

Black Mirror Bass Tubes

Based on:

Darkglass Vintage Microtubes

Effect type:

Bass Overdrive

Build difficult:

Advanced

Amount of parts:

High, total 72 components

Technology:

OPAMP + CMOS Clipping

Power consumption:

9V

Enclosure type:

125b

Get your board at:

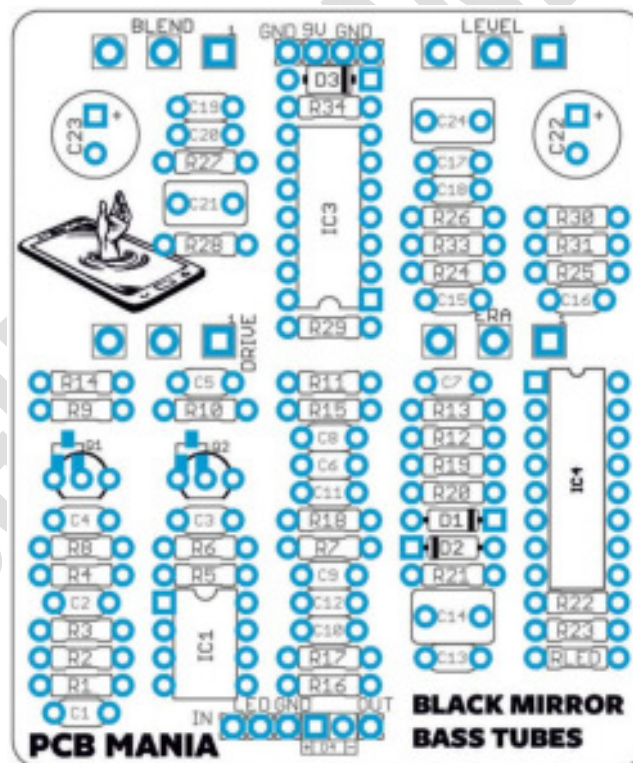
[Black Mirror Bass Tubes](#)

Get your kit at:

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

Project overview:

Nothing beats the sound of a bass guitar roaring through a tube amp... well, almost nothing, as a pedal designed to emulate this experience might be just what your signal chain is missing.



Index

1. Project overview
2. Index, Introduction & Controls
3. Bills of Materials, BOM
4. Shopping Lists
5. Schematic
6. Components, Build Notes, Wiring Diagram
7. Drill Template, Licensing and Usage

Introduction

The Black Mirror Bass Tubes is a bass tube preamp captured in a very compact design. This Darkglass Vintage Microtubes-inspired pedal allows you to choose from classic bass tones, starting in the early 70s, passing through the 80s, and finishing on the 90s rock sounds.

This little device comes with 4 controls: BLEND, LEVEL, DRIVE and ERA.

The BLEND knob lets you mix your clean tone at the unity gain with the overdriven tone.

The LEVEL potentiometer allows for further control of only the volume of the overdriven signal to finetune your preferred sound further.

DRIVE is your standard knob that dictates how much saturation your tone should have. It goes from barely present to a tube pushed to its limits.

We have saved the best for the dessert - the ERA control. With this pot you can decide what kind of flavor your overdrive will have. Set it to minimum and you'll be taken back to the 70s, with the characteristic warm mid range tones, while turning it clockwise will time travel you through more metallic sounding 80s, up to 90s rock sounds at the end of the dial.

As much as we all love the classic sound of a tube amp, it's not always the most reliable equipment to carry around dodgy clubs that you'll be playing in. Save some space on the stage with Black Mirror Bass Tubes - trust us, your back will thank you too!

Controls

- BLEND
- DRIVE
- ERA
- LEVEL

Bill of materials

Resistors	
Part	Value
R1	1M
R2	1M
R3	10K
R4	100K
R5	1M
R6	1M
R7	1M
R8	3K3
R9	2M
R10	470K
R11	10K
R12	22K
R13	20K
R14	300K
R15	470K
R16	1M
R17	220K
R18	3K3
R19	10K
R20	20K
R21	330K
R22	10K
R23	1M
R24	100K
R25	10K
R26	22K
R27	100K
R28	1K
R29	100K

R30	10K
R31	10K
R33	10K
R34	22K
RLED	4K7

Capacitors	
Part	Value
C1	100n
C2	22n
C3	22n
C4	220n
C5	220p
C6	22n
C7	22n
C8	22n
C9	100n
C10	220p
C11	220n
C12	220n
C13	220p
C14	1u
C15	1n
C16	4n7
C17	1n
C18	1n
C19	2n2
C20	1n
C21	1u
C24	1u

Electrolytics Capacitors	
Part	Value
C22	100u
C23	100u

Potentiometers	
Part	Value
BLEND	B100K
DRIVE	C100K
ERA	B100K
LEVEL	A100K

IC	
Part	Value
IC1	TL072
IC3	TL074
IC4	CD4049UBE

Transistors	
Part	Value
Q1	J201
Q2	J201

Diodes	
Part	Value
D1	1N4148
D2	1N4148
D3	1N5817
D4	3mm red LED

Shopping list

Resistors		
Qty	Value	Parts
4	100K	R4, R24, R27, R29
8	10K	R3, R11, R19, R22, R25, R30, R31, R33
1	1K	R28
7	1M	R1, R2, R5, R6, R7, R16, R23
2	20K	R13, R20
1	220K	R17
3	22K	R12, R26, R34
1	2M	R9
1	300K	R14
1	330K	R21
2	3K3	R8, R18
2	470K	R10, R15
1	4K7	RLED

Capacitors		
Qty	Value	Parts
2	100n	C1, C9
4	1n	C15, C17, C18, C20
2	1u	C21, C24
1	1u	C14
3	220n	C4, C11, C12
3	220p	C5, C10, C13
5	22n	C2, C3, C6, C7, C8
1	2n2	C19
1	4n7	C16

Electrolytics Capacitors		
Qty	Value	Parts
2	100u	C22, C23

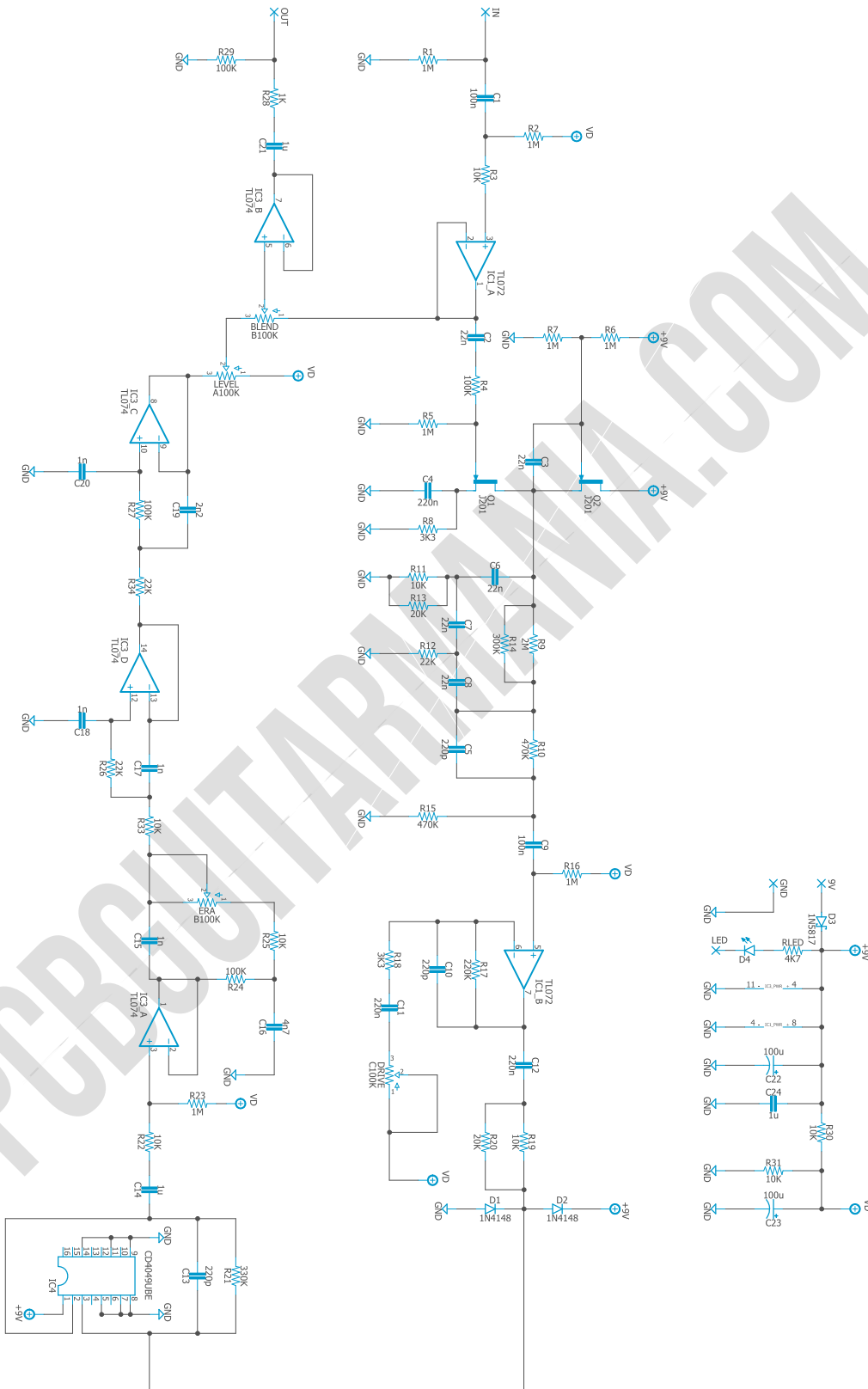
Potentiometers		
Qty	Value	Parts
1	A100K	LEVEL
2	B100K	BLEND, ERA
1	C100K	DRIVE

IC		
Qty	Value	Parts
1	CD4049UBE	IC4
1	TL072	IC1
1	TL074	IC3

Transistors		
Qty	Value	Parts
2	J201	Q1, Q2

Diodes		
Qty	Value	Parts
2	1N4148	D1, D2
1	1N5817	D3
1	3mm red LED	D4

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.

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