

Chief Feedstortion

Based on:

Boss DF-2 Super Distortion & Feedbacker

Effect type:

Versatile Distortion

Build difficult:

High

Number of parts:

High, total 121 components

Technology:

Dual D-type Flip-Flop & Micropower phase lock loop

Power consumption:

9V

Enclosure type:

1590bb

Get your board at:

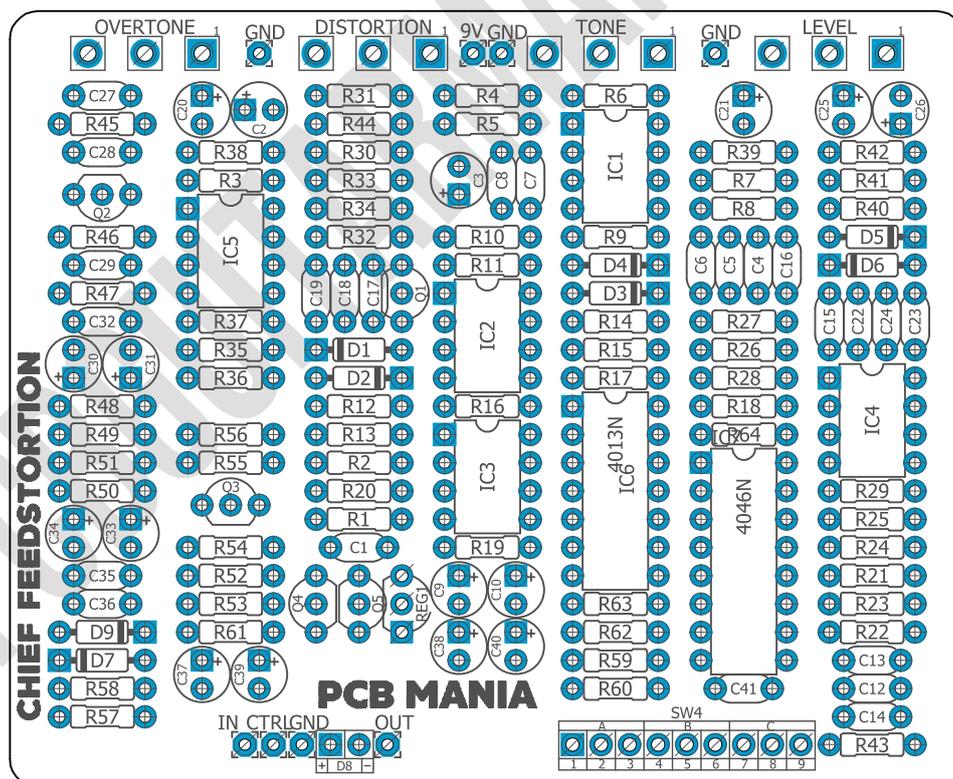
[Chief Feedstortion](#)

Get your kit at:

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

Project overview:

Inspired by the now-discontinued distortion pedal Boss DF-2. This circuit reminds us of the classic BOSS DS1 in its Distortion side, but it's the feedback and overtone section that really makes it stand out making this circuit capable of endless sustain. For this pedal, we included an additional momentary footswitch to enable the feedback mode.



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Introduction

Chief Feedstortion is a distortion pedal with the added option of holding down the footswitch for endless sustain – in overtone harmonic form of single notes, even at low volumes. The set of knobs will allow you to craft the type of distortion you want, adding lots of tonal versatility. The level, tone, and distortion knobs will let you craft the distortion, whereas the overtone knob allows you to adjust the feedback.

You are the chief in charge of this feedback station. Enjoy every minute while maintaining the situation under control - tame your feedback or let it go wild; after all, you are the boss. Just please, try not to get an eviction notice from your neighbors!

Controls

Potentiometers

- Distortion
- Level
- Overtone
- Tone

Switch

- Bypass
- SW4

Bill of materials

Resistors	
Part	Value
R1	10k
R2	1m
R3	100k
R4	22k
R5	2k2
R6	22k
R7	330k
R8	330k
R9	33k
R10	33k
R11	68k
R12	10k
R13	1k
R14	10k
R15	1k
R16	22k
R17	22k
R18	47k
R19	47k
R20	1m
R21	47k
R22	470k
R23	47k
R24	1m
R25	1m
R26	1m
R27	22k
R28	22k
R29	22k
R30	10k
R31	100k
R32	22r
R33	470k
R34	10k
R35	68k
R36	100k

R37	4k7
R38	1k
R39	2k2
R40	6k8
R41	2k2
R42	6k8
R43	470k
R44	150k
R45	10k
R46	10k
R47	10k
R48	470k
R49	470k
R50	10k
R51	10k
R52	10k
R53	10k
R54	10k
R55	10k
R56	10k
R57	470k
R58	1k
R59	4k7
R60	10k
R61	10k
R62	10k
R63	10k
R64	1k

Capacitors	
Part	Value
C1	22n
C4	10n
C5	220p
C6	2n2
C7	330p
C8	10n
C12	220n

C13	1n5
C14	56n
C15	100n
C16	10n
C17	47n
C18	47p
C19	100n
C22	10n
C23	22n
C24	100n
C27	22n
C28	1n
C29	82n
C32	22n
C35	47n
C36	22n
C41	6n8

Electrolytics Capacitors	
Part	Value
C2	1u
C3	1u
C9	1u
C10	1u
C20	1u
C21	470n
C25	1u
C26	10u
C30	1u
C31	1u
C33	1u
C34	1u
C37	10u
C38	100u
C39	47u
C40	10u

Potentiometers	
Part	Value
DISTORTION	250K A
LEVEL	100K A
OVERTONE	10K G
TONE	20K B

Trim pots	
Part	Value
IC1	TL072
IC2	TL072
IC3	TL072
IC4	TL072
IC5	TL072
IC6	4013N
IC7	4046N

Transistors	
Part	Value
Q1	MPSA18*
Q2	MPSA18*
Q3	MPSA18*
Q4	MPSA18*
Q5	MPSA18*

Voltage regulator	
Part	Value
Reg1	L78L05

Switches	
Part	Value
SW4	3PDT Momentary**
BYPASS	3PDT Latching
-	3PDT Stomp foot

Diodes	
Part	Value
D1	1N4148
D2	1N4148
D3	1N4148
D4	1N4148
D5	1N4148
D6	1N4148
D7	1N4148
D8	3mm Red LED
D9	1N5817

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

Shopping list

Resistors		
Qty	Value	Parts
3	100k	R3, R31, R36
19	10k	R1, R12, R14, R30, R34, R45, R46, R47, R50, R51, R52, R53, R54, R55, R56, R60, R61, R62, R63
1	150k	R44
5	1k	R13, R15, R38, R58, R64
5	1m	R2, R20, R24, R25, R26
7	22k	R4, R6, R16, R17, R27, R28, R29
1	22r	R32
3	2k2	R5, R39, R41
2	330k	R7, R8
2	33k	R9, R10
6	470k	R22, R33, R43, R48, R49, R57
4	47k	R18, R19, R21, R23
2	4k7	R37, R59
2	68k	R11, R35
2	6k8	R40, R42

Capacitors		
Qty	Value	Parts
3	100n	C15, C19, C24
4	10n	C4, C8, C16, C22
1	1n	C28
1	1n5	C13
1	220n	C12
1	220p	C5
4	22n	C1, C23, C27, C32, C36
1	2n2	C6
1	330p	C7
2	47n	C17, C35
1	47p	C18
1	56n	C14
1	6n8	C41

1	82n	C29
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Electrolytics Capacitors		
Qty	Value	Parts
1	100u	C38
3	10u	C26, C37, C40
10	1u	C2, C3, C9, C10, C20, C25, C30, C31, C33, C34
1	470n	C21
1	47u	C39

Potentiometers		
Qty	Value	Parts
1	100K A	LEVEL
1	10K G	OVERTONE
1	20K B	TONE
1	250K A	DISTORTION

IC		
Qty	Value	Parts
1	4013N	IC6
1	4046N	IC7
5	TL072	IC1, IC2, IC3, IC4, IC5

Transistors		
Qty	Value	Parts
5	MPSA18*	Q1, Q2, Q3, Q4, Q5

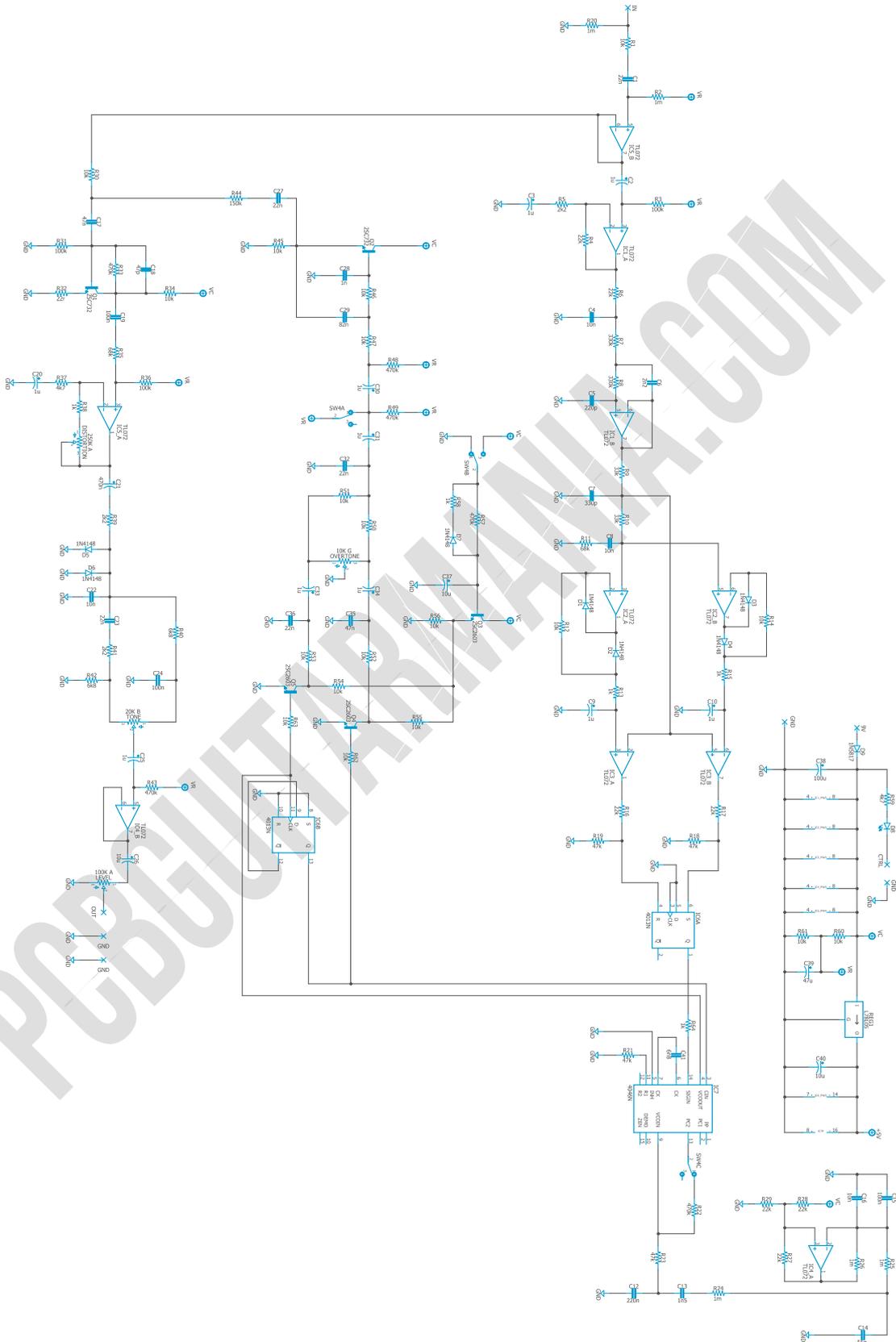
Voltage regulator		
Qty	Value	Parts
1	L78L05	Reg1

Switches		
Qty	Value	Parts
1	3PDT Momentary**	SW4
1	3PDT Latching	BYPASS
1	3PDT Stomp foot	-

Diodes		
Qty	Value	Parts
6	1N4148	D1, D2, D4, D5, D6, D7
1	1N4148	D3
1	1N5817	D9
1	3mm Red LED	D8

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

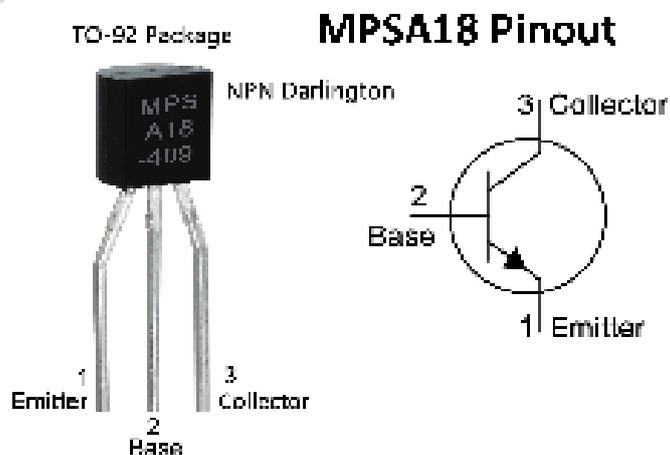
If this is one of your first projects, I recommend you to take a look at our [Pedal Building Guide](#).

For a successful and tidy build, it's recommended the following order:

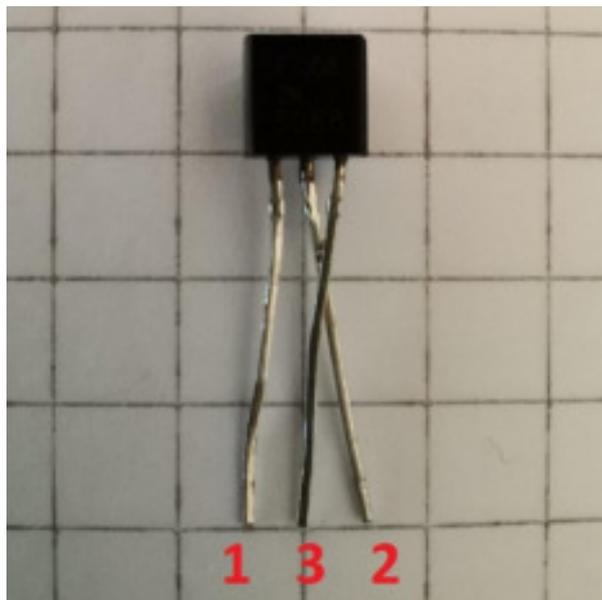
1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

MPSA18*

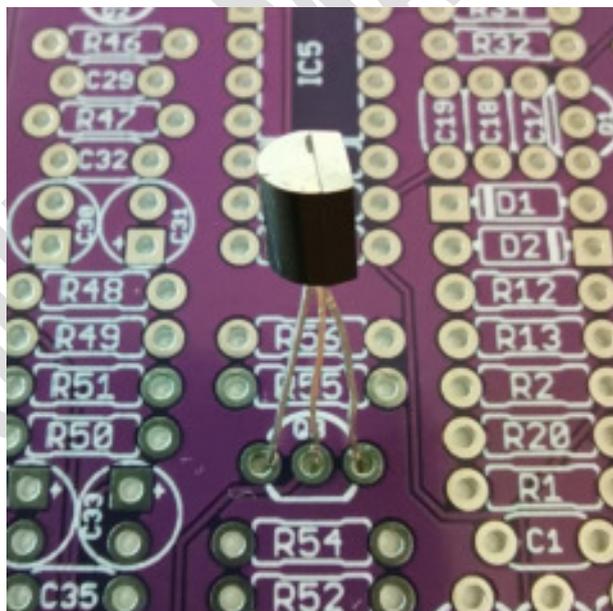
In the first version of this board, you will have to manually change the order of the pinouts of the transistors to match the PCB.



While the MPSA18 has an EBC pinout, all the transistors' layouts on the board are ECB. To make them match, you will need to inverse the pin order from Base (2) and Collector (3) to Collector (2) and Base (3).



Make sure to slightly rotate the transistors' head once you place them, so the legs don't touch each other. Use the picture below as reference:



From the 1.1 version onwards, this is no longer an issue; you can place the transistors as usual.

3PDT Momentary switch**

This switch must be oriented with Normally Closed contacts towards the bottom of the enclosure.

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 1590bb 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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