Ghost Effects Silicon Pep Box PCB Guide.

Thank you for buying a Ghost Effects Silicon Pep Box PCB, the circuit is 100% a clone of the very rare 1967 WEM Rush Pep Box, with the option of adding an output capacitor 'Tone' control for added versatility.

This Project should be undertaken by someone with some experience of soldering to a PCB and general effects pedal construction and troubleshooting, I cannot be held responsible for injury or damage through use of this PCB.

I'm happy to answer general questions, but cannot guarantee that I will be able to help out if you get everything wired up and the circuit doesn't work, but I will try my best.

If you have any questions and would like to get in touch my email is info@ghosteffects.co.uk



Potientometers

See below for the numbering scheme for all pots in this project.



Component List

All component numbers match up with the numbers on the PCB.

Resistors - 1/4 watt carbon or metal film are fine. If you want to use carbon composition be aware that this may make the circuit a little more noisy.

R1 1m R2 1k5 R3 100r R4 10k R5 1k (optional current limiting resistor for LED)

Capacitors - Electrolytic polarity is indicated on the PCB, be sure to follow this correctly.

C1 12uf electrolytic radial 2.5mm pitch (can use 10uf)

- C2 0.01uf 10mm pitch
- C3 12uf electrolytic radial 2.5mm pitch (can use 10uf)
- C4 3300pf 10mm pitch

C5 0.47uf 10mm pitch (NOT needed for stock version, optional for 'Tone' control, see below)

Bias 500k trimpot

Volume = 50k log Pep = 10k log 'Tone' = 100k log (optional)

Q1 + Q2 = BC107 npn (any common npn transistor will work)

In terms of gains I aim for the 200-300 hfe range for each one.

Here is a wiring diagram for the stock version (Just an example, there are other ways to do the switch etc, but this way definitely works if you are unsure).



Here is an example of what a board could look like built up.



Biasing

The board is designed to accommodate 2 different types of trimpots so you should have no problem finding a trimpot type to fit.

Here is a link to the ones I use, but other modern types will work just as well.

http://www.rapidonline.com/Electronic-Components/3-8in-Single-Turn-Finger-Adjustable-Cermet-Potentiometer-81452

In terms of the sound it is best to look for a good balance between sustain and background noise, start with the trim about half way up and then gradually turn it up until you start to hear much more background noise or static. Back off the trim from here until you get your desired noise and sustain level.

Do NOT turn the bias control all the way up as you may fry the 2nd transistor, BE AWARE!

Output

The output of the circuit comes from Volume pot lug 2, and would normally go to the circuit output lug on the pedal footswitch (see above wiring diagram).

Power

The circuit is negative ground and can be powered with a 9v battery or a 9v DC adaptor with a negative tip.

With a battery snap Red lead goes to power on the board, Black lead goes to ground (or the appropriate lug on a switched jack).

Mods

The PCB is designed so an extra capacitor can be fitted so that a basic output capacitor 'Tone' control can be created.

C5 is the extra capacitor (not needed for the stock version) which links to the 'BLEND' pad on the PCB.

You will also need an extra 100k log pot, connections on PCB as follows - BLEND to lug 3 of the 'Tone' pot, VOL3 to lug 1 of the 'Tone' pot, lug 2 of the 'Tone' pot connects to lug 3 of the Volume pot.

Here is a wiring diagram for building the circuit with the 'Tone' control.



See pic below for an example of a finished and wired up board using the optional 'Tone' Control.



lan Sherwen Ghost Effects May 2013