

Lemon Bass

Based on:

BAJA Orange AD200B MkII bass amplifier

Effect type:

Bass Pre-amp

Build difficult:

Advanced

Amount of parts:

High, total 68 components

Technology:

Dual OpAmp

Power consumption:

9V

Enclosure type:

125b

Get your board at:

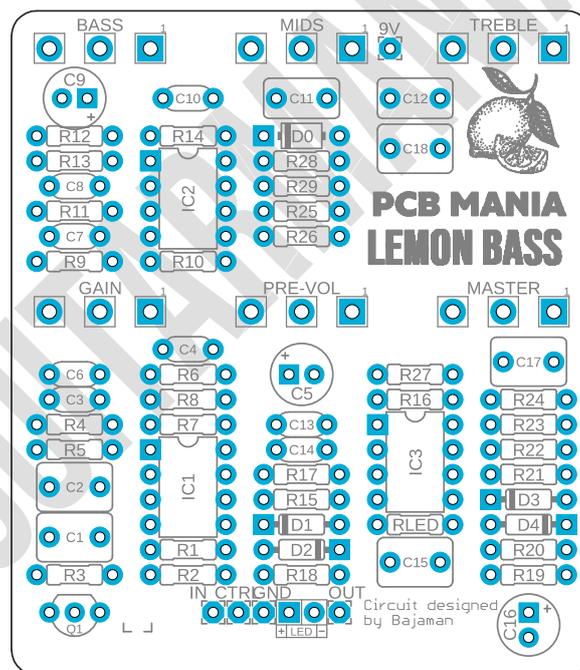
[Lemon Bass Pre-amp](#)

Get your kit at:

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

Project overview:

Bass pre-amp based on Orange AD200B MkII, replacing the tubes of the original unit for more convenient dual opamps that makes it more friendly to your pedal board while keeping a great tone with deep, dynamic low-end and a creamy yet focused mid-range.



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Introduction

The Lemon Bass is an original circuit developed by Bajaman for FreeStompboxes, inspired on the now iconic Orange AD200B MkII bass amplifier, emulating its gain structure by replacing the tubes from the original head for more convenient OpAmps, making it pedal friendly while keeping its wide spectrum of vintage and modern tones.

This modern classic is able to cover every tonal spectrum you need from Vintage Soul to Classic Rock, high-fidelity Funk to grinding Metal.

In this model you can place Q1* as an SMD transistor or the classic through-hole version. Choose just one of both. Remember the SMD J201 are more consistent quality wise than its through-hole counter part which is plagued by fake Chinese counterfeits.

Controls

- Volume
- Gain
- Pre-amp
- Bass
- Mids
- Treble

Bill of materials

Resistors	
Part	Value
R1	1M5
R2	1M
R3	100K
R4	1M
R5	3K3
R6	4K7
R7	820R
R8	100K
R9	22K
R10	47K
R11	4K7
R12	820R
R13	100K
R14	8K2
R15	1M
R16	47K
R17	2K2
R18	4K7
R19	15K
R20	2K2
R21	2K2
R22	15K
R23	1M
R24	1M
R25	4K7
R26	4K7
R27	1K
R28	10K
R29	10K
RLED	4K7

Capacitors	
Part	Value
C1	1u
C2	1u
C3	33p

C4	560p
C6	220n
C7	56p
C8	1n2
C10	2n2
C11	470n
C12	220n
C13	47p
C14	22n
C15	1u
C17	1u
C18	1u

Electrolytics Capacitors	
Part	Value
C5	100U
C9	220u
C16	220u

Potentiometers	
Part	Value
BASS	50K B
GAIN	50K B
MASTER	100K B
MIDS	1K B
PRE-VOL	1M B
TREBLE	25K B

IC	
Part	Value
IC1	TL072
IC2	TL072
IC3	TL062

Transistors	
Part	Value
Q1*	J201

Diodes	
Part	Value
D0	1N5817
D1	1n4148
D2	1n4148
D3	1n4148
D4	1n4148
LED	3mm Red LED

Shopping list

Resistors		
Qty	Value	Parts
3	100K	R3, R8, R13
2	10K	R28, R29
2	15K	R19, R22
1	1K	R27
5	1M	R2, R4, R15, R23, R24
1	1M5	R1
1	22K	R9
3	2K2	R17, R20, R21
1	3K3	R5
2	47K	R10, R16
6	4K7	R6, R11, R18, R25, R26, RLED
2	820R	R7, R12
1	8K2	R14

Capacitors		
Qty	Value	Parts
1	1n2	C8
5	1u	C1, C2, C15, C17, C18
1	220n	C6
1	220n	C12
1	22n	C14
1	2n2	C10
1	33p	C3
1	470n	C11
1	47p	C13
1	560p	C4
1	56p	C7

Electrolytic Capacitors		
Qty	Value	Parts
1	100U	C5
2	220u	C9, C16

Potentiometers		
Qty	Value	Parts
1	B100K	MASTER
1	B1K	MIDS
1	B1M	PRE-VOL
1	B25K	TREBLE
2	B50K	BASS, GAIN

IC		
Qty	Value	Parts
1	TL062	IC3
2	TL072	IC1, IC2

Transistors		
Qty	Value	Parts
1	J201	Q1*

Diodes		
Qty	Value	Parts
1	1N5817	D0
4	1n4148	D1, D2, D3, D4
1	3mm Red LED	LED

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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