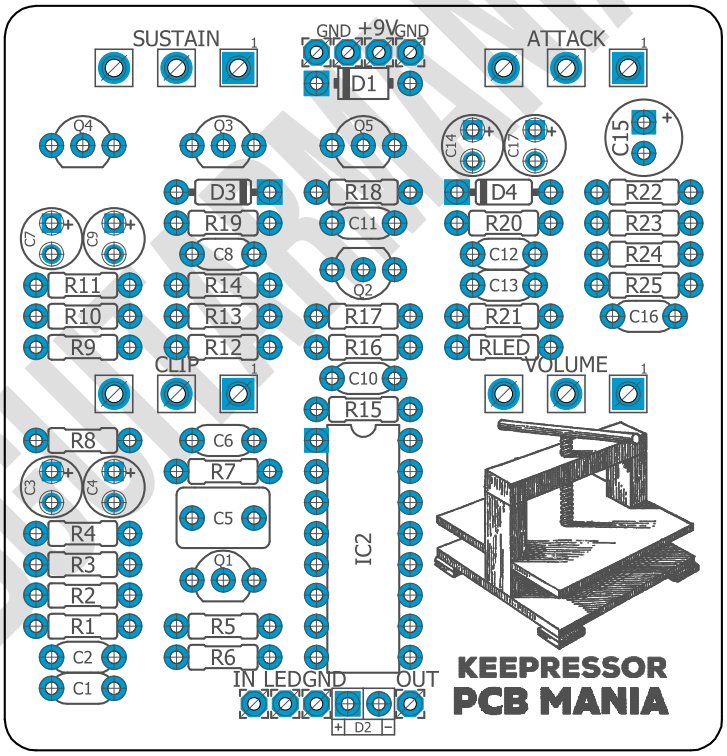
Keepressor

Based on:
Keelley compresor
Effect type:
Compressor
Build difficult:
Intermediate

Number of parts:
Average, total 61 components
Technology:
Dual Transconductance Op Amp+ NPN silicon transistors
Power consumption:
9V

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

Project overview:
We all know that the Keeley Compressor is the most acclaimed boutique compressor in the world. The reason is simple; the pedal can make an instrument sound like it's been professionally recorded assuring you that whether you're a beginner or a pro, it will take your sound to the next level.



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Introduction

Keepressor is a compressor with an expander/sustainer. This means that besides acting as a regular compressor that limits the peaks in your playing, it also adds more and more gain as notes fade out, giving your notes life beyond their natural lifespan. Isn't that great? A pedal that offers the right amount of sustain and expressive bloom your notes need.

Also, the four knobs version gives you lots of easy-to-reach compression options, so it won't take you all day trying to find the perfect sound. Let's check them:

Sustain: Sets the amount of sustain. A good starting point is at about 9 o'clock. At 12 o'clock, you will get a full sound that is a great fit for funk or lead playing, compressing the loudest notes and raising up softer ones. At 3-5 o'clock, you will get a singing sound that feeds back easily. The noise level rises slightly from 3 o'clock onwards.

Volume: Sets output volume level.

Attack: this pedal has an Internal Attack control, designed for bass players with high-output active pickups or active pedal boards with buffers.

Clip: it also has an Input Sensitivity Control, meaning you can use this in your studio to run keyboards, drum machines, drum mics, even master recordings, and other line-level uses. You'll raise your signal to a new level of sonic awesomeness.

Controls

Potentiometers

- Attack
- Clip
- Sustain
- Volume

Bill of materials

Resistors	
Part	**Value**
R1	4M7
R2	10K
R3	470K
R4	470K
R5	10K
R6	10K
R7	390K
R8	1M
R9	1K
R10	220K
R11	56K
R12	1K
R13	1M
R14	15K
R15	150K
R16	27K
R17	10K
R18	10K
R19	1M
R20	1M
R21	10K
R22	390K
R23	10K
R24	56K
R25	27K
RLED	4K7

Capacitors	
Part	**Value**
C1	150p
C2	10n
C5*	1u
C6	2n2
C8	10n
C10	1n
C11	10n
C12	10n
C13	47n
C16	100n

Electrolytic Capacitors	
Part	**Value**
C3	1u
C4	1u
C7	1u
C9	1u
C14	10u
C15	100u
C17	10u

Potentiometers	
Part	**Value**
ATTACK	250K C
CLIP	100K C
SUSTAIN	500K C
VOLUME	50K B

Trimpots	
Part	**Value**
IC2	LM13700N

Transistors	
Part	**Value**
Q1	2N3904
Q2	2N3904
Q3	2N3904
Q4	2N3904
Q5	2N3904

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

Diodes	
Part	**Value**
D1	1N5817
D2	3mm red LED
D3	1n914
D4	1n914

Jacks	
Part	**Value**
-	DC JACK
-	AUDIO JACK
-	AUDIO JACK

Shopping list

Resistors		
Qty	**Value**	**Parts**
7	10K	R2, R5, R6, R17, R18, R21, R23
1	150K	R15
1	15K	R14
2	1K	R9, R12
4	1M	R8, R13, R19, R20
1	220K	R10
2	27K	R16, R25
2	390K	R7, R22
2	470K	R3, R4
1	4K7	RLED
1	4M7	R1
2	56K	R11, R24

Capacitors		
Qty	**Value**	**Parts**
1	100n	C16
4	10n	C2, C8, C11, C12
1	150p	C1
1	1n	C10
1	1u	**C5***
1	2n2	C6
1	47n	C13

Electrolytic Capacitors		
Qty	**Value**	**Parts**
1	100u	C15
2	10u	C14, C17
4	1u	C3, C4, C7, C9

Potentiometers		
Qty	**Value**	**Parts**
1	250K C	ATTACK
1	500K C	SUSTAIN
1	50K B	VOLUME
1	100K C	CLIP

IC		
Qty	**Value**	**Parts**
1	LM13700N	IC2

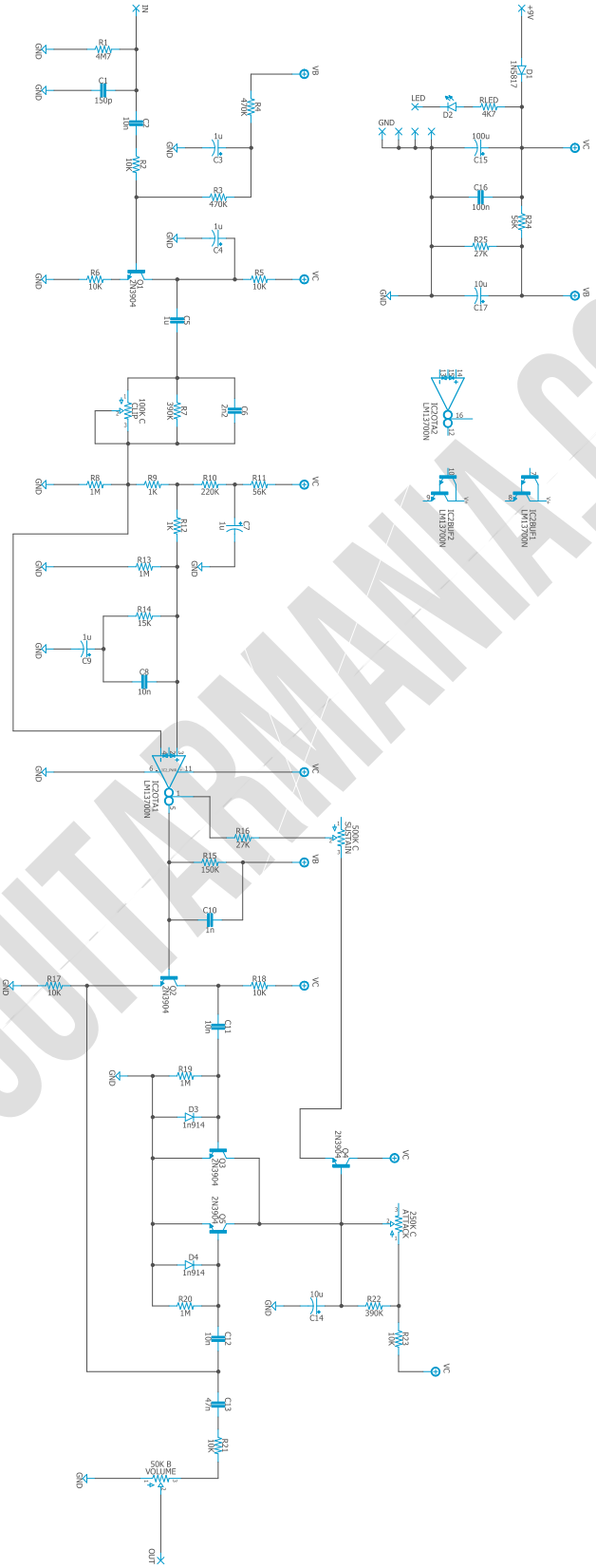
Transistors		
Qty	**Value**	**Parts**
5	2N3904	Q1, Q2, Q3, Q4, Q5

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

Diodes		
Qty	**Value**	**Parts**
1	1N5817	D1
2	1n914	D3, D4
1	3mm red LED	D2

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

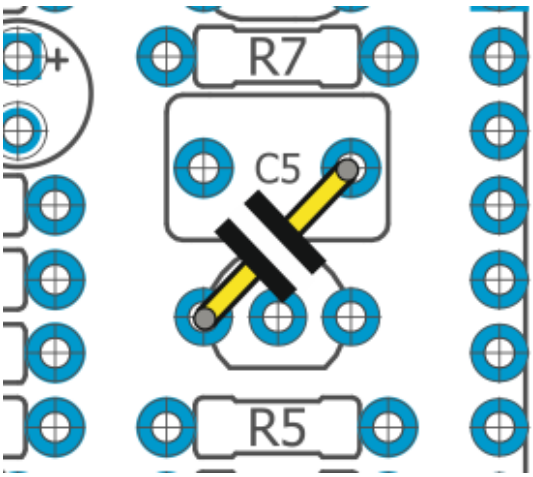
If this is one of your first projects, I recommend you to take a look at our Pedal Building Guide.

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

C5*

In the first version of the board, there is a wiring error involving **C5***; this issue has been fixed from version 1v1 onwards. If you have the first version, you will need to pull out the leg of C5 that goes to collector and wire it to emitter (that is on-board), as shown below. Place Q1 transistor as usual.



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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