

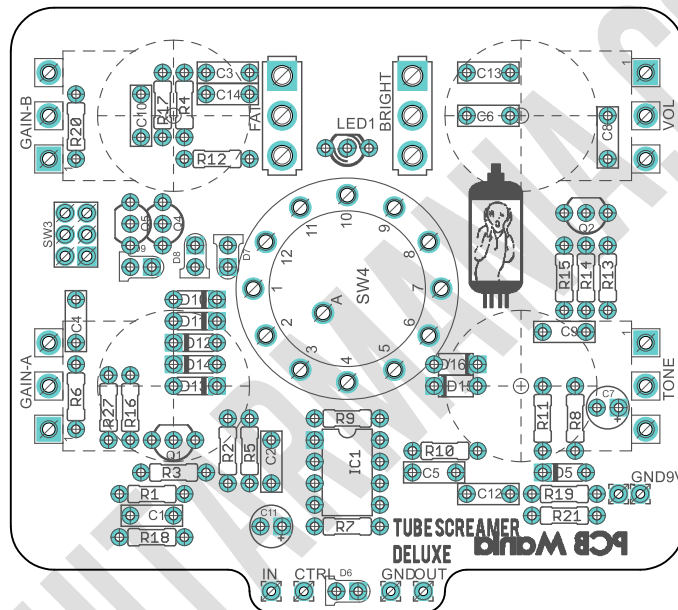
Green Screamer Deluxe

Based on Ibanez's Tube Screamer

Overdrive

By PCB Guitar Mania

[Project link](#)



The Green Screamer deluxe is a take on the father of all the overdrives, the Ibanez's Tube Screamer.

To develop this project we investigated a lot about the evolution, the clones, and the mods of this classic drive through the time, taking as much as we could on a single board that is capable of uncountable mods and voicings.

- Rotary switch to select in between 6 different clipping options.
- Dual gain channel with extra footswitch to select them.
- Bright and fat switch to dial the tone as your preference.
- Very easy to mod and make uncountable different versions out of this single board.
- Designed to fit in a 125BB enclosure with all the pots and switches on board.

BOM

Resistors		Capacitors	
R1	1k	C1	22n
R2	510k	C2	1u
R3	10k	C3	47n
R4	4k7	C4*	51p
R5	10k	C5	1u
R6	51k	C6	100n
R7	1k	C7*	220n
R8	220r	C8	100n
R9	10k	C9	1u
R10	1k	C10*	47uf Electrolytic
R11	1k	C11	47uf Electrolytic
R12	510k	C12	100n
R13	10k	C13	220n
R14	100r**	C14*	120n
R15	10k**		
R16	10k	Diodes	
R17	10k	D5	1n4001
R18	2m2	D6	LED3MM
R19	47r	D7	LED3MM Green
R20	10k	D8	LED3MM Green
R21	4k7	D9	LED3MM Water clear
R27	2k7	D10	1n916
		D11	1n916
		D12	1n916
Switches		D13	1n4148
BRIGHT	SPDT ON-ON	D14	1n4148
FAT	SPDT ON-ON	D15	bat41
SW3***	DPDT ON-ON	D16	bat41
SW4***	Rotatory 1P12T	LED1	Led dual common cathode
Potentiometers			
TONE	20kb	Transistors*****	
VOL	100ka	Q1	2N5088
GAIN-A	500ka****	Q2	2N5088
GAIN-B	1mb****	Q4	2n7000
		Q5	2n7000
IC*****			
IC1	JRC4558D		

C7; C10; C14 *

In the original tube screamer **C7-220n** is a tantalum capacitor. You could use also a regular Filmbox capacitor; some people say this type has a better response. Also you could decrease the value for a 100n to open up a bit the response of the tone control.

C10-47uf is actually a electrolytic capacitor beside the silkscreen point it as a no polarized one. Check the graphic above to see the right polarity.

C14-120nf Is in charge of the fat switch response. Feel free experimenting with other values, taking in mind that **C3-47nf** is the stock version.

C4 Could be replaced with a 47pf capacitor that is much more common to find.

R14; R15**

The values of **R14** and **R15** represent the ones on the original TS808. If you want to have sound closer to the TS9 replace the stock resistors with the following values.

- **R14- 470r**
- **R15-100K**

Bellow you will find and extra wiring diagram to wire and extra switch to select in between the TS808 and TS9.

Switches***

Sw3 controls the channel selection. You could use a normal toggle DPDT ON-ON, but I believe that its more useful to wire it as DPDT Footswitch. The dual led will show you which channel is on independently of which switch you chose.

SW4: 1P12T or 1P 6T will work fine. You could set up the 1P12T on 6 positions with the supplied washer. I believe that 2P12T or a 2P6T could work also.

You could get one of these switches here:

[Small Bear](#)

[Das musikding](#)

This two suppliers are just shown as an example.

GAIN-POTS ****

The original TS808 has a 500KA (logarithmic) gain pot, I found on my opinion that is a bit easier to control a 500KB (lineal) in some occasions. Feel free to experiment.

For GAIN-B I used a 1MB, based on it's a popular mod in many tube screamers kinda drives based. It will increase the total maximum gain.

ICs*****

I set for this build the default JRC458D of the stock version. Just socket and try many different DUAL OP AMPS, on my experience I got the following results.

- TL072, a more bassy sound, coloured tone.
- OPA2134, more headroom, and crystalline sound. not so much clipping from the ic.

- LM833: Brighter and sharp tone
- RC4580, adds more presence and mids sound.

Transistors*****

Q1 & Q2 I set them as stock cause of its medium gain capabilities. You could try with 2n3904 for lower gain settings, or 2N5089 and MPSA18 for higher gain results. Although the transistors are on the buffer part of the circuit and doesn't have that much inherency on the tone.

Q3 & Q2 4 The 2N700 could be replaced by BS170, just as they have reverse pin out you got to place them reverse as the silk screen.

Shopping list

Qty	Value	Parts
Resistors		
1	2k7	R27
1	2m2	R18
2	510k	R2, R12
1	51k	R6
1	47r	R19
1	220r	R8
2	4k7	R21
1	100r	R14
4	1k	R1, R7, R10, R11
8	10k	R3, R5, R9, R13, R15, R16, R17, R20
Capacitors		
1	120n	C14
3	100n	C6, C8, C12
3	1u	C2, C5, C9
1	220n	C13, c7
1	22n	C1
1	47n	C3
1	51p	C4
2	47uf electro	C10, C11
Potentiometers		
1	1mb	GAIN-B
1	500ka	GAIN-A
1	20kb	TONE
1	100ka	VOL

Semiconductors

2	2N5088	Q1, Q2
2	2n7000	Q4, Q5
1	JRC4558D	IC1

Diodes

1	1n4001	D5
2	1n4148	D13, D14
3	1n916	D10, D11, D12
1	LED_DUAL	LED1
2	bat41	D15, D16
2	LED3MM Green	
1	LED3MM water clear	
1	LED3MM	

Switches

1	DPDT footswitch	SW3
2	Toggle SPDT on - on	BRIGHT, FAT
1	Rotatory 1P 12T	SW4

This shopping list is based on our stock version. If you want to do some of the modifications above, please add the components you need before making the order to your supplier.

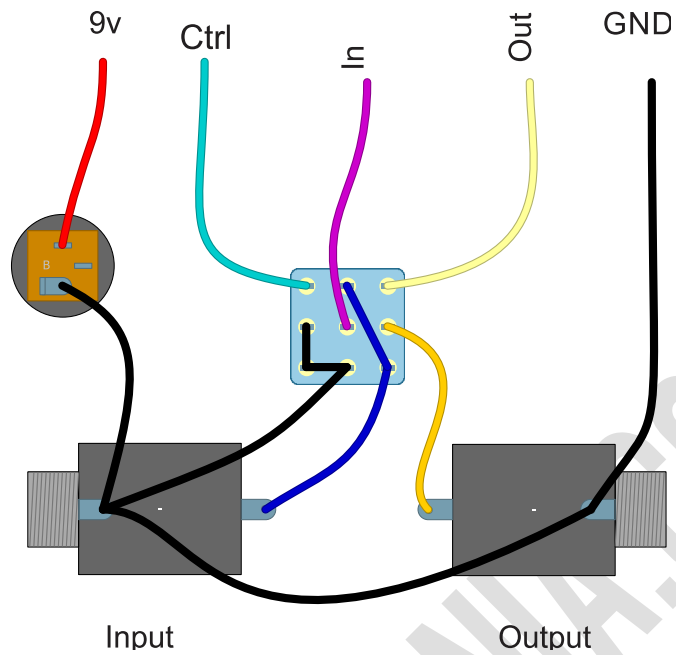
Also never forget to include the basic hardware such as 3PDT, audio jacks and dc connectors.

General Building notes

To populate the PCB it's recommended to follow this order.

1. Resistors & diodes
2. IC Sockets (set up the proper IC at last)
3. Capacitors, starting with the smaller ones and the ceramic ones.
4. Electrolytic capacitors (always check the polarity)
5. Transistors
6. Wires
7. Potentiometers
8. Off board wiring

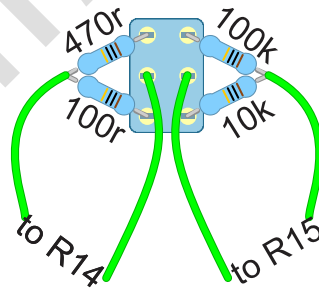
Off Board Wiring



Channel selector switch

To wire this switch just take a cable from each pad of SW3 and connect it in the same way on the terminals of your DPDT Footswitch.

Ts808/Ts9 voice switch mod



This is an additional mod you could add to the Green Screamer Deluxe, just take out two wires from the pads for R14 and R15 and wire it as its indicated on the graphic. This mod uses an extra toggle DPDT ON-ON.

Drilling the enclosure

This Project has been planned to fit into a 125BB enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print in a A4 page.

Schematic

