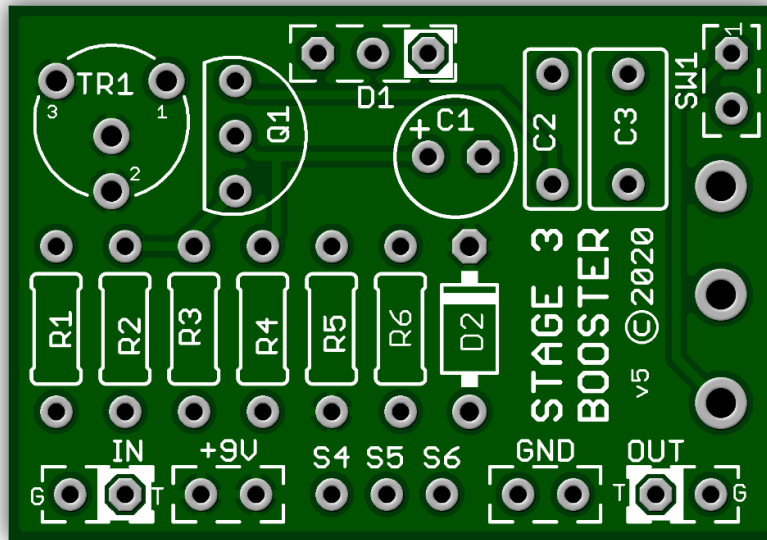


Stage 3 Booster – 2020

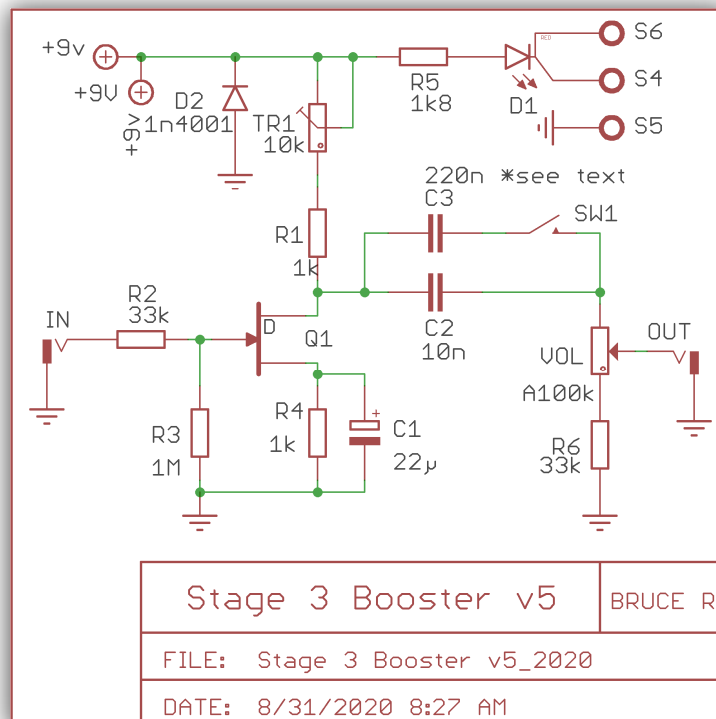
Brand new for 2020 is our infamous Stage 3 Booster (the circuit that started it all)

Those new to our extraordinary Boost/Buffer circuit design understand it provides a transparent **25-30 DB Boost** but really excels at making other circuits sound their best when used in tandem. It won't color your tone but will allow you to get the most out of your pedal board. More than a device you want to leave on all the time it features customizable upgrades. By using the SW1 switch you can now **"tighten"** your tone to achieve those chugging rhythms. Also new for 2020 is the inclusion of **R6** which **removes any attenuation** from the rotation of the Volume knob and additionally features an **on-board potentiometer**.

It's small size with on-board potentiometer allows it to easily be installed in a combo build neatly.



Board Dimensions (W x H) **1.40" x 0.98"**



Part	Value
R1	1k
R2	33k
R3	1M
R4	1k
R5	1k8
R6	33k

Part	Value
C1	22u
C2	10n
C3	220n *
SW1	SPST *
TR1	10k

Part	Value
Q1	J113
D1	CA Status LED
D2	1n4001
VOL	100k A

Build Notes:

Trimpot and Biasing

A 10k trimpot (TR1) and a 1k resistor (R1) are used for biasing the Stage 3.

Use a DMM Bias the Drain of Q1 to 4.5v to 6v. Place the ground probe on any ground in the circuit and place the Red probe on the Drain lead of J113 (Google Datasheet). Turn DMM to V and adjust the trimpot till biased.

Transistor options

J113 provides the best transparent boost among all of our testing however you may try other JFETs. Always socket your transistors and swap out the J113 for a 2N5457 and re-bias for a slightly edgier tone. For an even more aggressive tone you may try a J201 as well. You may need to remove R1 and use a Jumper to bias.

No attenuation

We have added R6 to the 2020 version which prevents attenuation. Now the Boost will begin at the very beginning of the rotation of the Volume potentiometer. If you would like a little attenuation you can decrease the value of R6 - 33k to a lower value. Socket and see.

Tight control & Coupling capacitors

C2 and C3 (switchable) are designed to allow more or less Bass signal through. You also have the option to not use the switching feature at all by simply populating C2 with your favorite value and do not populate SW1.

C3 is populated with 220n which allows all Bass frequency through including Baritone guitar and Bass guitar.

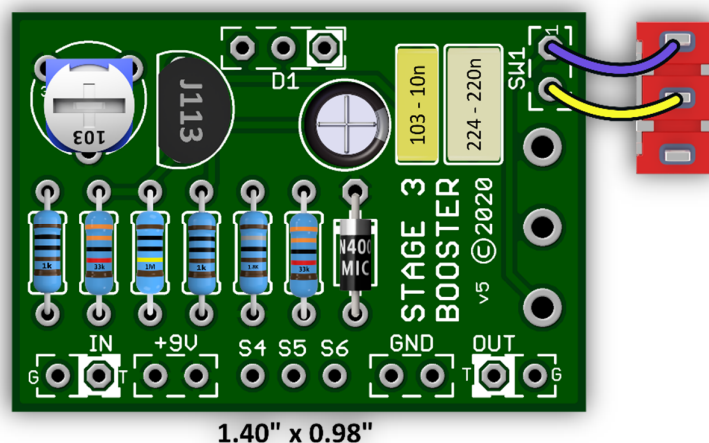
C2 is populated with 10n which cuts off low end rumble effectively "tightening the tone". This is great for chugging rhythms as well as removing unwanted rumble when playing loud with large speaker cabinets.

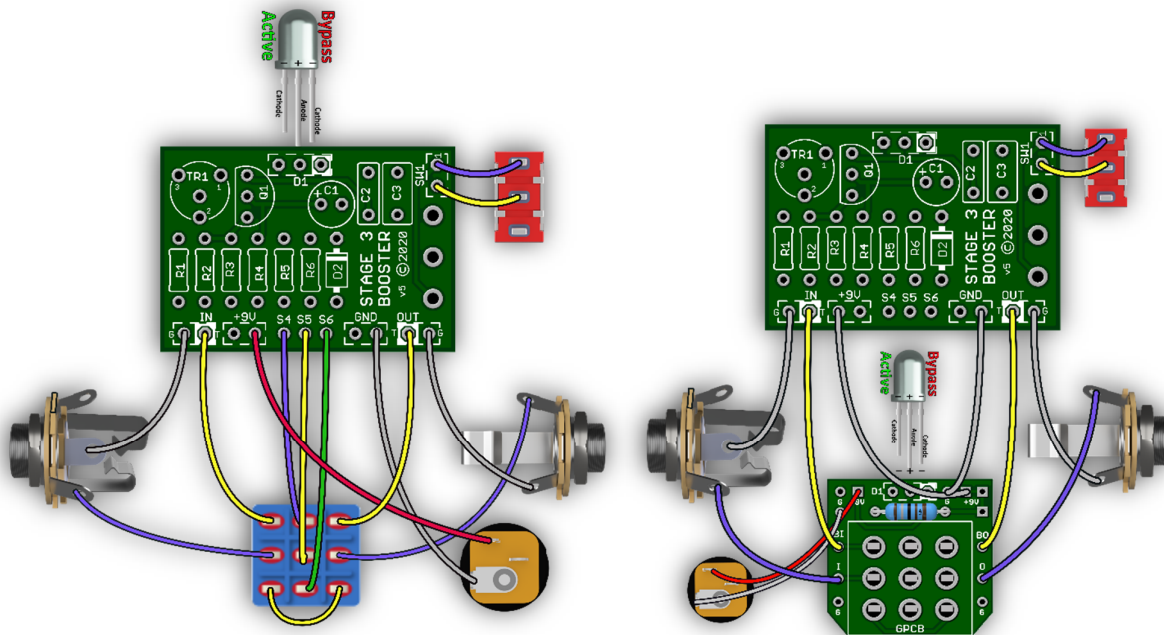
Socket C2 and C3 to experiment with your own values to suit different instruments and guitar rigs.

SW1 Switch

SW1 is used to switch between coupling capacitors as described above. You may use an SPST switch On/On or an SPDT switch by simply leaving the 3rd lug open. You also have the option to ignore the switching.

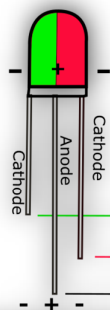
GuitarPCB typically carries J113 and 2N5457 transistors in our shop along with other accessories.





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.

STATUS LED



Bi-Color Common Anode

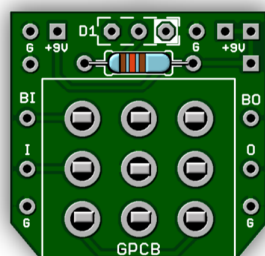
Green = On

Red = Off

Short Lead = On Status Color

Medium Lead = Off Status Color

Long Lead = Common Anode

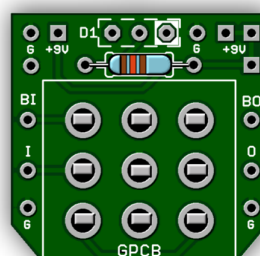


Standard On/Off Status

Green = On

Short Lead = On Status Color

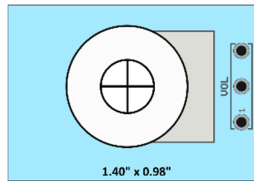
Long Lead = Anode, Status Off



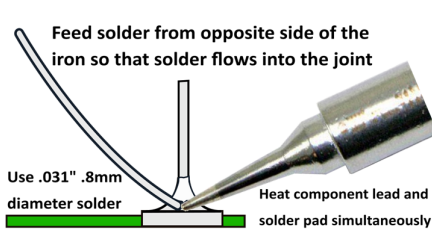
Note: If wiring the LED to our 3PDT board no need to connect S4, S5 & S6 or populate D1 or R5 (CLR) on the main board since you are wiring your LED directly to our board.

Direct Online Link: [3PDT Wiring Board Build Document](#)

DRILL TEMPLATE



Drill Tips: Measure your components before selecting a drill bit. We recommend drilling the pot holes, mounting the pots in the enclosure, and then soldering the pots to the board. This approach should resolve the issue of the pots not fitting through the holes after soldering. We also recommend you make the holes for the pots a little larger than the threads in case you decide to remove the board and put it back in during the build, to avoid problems. Use this guide at your own risk. Make sure page scaling is turned off when you print this PDF, or the image above may be smaller than expected. Verify everything before drilling.

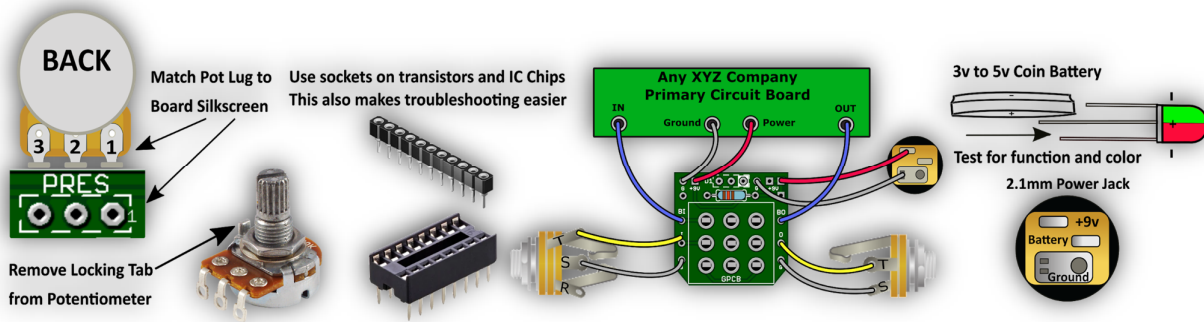


A good solder joint should be shiny and look like this:

- * Carefully re-flow suspect solder joints.
- * Clean and tin your Tip regularly.

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

Use the right tools for the job and be patient.
If you need help ask questions first at the GuitarPCB forum.
We are there to help and we know our products best.



Need a kit? Check out our authorized worldwide distributors:

USA – Check out [PedalPartsAndKits](#) for all your GuitarPCB kit needs in the USA.

Europe – [Das Musikding](#) Order either boards or kits direct from Europe.

[PedalPartsAustralia](#) - Order either boards or kits direct from Australia

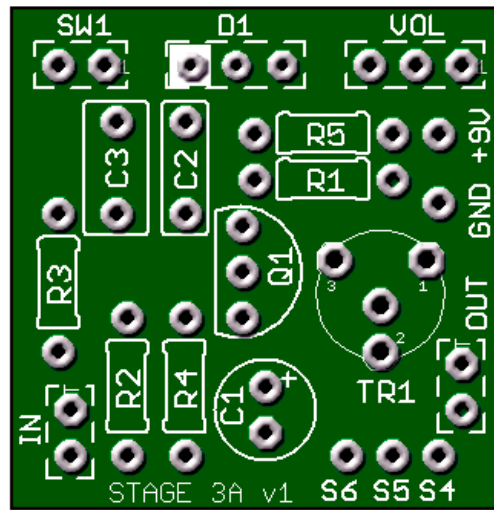


This document, PCB Artwork and Schematic Artwork © GuitarPCB.com. Schematic, PCB and this document by Bruce R. and Barry S. All copyrights, trademarks, and artworks remain the property of their owners. Distribution of this document is prohibited without written consent from GuitarPCB.com. GuitarPCB.com claims no rights or affiliation to those owners.

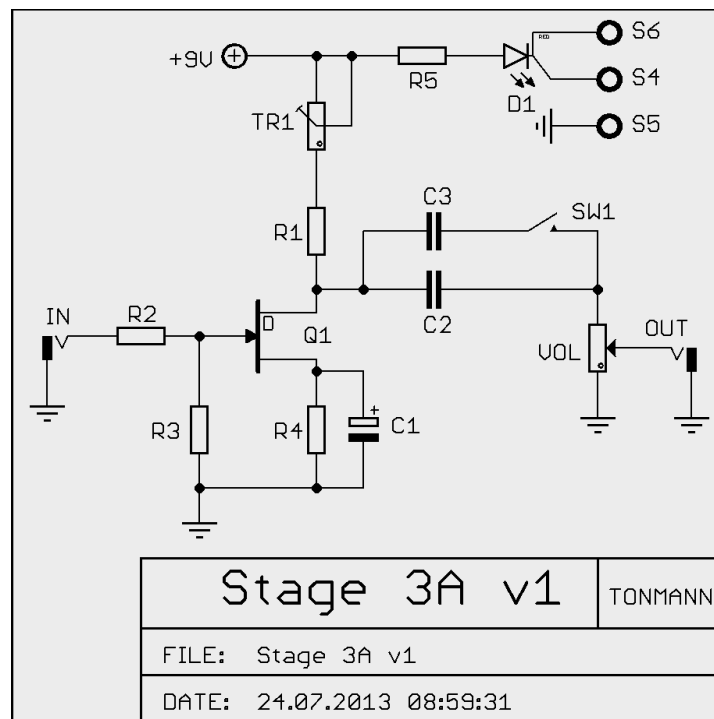
Stage 3 Booster [previous versions](#) next page...

STAGE 3

previous versions



Board Dimensions (W x H) 1.08" x 1.09"

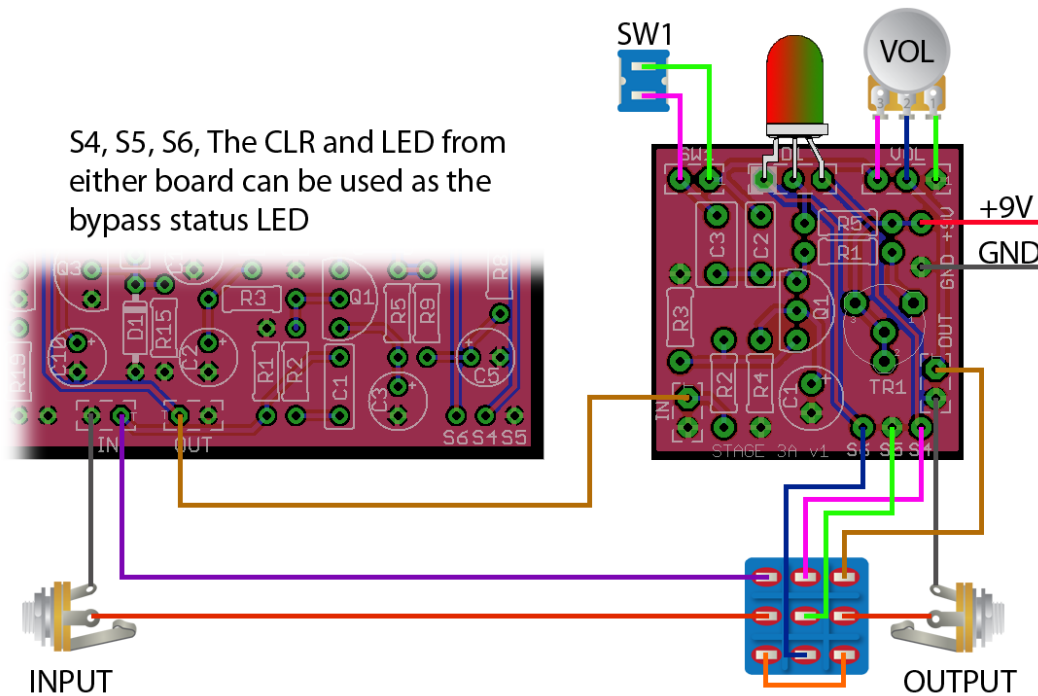


R1	*Text	C1	22μ	VOL	100k Log	D1	CA Bi-colour LED
R2	33k	C2	22n	TR1	10k		
R3	1M	C3	220n				
R4	1k			SW1	SPST Toggle		
R5	1k8	Q1	J113				

WIRING

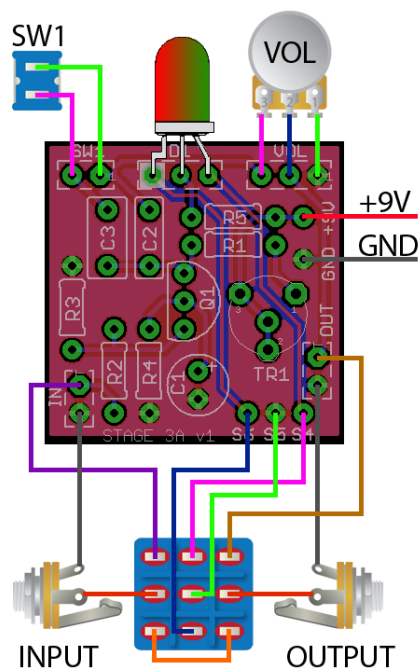
The Stage 3A is the same design as the standard Stage 3 circuit except that the provision for a 3PDT bypass switch has been omitted.

This is useful when using the Stage 3 circuit in tandem with another circuit board in one enclosure and the Stage 3 circuit itself doesn't need to be bypassed.

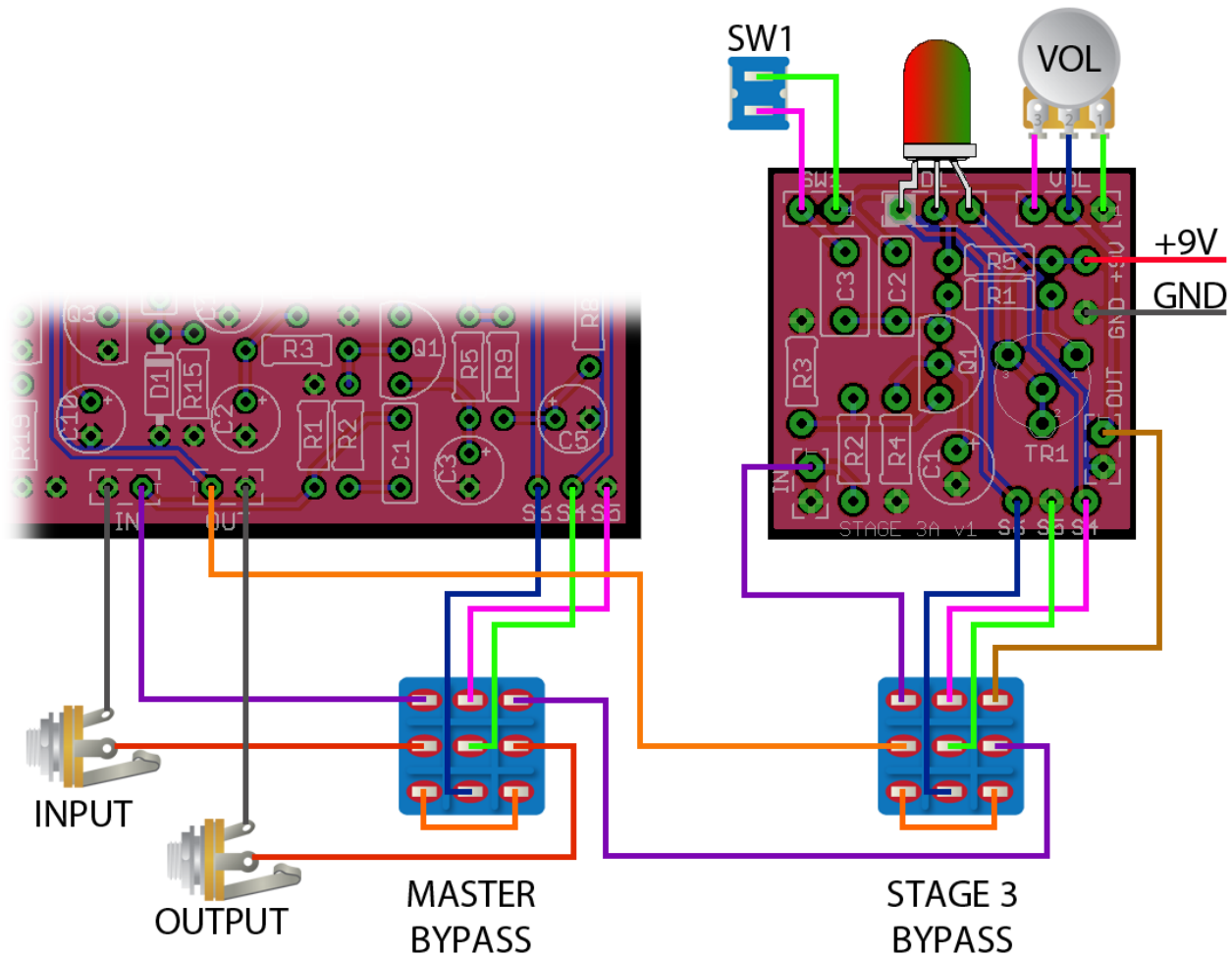


Note: you can use the bypass status circuitry (S4, S5, S6, CLR & LED) from either board.

It is possible to use the Stage 3A as a stand alone circuit in its own enclosure by using the standard bypass wiring method.



When using the Stage 3A in tandem with another circuit it is possible to switch the Stage 3A in and out of the circuit by using two 3PDT footswitches. The first footswitch (Master Bypass) works like a standard bypass switch, switching both circuits in and out; the second footswitch is used to switch the Stage 3A.



The bypass status circuitry (S4, S5, S6, CLR & LED) from the first board is used for the standard bypass status indication and obviously the bypass status circuitry on the Stage 3A board is used for Stage 3 bypass status indication.



This document, PCB Artwork and Schematic Artwork © GuitarPCB.com. Schematic, PCB and this document by Bruce R. and Barry. All copyrights, trademarks, and artworks remain the property of their owners. Distribution of this document is prohibited without written consent from GuitarPCB.com. GuitarPCB.com claims no rights or affiliation to those names or owners.