



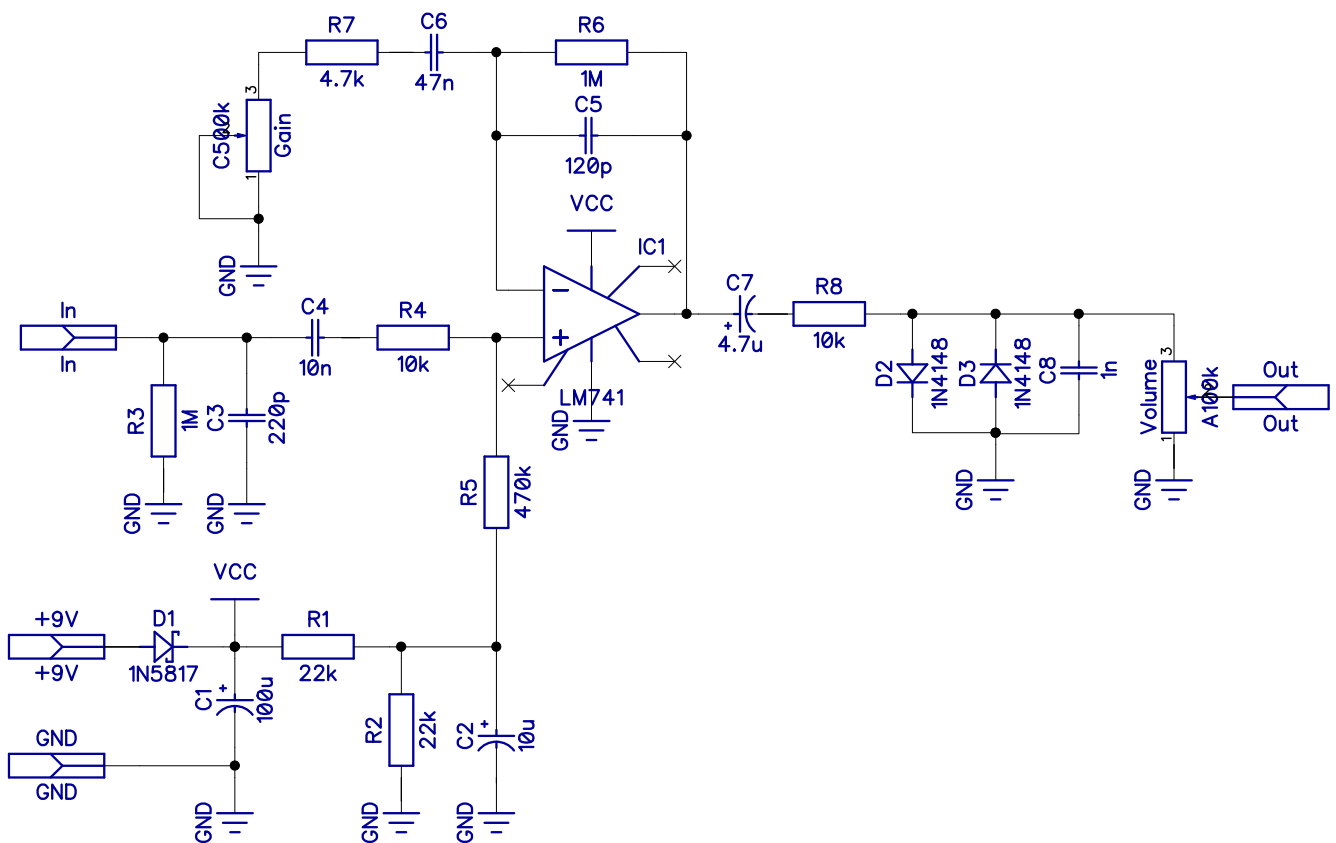
# 250

Based on DOD 250 Overdrive Preamp  
PCB artwork ©2016 drdFX  
Release date: 2016. 08. 01.

This build docu contains info for three versions of the well known DOD 250 Overdrive Preamp: the old grey version, the newer yellow/gold Reissue version and finally my take on this effect, the drdFX250+. The first two are one-to-one clones, while the drdFX250+ is an improved version with switchable buffer and clipping options.

## GREY DOD 250 OVERDRIVE PREAMP

### SCHEMATIC

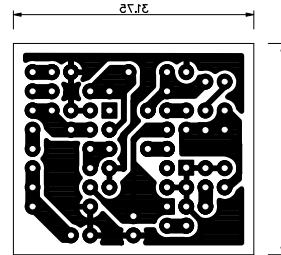
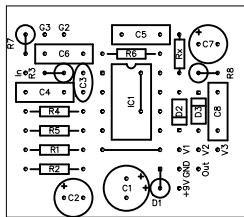


# LAYOUT

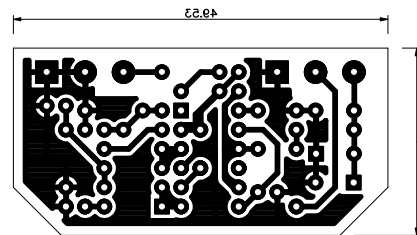
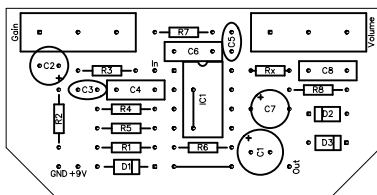
Print out the PCB design without any resizing options and make sure you switch off the “fit to page” option. The design is free for personal/home use and you also may build one or two for your friends, but the PCB layout is my artwork, therefore protected by copyright and is not permitted to be used for commercial purposes.

There are two versions: one that fits the conventional 1590B/125B enclosure and a small version that fits the 1590A enclosure as well.

1590A



1590B/125B



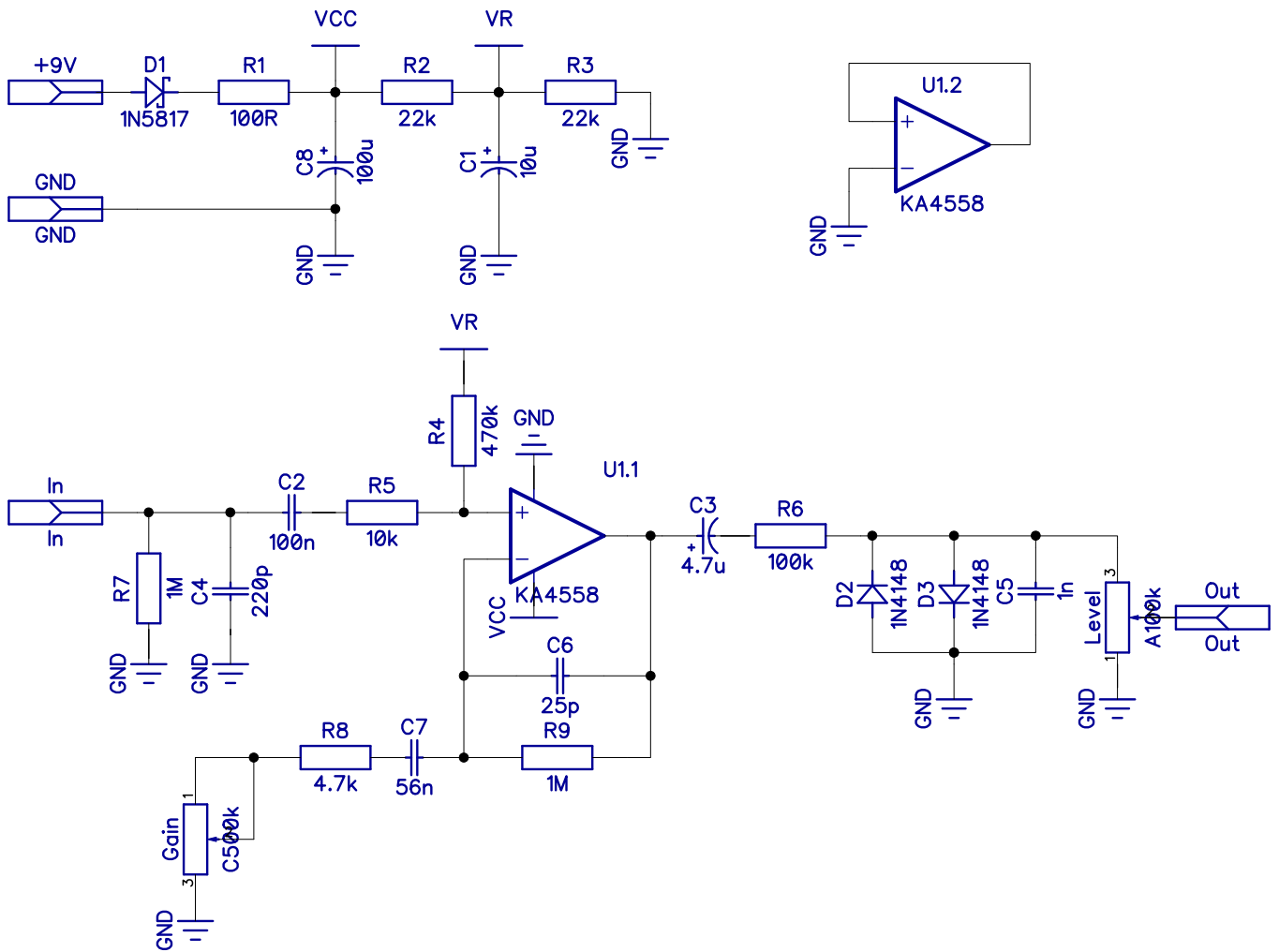
## BOM

Resistors		Capacitors		Semiconductors		Others	
R1	22k	C1	100u	D1	1N5817	Gain	C500k
R2	22k	C2	10u	D2	1N4148	Volume	A100k
R3	1M	C3	220p	D3	1N4148		
R4	10k	C4	10n	IC1	LM741		
R5	470k	C5	120p				
R6	1M	C6	47n				
R7	4.7k	C7	4.7u				
R8	10k	C8	1n				
Rx*	470k						

\*Rx is only needed if the Russian UD1208 IC is used. This needs this compensation resistor. With any other single opamps you can simply omit this part, I just happen to have a few, so I added it to the layout for myself.

# YELLOW/GOLD DOD 250 OVERDRIVE PREAMP REISSUE

## SCHEMATIC

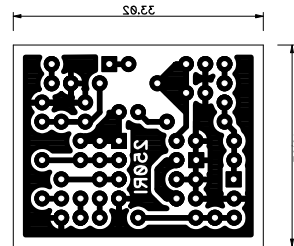
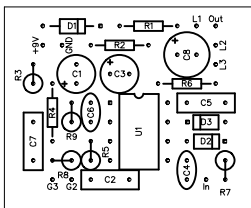


# LAYOUT

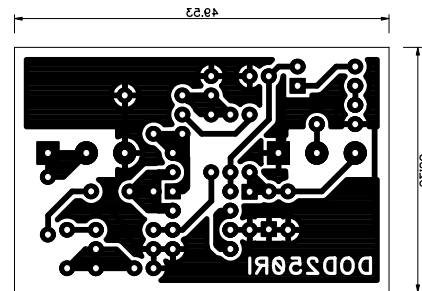
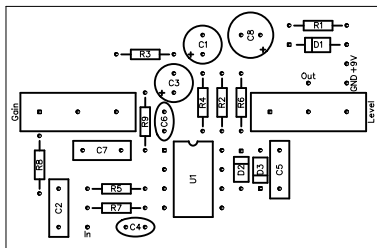
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There are two versions: one that fits the conventional 1590B/125B enclosure and a small version that fits the 1590A enclosure as well.

1590A



1590B/125B

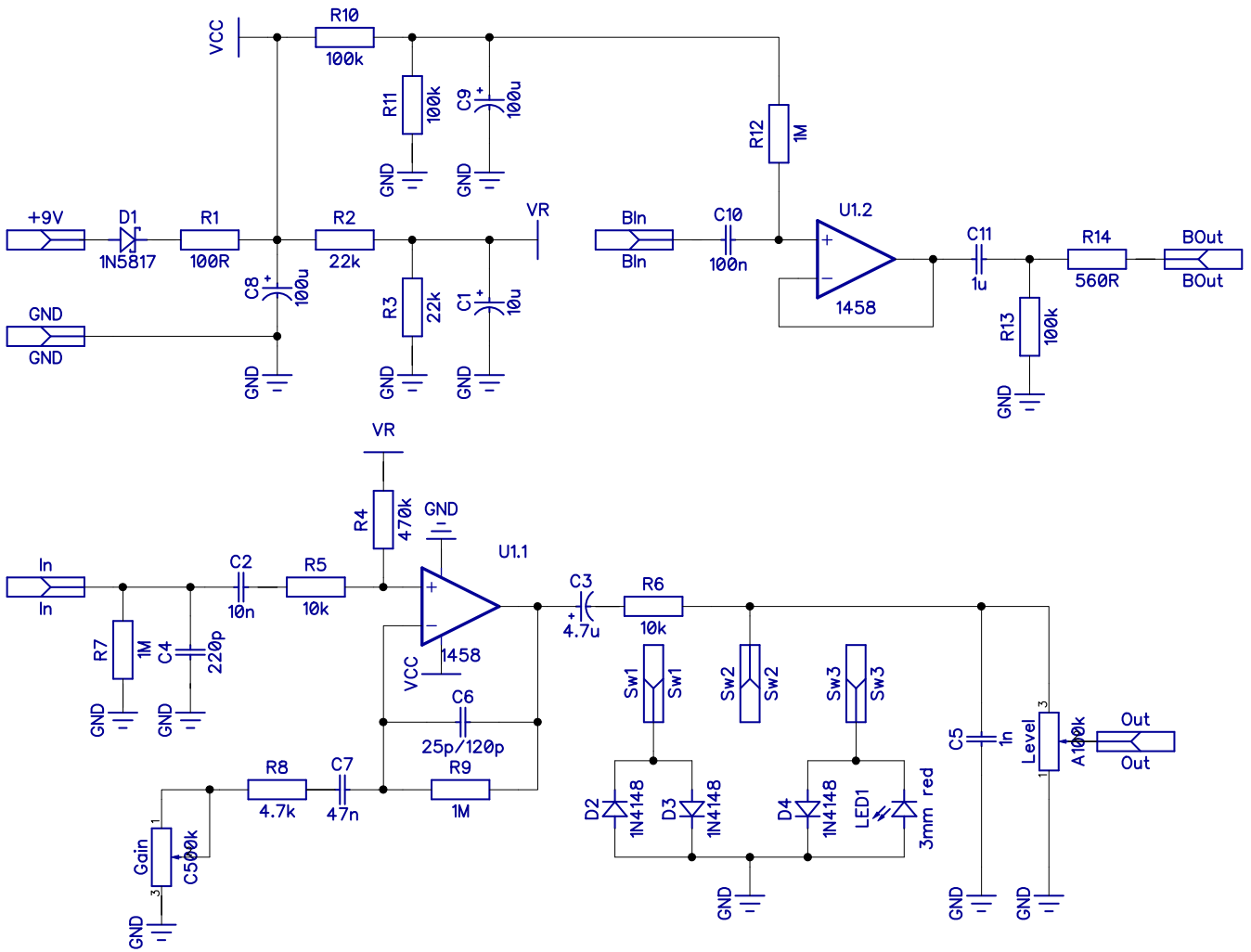


## BOM

Resistors		Capacitors		Semiconductors		Others	
R1	100R	C1	10u	D1	1N5817	Gain	C500k
R2	22k	C2	100n	D2	1N4148	Level	A100k
R3	22k	C3	4.7u	D3	1N4148		
R4	470k	C4	220p	U1	KA4558		
R5	10k	C5	1n				
R6	100k	C6	25p				
R7	1M	C7	56n				
R8	4.7k	C8	100u				
R9	1M						

# DRDFX250+

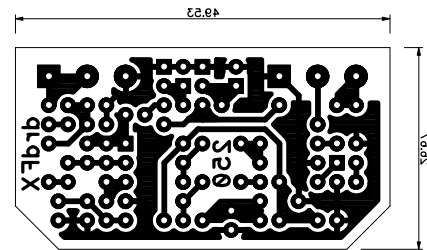
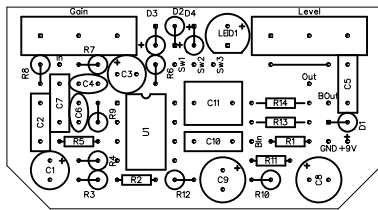
## SCHEMATIC



## LAYOUT

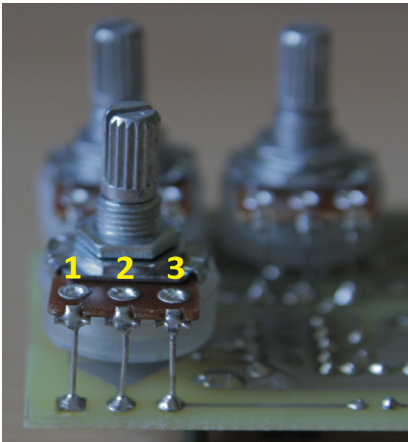
Print out the PCB design without any resizing options and make sure you switch off the “fit to page” option. The design is free for personal/home use and you also may build one or two for your friends, but the PCB layout is my artwork, therefore protected by copyright and is not permitted to be used for commercial purposes. The layout fits the standard 1590B/125B enclosures.

1590A



## BOM

BOM							
Resistors		Capacitors		Semiconductors		Others	
R1	100R	C1	10u	D1	1N5817	Gain	C500k
R2	22k	C2	10n	D2	1N4148	Level	A100k
R3	22k	C3	4.7u	D3	1N4148	BuffSw	DPDT
R4	470k	C4	220p	D4	1N4148	ClipSw	DPDT
R5	10k	C5	1n	LED	3mm red		
R6	10k	C6	25p/120p	U1	1458		
R7	1M	C7	47n				
R8	4.7k	C8	100u				
R9	1M	C9	100u				
R10	100k	C10	100n				
R11	100k	C11	1u				
R12	1M						
R13	100k						
R14	560R						



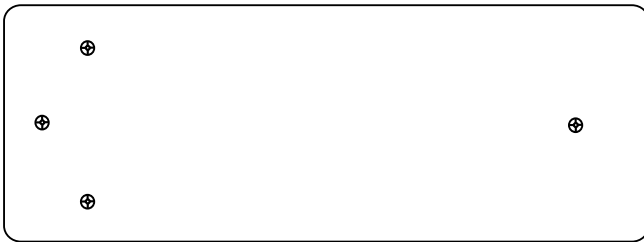
The pots are board mounted to the bottom of the board. The square pads mark the lug 1, for the numbering of the lugs see the picture. In the 1590A versions the pots are off-board mounted and connect to the board with wires. The lug numbering is the same. The switches in the drdFX250+ are also off-board mounted with wires.

All three versions can be used to modify the heck out of the original design, or even to roll your own distortion device. Some ideas to experiment with:

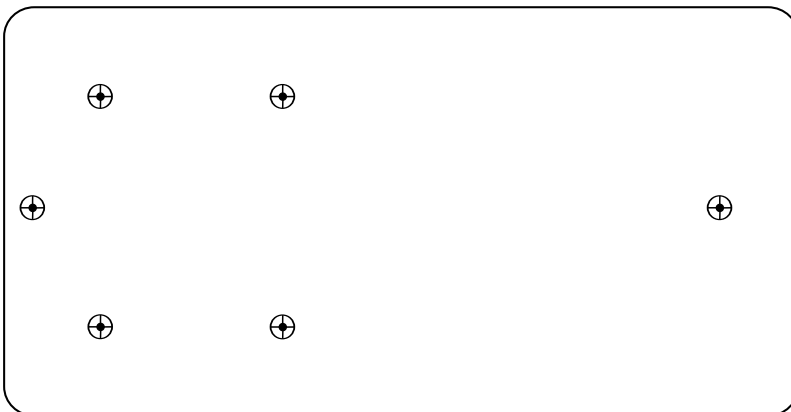
- Replace the 1M $\Omega$  fixed resistor in the feedback loop with a 1M $\Omega$  potmeter as a Gain pot and a 4.7k $\Omega$  fixed resistor in series. Replace the original Gain pot with a jumper. This way the frequency response will not change with the change of Gain.
- Play with the filter going from the feedback loop to ground. With changing those R and C components the frequency response can be changed.
- With increasing the input decoupling cap the bass content can be slightly increased.
- Like with every pedal that uses diode clipping I highly recommend to experiment with different clipping diode configurations.
- The cap in parallel with the clipping section to ground acts as a low pass filter. Increasing it you can filter out some more highs from the signal.
- You can use a passive or active tone stack instead or next to the aforementioned cap as well (see for example the very simple tone stack of the Rat)

## DRILLING TEMPLATES

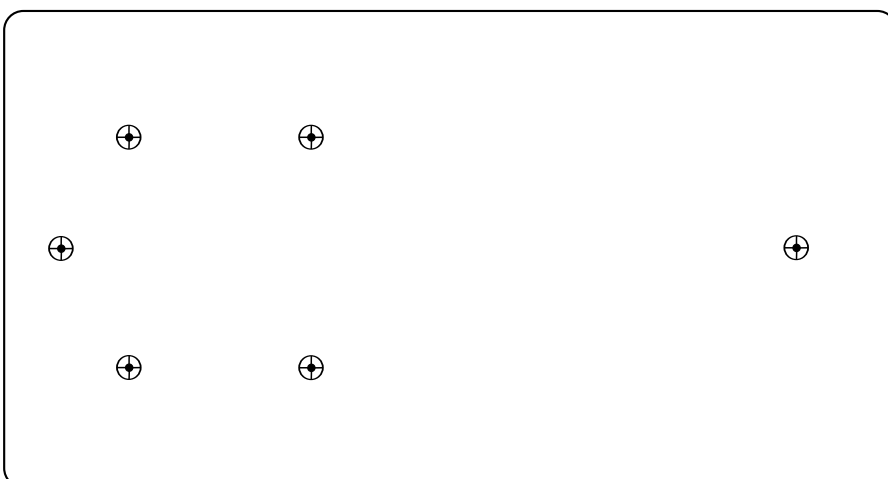
Here are some templates for the top of the box for the various box sizes. The original DOD 250 designs have both 1590B/125B and 1590A versions, but the drdFX250+ has only a 1590B/125B version. For the 1590B/125B templates I'm listing here 4-pot versions, as the drdFX250+ needs four holes (two pots and two switches), but for the 1590A version I'm only listing a 2-pot template.



1590A



1590B



125B