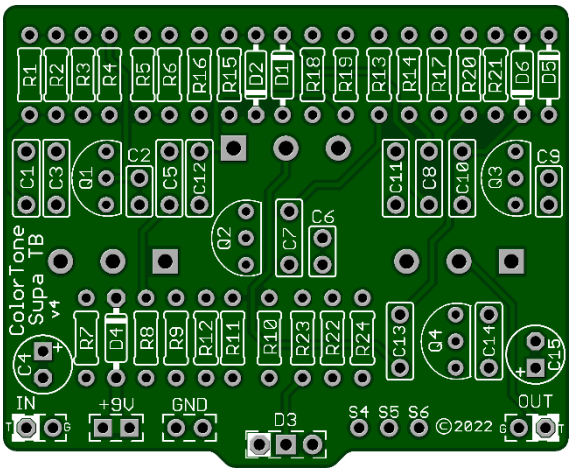
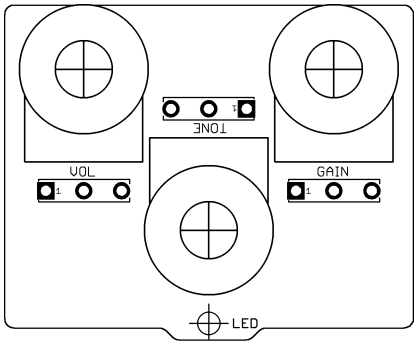
# ColorTone Supa Tonebender v4 2022

**Journey with us back to the fabulous ’60s! Revisit the early days of guitar effects. Who can forget the classic sounds of the fuzz effects used by great performers like Jimmy Page and Jeff Beck. GuitarPCB has recreated this famous circuit and added some superb and versatile features to bring this into the modern era.**

- Advanced tone section that provides both bass and treble emphasis.
- No rare expensive germanium transistors are required.




Board Dimensions (W x H) 2.12 x 1.73 inches




Drill Template

## PARTS LIST

| Part | Value | Part | Value | Part | Value | Part | Value |
|---|---|---|---|---|---|---|---|
| R1 | 1M | R13 | 8k2 | C1 | 100n | C13 | 100n |
| R2 | 33k | R14 | 100k | C2 | 560p | C14 | 100n |
| R3 | 100k | R15 | 470k | C3 | 100n | C15 | 10u |
| R4 | 470k | R16 | 15k | C4 | 47µ | | |
| R5 | 15k | R17 | 100R | C5 | 100n | D1-D2 | *1N34A |
| R6 | 100R | R18 | 33k | C6 | 560p | D3 | Bi-Color CA LED |
| R7 | 1k | R19 | 33k | C7 | 100n | D4 | 1N5817 |
| R8 | 8k2 | R20 | 470k | C8 | 100n | D5-D6 | *1N34A |
| R9 | 100k | R21 | 100k | C9 | 560p | Q1-Q4 | **BC546 |
| R10 | 10k | R22 | 22k | C10 | 100n | GAIN | B100k |
| R11 | 470k | R23 | 1k8 | C11 | 4n7 | TONE | B100k |
| R12 | 100R | R24 | 2k7 | C12 | 10n | VOL | A100k |

### STATUS LED

***D1** is a Status LED that can be either a Bi-Color Common Anode or a Standard On/Off LED. (See Tip Sheet)

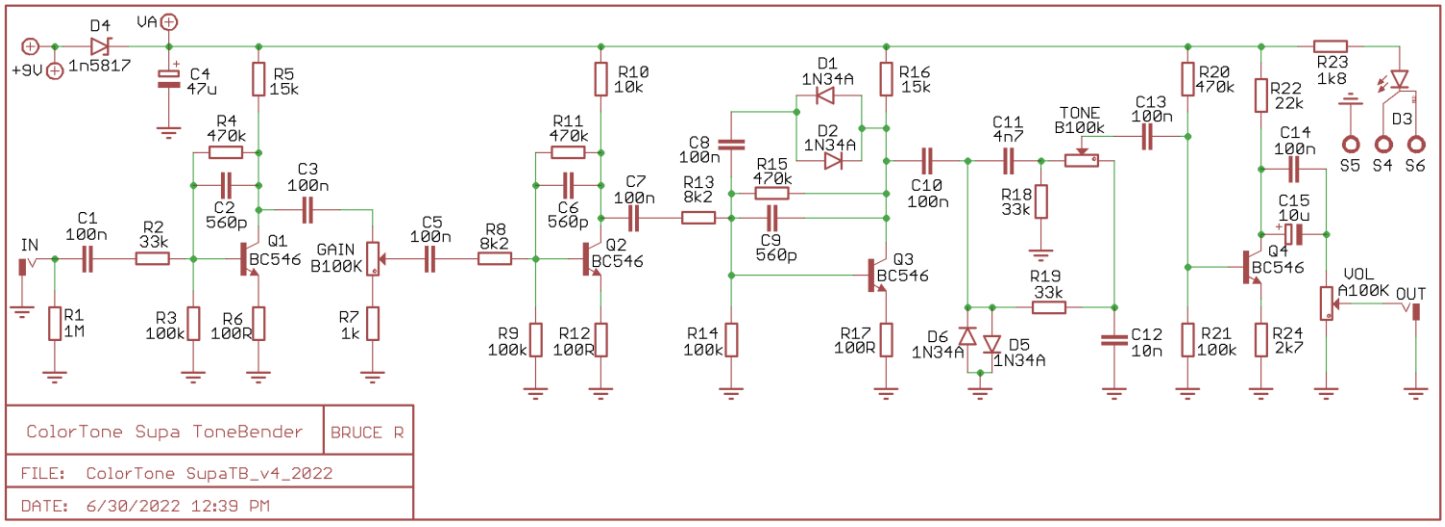
### New in this GuitarPCB 2022 version release:

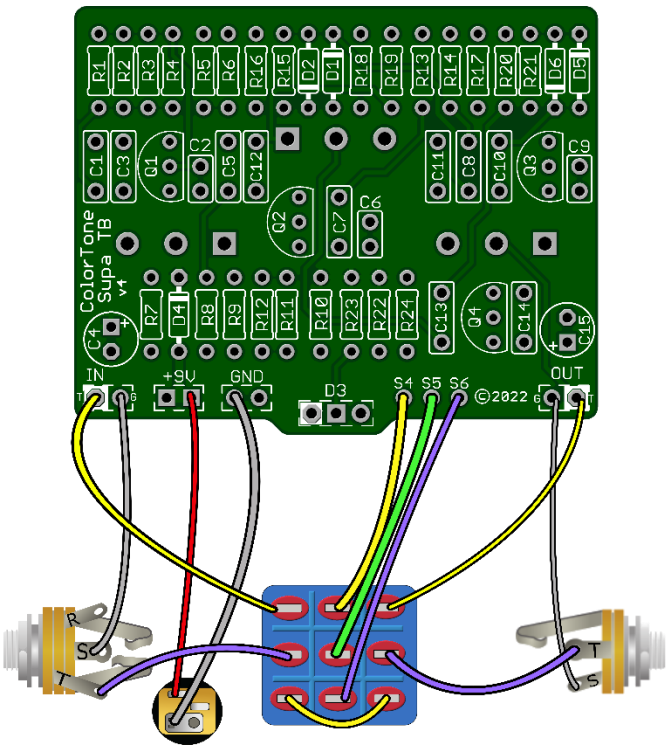
- Added (D4) 1N5817 circuit protection diode and onboard potentiometers.

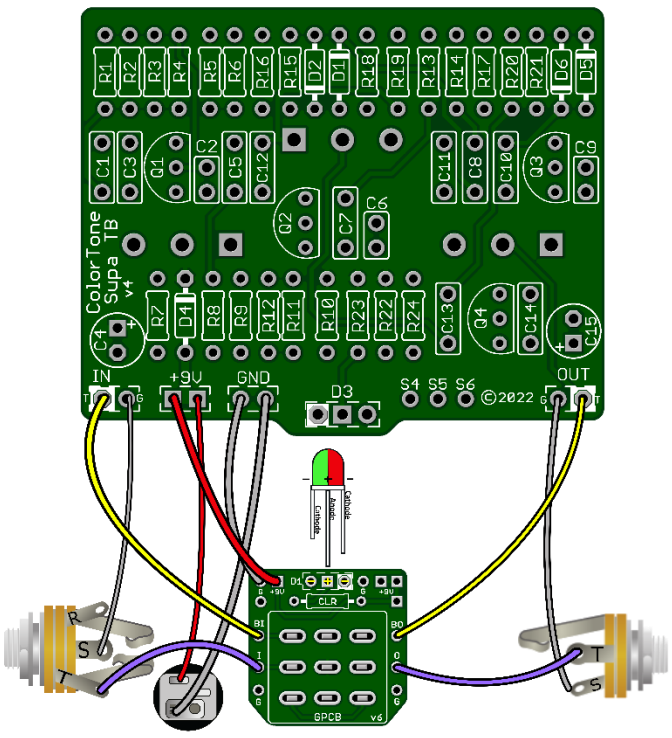
## Build Notes

- *1N34A is a Germanium Diode. Other Germanium diode types like are fine. Russian diodes have a reverse orientation.
- **Stock transistors are BC546. Excellent alternate choices are 2N5088 and 2N5089 but you must reverse the orientation of the transistor as shown on the Board Silkscreen. Use sockets so you can experiment or switch. Google transistor pinouts!
- Mods. D1, D2, D5 & D6 – are Germanium. Try 1N914 silicon or Bat41s for something different. Socket and see.
- Change all (8) 100n coupling capacitors to 220n for Bass, or to be both Bass and Baritone ready.

The tone stack in this circuit is quite different from simpler circuits commonly found in effects pedals. Instead of a control that is turned fully clockwise to include all frequencies and turned down (CCW) to reduce high frequencies, this tone control is a BLEND control. It balances the frequency response at 50% rotation, increasing high frequencies when turned clockwise or increasing low frequencies when turned counterclockwise from the middle position. We suggest you start with the control at 50% rotation and then adjust to your taste.



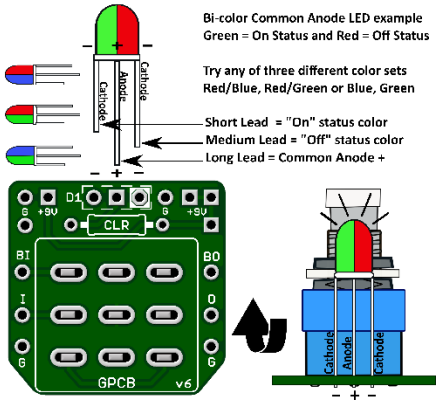



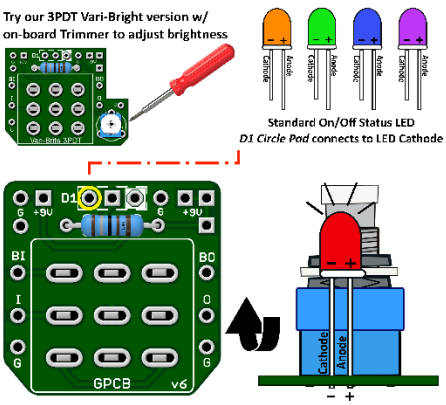



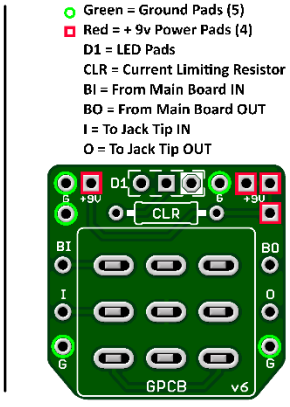


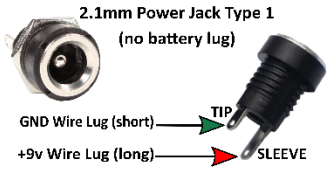
**Be sure your In/Out Jack wiring is correct. A Stereo Jack (for battery use only) has a RING lug which is used to connect to the battery ground. If you do not intend to use a battery there is no need for a Stereo Jack. If using Stereo then only use the Tip and Sleeve lugs. S4, S5 & S6 is only needed when the LED is wired to the Main Board.**

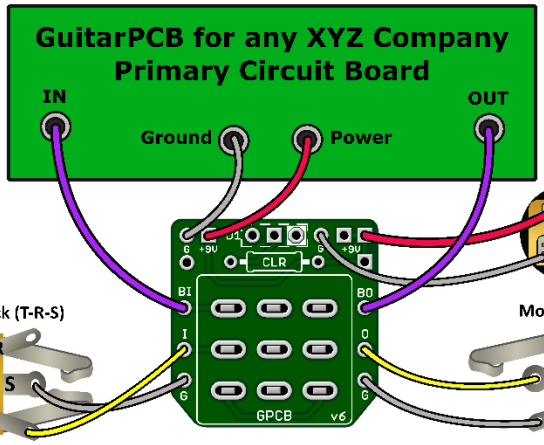
# GuitarPCB Tip Sheet

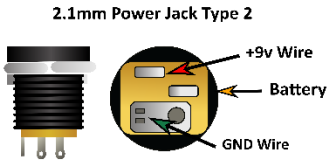


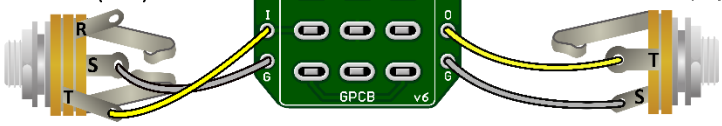



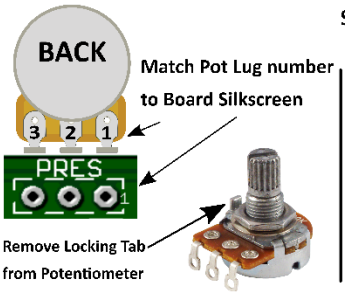




T = Tip
R = Ring
S = Sleeve

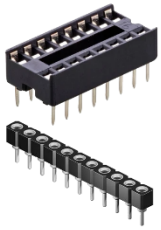


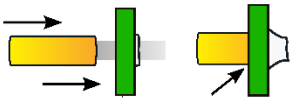

T = Tip
S = Sleeve

Multiple +9v and Ground Pads are convenient hookup points for additional circuits within the same enclosure. This also allows for diverse wiring schemes to suit indiviual needs.



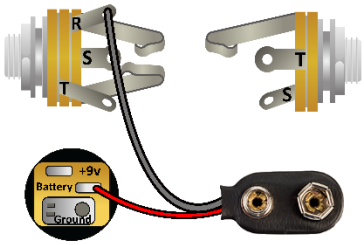

Sockets make troubleshooting easier





When soldering wire to a PCB push the protective PVC jacket flush with the board and pad.

Main Board IN/OUT Pads


## Input/Output Jack Wiring

## T = Tip | R = Ring | S = Sleeve

A Stereo Jack is only needed if using a Battery. Otherwise use a Mono Jack
Battery Strap RED wire is connected to Power Jack
Battery Strap Black wire is connected to RING (stereo jack)
If wiring an LED to our 3PDT Wiring Board then S4, S5 & S6 are not needed