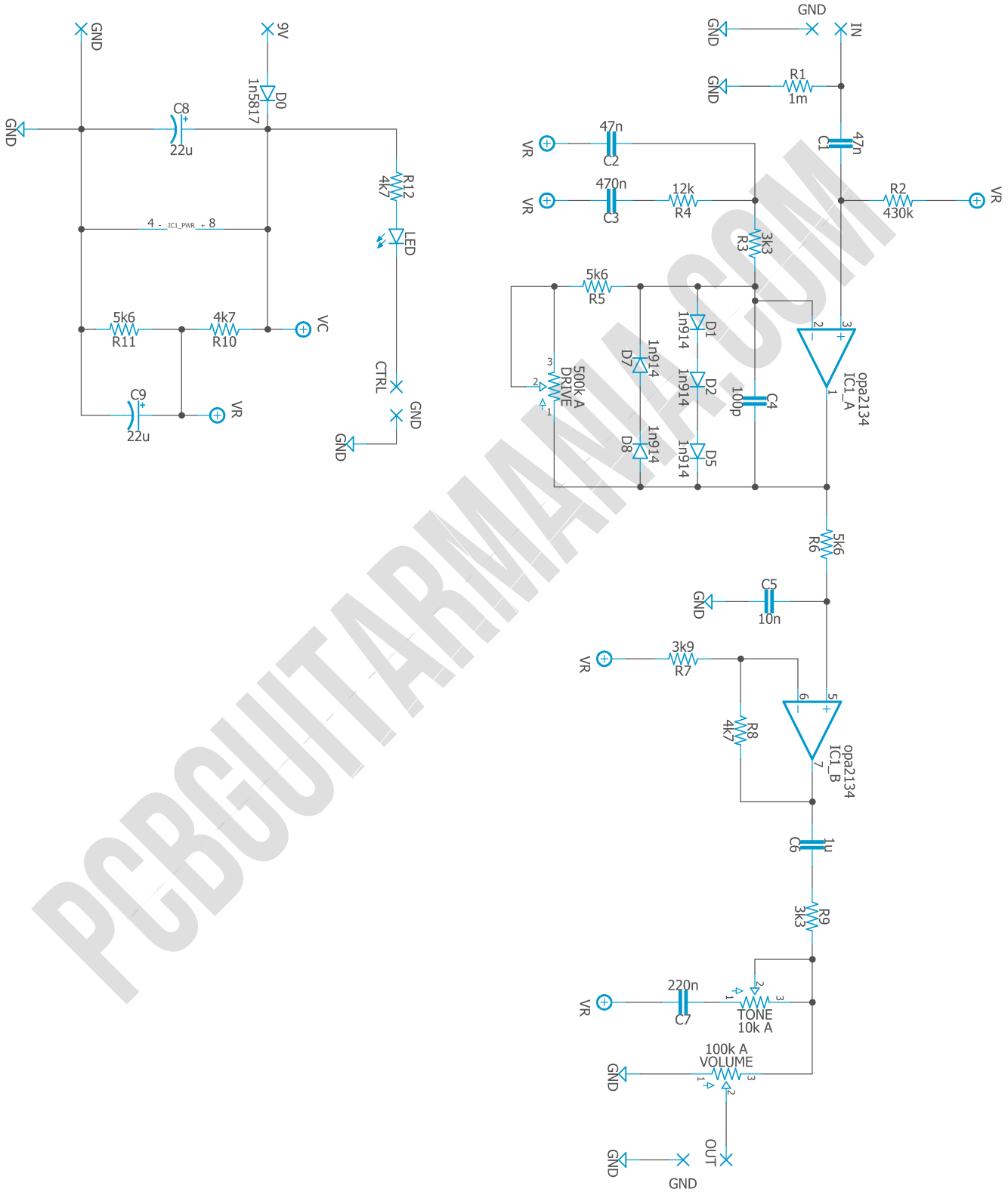
Switches		
Qty	**Value**	**Parts**
1	3PDT Stomp foot	-

IC		
Qty	**Value**	**Parts**
1	opa2134	IC1

Diodes		
Qty	**Value**	**Parts**
1	1n5817	D0
5	1n914	D1, D2, D5, D7, D8
1	3mm red LED	LED

Jacks		
Qty	**Value**	**Parts**
1	DC JACK	-
2	AUDIO JACK	-

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.

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

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.

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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