

Cosmonaut Colossus

Based on:

Spaceman Titan II

Effect type:

Harmonically versatile fuzz

Build difficult:

Intermediate

Amount of parts:

Low, total 26 components

Technology:

Silicon NPN transistors

Power consumption:

9V

Enclosure type:

125b

Get your board at:

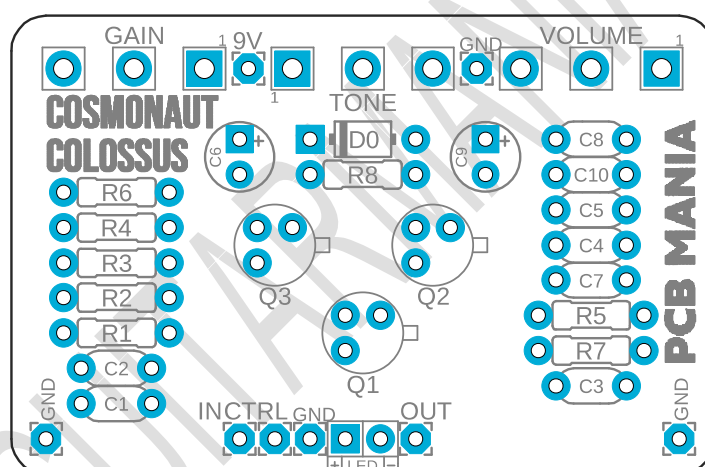
[Cosmonaut Colossus](#)

Get your kit at:

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

Project overview:

This fuzz delivers an Airy, open, and harmonically complex tone with a wide range of gain control.



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Introduction

This pedal covers everything from soft overdriven tones to nasty fuzz sounds on its high gain settings, always delivering clarity and harmonical richness. This device can get even more versatile by rolling down the volume knob on your guitar!

Its simple yet straightforward Big-muff tone stack will fit all your needs to shape your sound and launch your creativity to the stratosphere.

To build this pedal properly is a must to use low gain NPN silicon transistors, such as the stock 2n3903 or 2n222a like the one I used to verify this build. The key is to choose transistors with a gain lower than 200hfe. Higher gain transistors might occasion unwanted noises and oscillations.

Controls

- GAIN
- TONE
- VOLUME

Bill of materials

Resistors	
Part	Value
R1	1m
R2	1m
R3	1k
R4	10k
R5	1m
R6	10k
R7	4k7
R8	4k7

Transistors	
Part	Value
Q1	2N2369
Q2	2N2369
Q3	2N2369

Diodes	
Part	Value
D0	1n5817
LED	3mm Red LED

Capacitors	
Part	Value
C1	100p
C2	33n
C3	100n
C4	100n
C5	2n7
C7	27n
C8	1n
C10	100n

Electrolytics Capacitors	
Part	Value
C6	47u
C9	100u

Potentiometers	
Part	Value
GAIN	2k B
TONE	25k B
VOLUME	100k A

Shopping list

Resistors		
Qty	Value	Parts
2	10k	R4, R6
1	1k	R3
3	1m	R1, R2, R5
2	4k7	R7, R8

Capacitors		
Qty	Value	Parts
3	100n	C3, C4, C10
1	100p	C1
1	1n	C8
1	27n	C7
1	2n7	C5
1	33n	C2

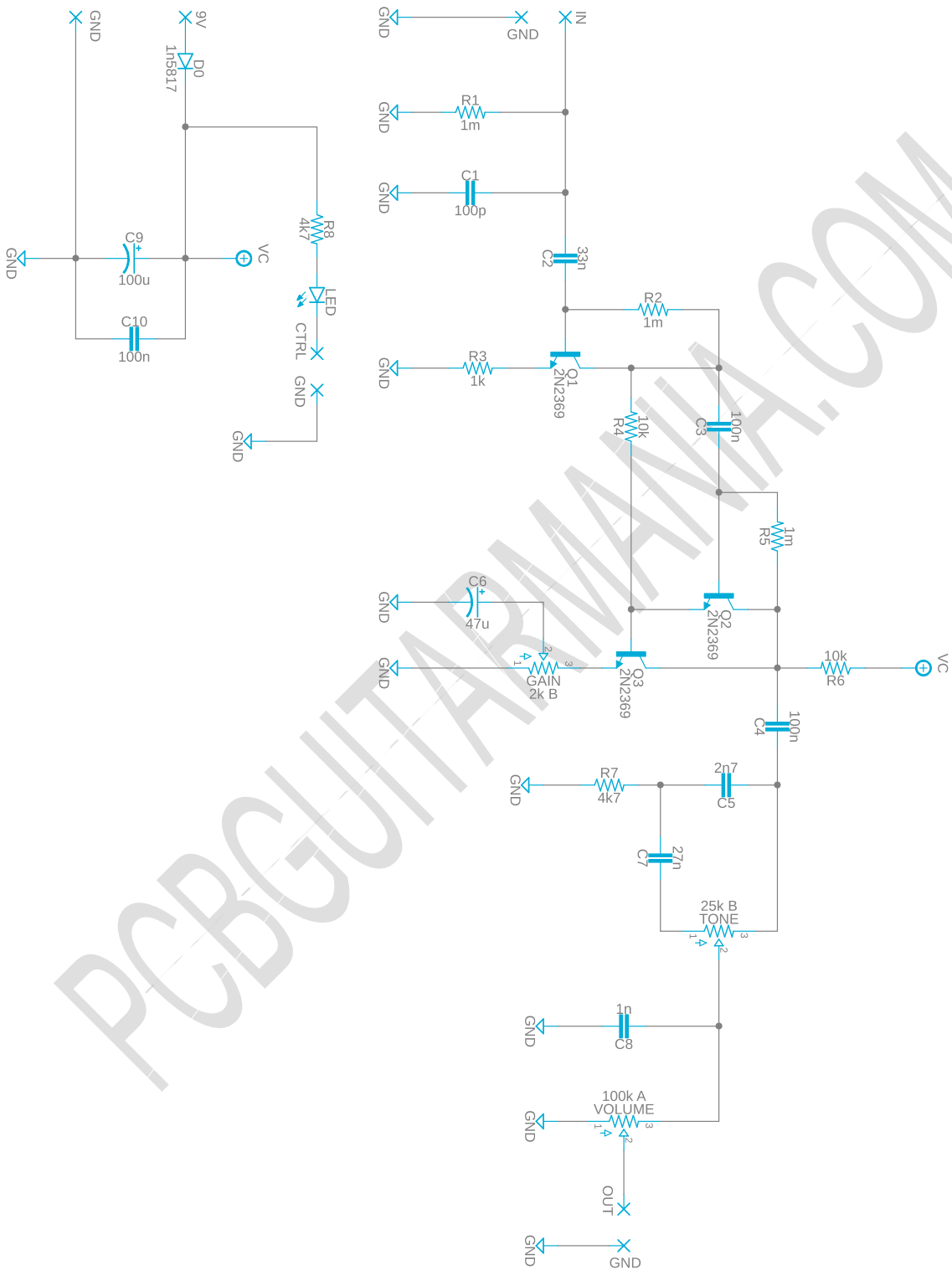
Electrolytics Capacitors		
Qty	Value	Parts
1	100u	C9
1	47u	C6

Potentiometers		
Qty	Value	Parts
1	100k A	VOLUME
1	25k B	TONE
1	2k B	GAIN

Transistors		
Qty	Value	Parts
3	2N2369	Q1, Q2, Q3

Diodes		
Qty	Value	Parts
1	1n5817	D0
1	3mm Red LED	LED

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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