Samurai Sword

Based on:
Keeley Katana Clean Boost

Effect type:
Clean Boost

Build difficult:
Easy

Number of parts:
Low, total 26 components

Technology:
Voltage regulator
+ JFET transistors

Power consumption:
9V

Enclosure type:
125b

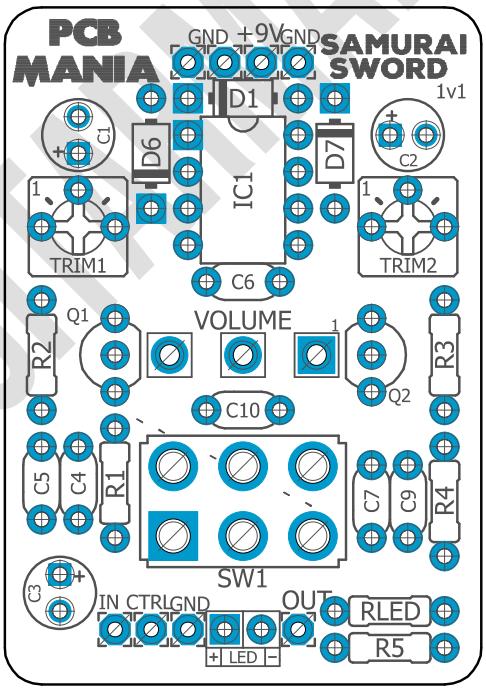
Get your board at:
Samurai Sword

Get your kit at:
Das Musikding (Europe)

Project overview:

This Samurai Sword is a clean boost pedal that is an essential item for your rig. Keep it on all the time to hit your tube amp harder or kick it in just when you need to cut through the mix.

A sharp tool like this can hit your amps with just the right level and is indispensable for achieving the perfect guitar tone.



Index

Introduction

Samurai Sword was crafted with one thing in mind: be the most reliable Clean Boost on the market. And let me tell you, it nails it.

But that´s not the only trick this versatile tool has to offer: the volume knob allows you to create a louder mirror image of your tone by simply rolling it forward! And wait, there is more because this Samurai Sword is also a fat, harmonically rich boost: flip up the switch and push the limits with overdriven tones! You can keep it on all the time to test your amp harder or as an occasional boost to cut sharper through the mix.

Incredibly versatile, astonishingly functional, and with the most beautiful enclosure (but hey, that last thing is up to you!).

Controls

Potentiometers

- Volume

Switches

- SW1

Bill of materials

Resistors	
Part	**Value**
R1	1M
R2	680R
R3	1M
R4	680R
RLED	4K7

Capacitors	
Part	**Value**
C4	100p
C5	220n
C6	220n
C7	220n
C9	15n
C10	1n

Electrolytics Capacitors	
Part	**Value**
C1	10u
C2	10u
C3	10u

Potentiometers	
Part	**Value**
VOLUME	250K B

Trimpots	
Part	**Value**
TRIM1	10K
TRIM2	10K

IC	
Part	**Value**
IC1	TC1044SCPA

Transistors	
Part	**Value**
Q1	2N5458
Q2	2N5458

Switches	
Part	**Value**
SW1	DPDT On-On

Diodes	
Part	**Value**
D1	1N5817
D6	1N5817
D7	1N5817
LED	3mm red LED

Shopping list

Resistors		
Qty	**Value**	**Parts**
2	1M	R1, R3
1	4K7	RLED
2	680R	R2, R4

Capacitors		
Qty	**Value**	**Parts**
1	100p	C4
1	15n	C9
1	1n	C10
3	220n	C5, C6, C7

Electrolytic Capacitors		
Qty	**Value**	**Parts**
3	10u	C1, C2, C3

Potentiometers		
Qty	**Value**	**Parts**
1	B250K	VOLUME

Trimpots		
Qty	**Value**	**Parts**
2	10K	TRIM1, TRIM2

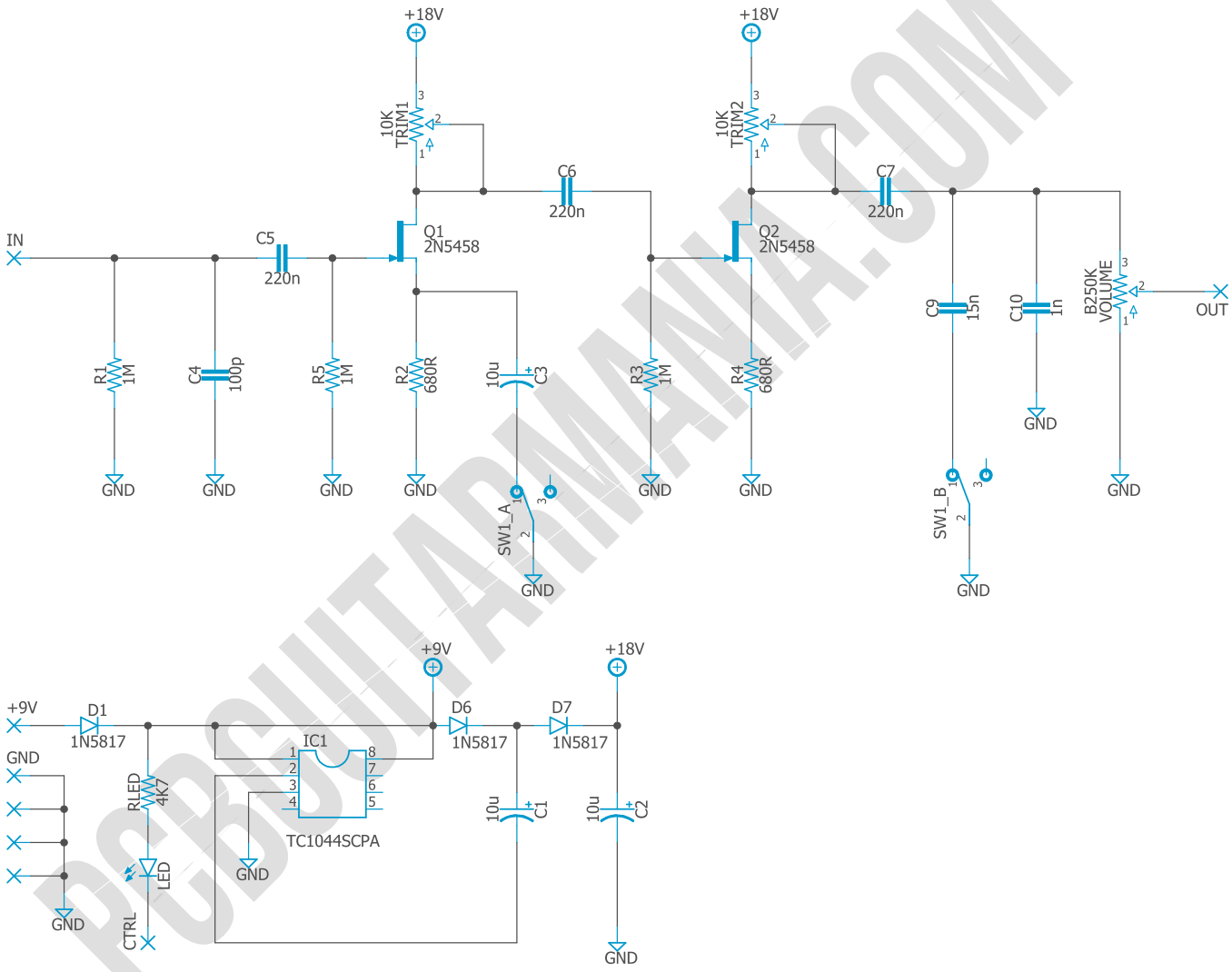
IC		
Qty	**Value**	**Parts**
1	TC1044SCPA	IC1

Transistors		
Qty	**Value**	**Parts**
2	2N5458	Q1, Q2

Switches		
Qty	**Value**	**Parts**
1	DPDT On-On	SW1

Diodes		
Qty	**Value**	**Parts**
3	1N5817	D1, D6, D7
1	3mm red LED	LED

Schematic



Components Recommendations

As many people like to experiment with some pedals with higher voltage, always ensure your **electrolytic capacitors'** max tolerance is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those under 1nf. However, high-quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

Build Notes

If this is one of your first projects, I recommend you to take a look at our Pedal Building Guide.

For a successful and tidy build, it's recommended the following order:

1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

Wiring Diagram

All our projects include a free 3PDT Board to make the wiring easier and tidier. Also, all of our PCBs feature the status LED on board.

The pad named "Ctrl" or "LED" is the one that controls the status of the led; wire it to the "LED" pad on the 3PDT board or in the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it here to access our Pedal Wiring Guide.

Drill Template

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

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

Licensing and Usage

We really appreciate your trust and support in buying this PCB, as well as your will to dive into the DIY electronics world. For us, that's why you can make this project work properly and enjoy not only the building process but also experiment and play with it on your rig.

We try to reply to every question we receive on our email or our social media. Still, we try to encourage all our customers to join our PCB Guitar Mania – Builders Group on Facebook to post all your doubts, issues, suggestions, or requests, share your builds, and have some feedback from other fellow builders and us!

We tested all our projects following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been checked. These are suggestions based on the schematic analysis and the experiences and opinions of others. Feel free to share with us your views and recommendations regarding the mods your personal experimentation.

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much appreciated.

If you are a builder planning to make your own run of pedals, we also offer the service of custom-made boards with your brand and logo, design according to your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silkscreen or other way of trying to hide our logos and the source of the PCBs. Like it's written above, if you want to have your designs with your brand and logo, we could undoubtedly reach an agreement.

Follow us on Instagram and Facebook to stay in tune with the latest projects!