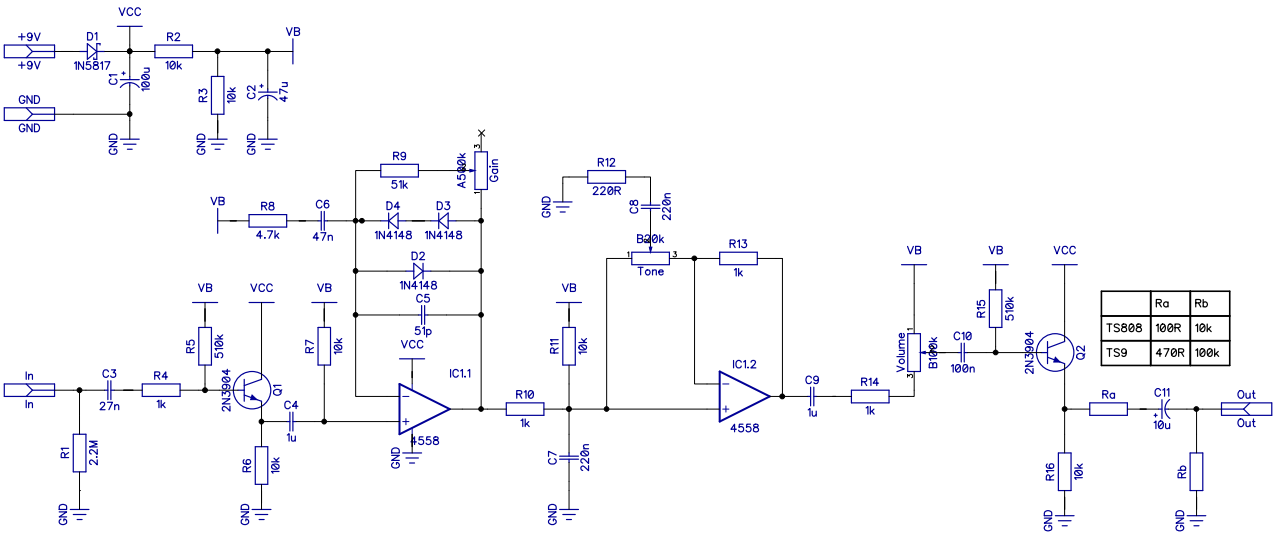
Soylent Green

Based on Ibanez Tube Screamer

Release date: 2019. 11. 11.

Yet another clone of the well-known overdrive.

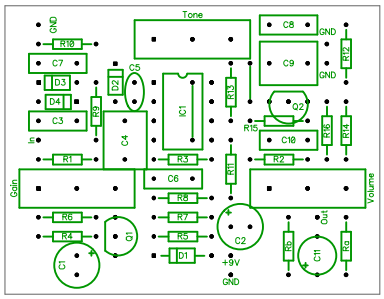
SCHEMATIC

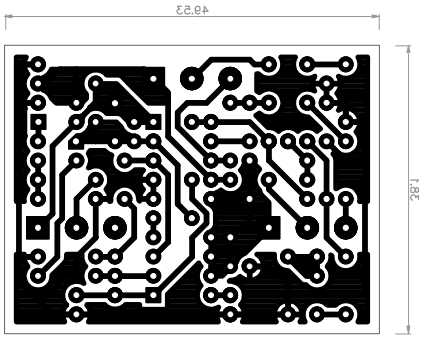


BOM							
Resistors		Capacitors		Semiconductors		Others	
R1	2.2M	C1	100u	D1	1N5817	Gain	A500k
R2	10k	C2	47u	D2	1N4148	Tone	B20k
R3	10k	C3	27n	D3	1N4148	Volume	B100k
R4	1k	C4	1u	D4	1N4148		
R5	510k	C5	51p	Q1	2N3904		
R6	10k	C6	47n	Q2	2N3904		
R7	10k	C7	220n	IC1	JRC4558		
R8	4.7k	C8	220n				
R9	51k	C9	1u				
R10	1k	C10	100n				
R11	10k	C11	10u				
R12	220R						
R13	1k						
R14	1k						
R15	510k						
R16	10k						
Ra	100R (TS808) 470R (TS9)						
Rb	10k (TS808) 100k (TS9)						

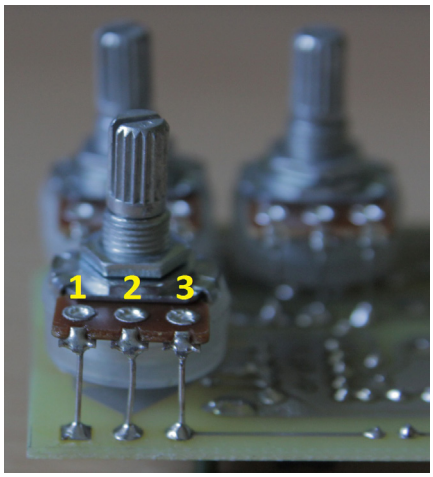
LAYOUT

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.





NOTES



All pots are board mounted. The square pad marks the lug 1, for the numbering of the lugs see the picture.

Some ideas for mods:

- The frequency response can be changed with changing R8 and C6. These lower the gain for the frequencies below about 720Hz. With tuning this filter lower the bass response can be extended.
- The frequency response can be extended with changing the R10 and C7 low-pass filter too. This filters out frequencies above about 720Hz (again...) after the amplifier stage.
- If you want more distortion you can increase the Drive pot to 1M and/or lower the R8 value. If you decide for the latter though, then you have to keep in mind that your filter will change. To keep it at the same frequency response as the original you need to increase C6 at the same time so that the R8*C6 product remains the same.
- I have followed the Madbean Green Bean schematic with the clipping diode section and used an asymmetric Si diode arrangement. If you want the original's symmetric layout simply replace D4 with a jumper. Or - as with any clipping diode circuits - you can freely experiment, however you have to keep in mind that the effect has a pretty low overall volume and a lower forward voltage diode arrangement (such as Ge or Schottky diodes) will decrease this further. You may end up with a circuit that has lower overall volume as the uneffected sound.
- With the correct values of Ra and Rb you can build both the TS808 and the TS9 variants. In the case of the TS808 version the overall volume of the effect is so low that it is unsuitable for boosting; with the Drive all the way down and the Volume all the way up its overall volume is still lower than the clean signal. In my pedal I have used a jumper for Ra and 100k for Rb.

DRILLING TEMPLATES

Here is a template for a standard 1590B box.