

PROJECT NAME

# ANUBIS

BASED ON

Basic Audio Scarab Deluxe

EFFECT TYPE

Fuzz / Distortion

BUILD DIFFICULTY

■■■■■ Easy

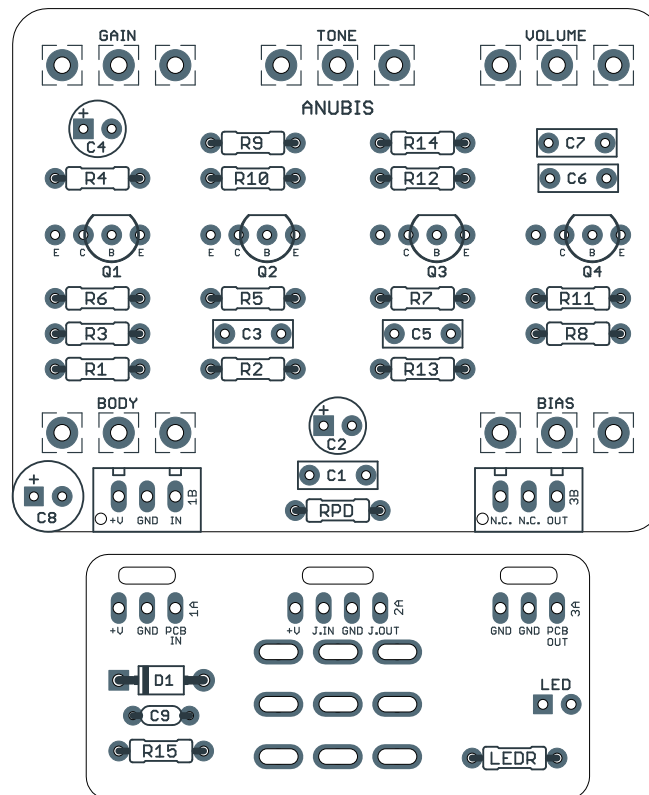
DOCUMENT VERSION

1.0.0 (2021-02-19)



## PROJECT SUMMARY

An adaptation of the classic Tone Bender Mk. II circuit using silicon transistors and a Big Muff-style tone control.



Actual size is 2.3" x 1.86" (main board) and 1.78" x 0.87" (bypass board).

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## INTRODUCTION

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The Anubis Silicon Fuzz is an adaptation of the Basic Audio Scarab Deluxe, first released in 2010 as the successor to the original Scarab, which was in turn based on the Hot Silicon, a classic circuit in the DIY community that adapts the Tone Bender Mk. II for silicon transistors.

The Scarab Deluxe added an input capacitor blend as well as an external bias control for the third transistor. The original Scarab was discontinued after the Deluxe was released.

The Hot Silicon is also available from Aion FX as the [Zircon Silicon Fuzz](#). The Zircon and Anubis projects are very similar to each other, but just different enough that they couldn't be built on the same PCB.

## USAGE

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The Anubis has the following controls:

- **Body** blends between two input capacitors, gradually adding pre-gain bass as it's turned up.
- **Gain** controls the amount of gain in the transistor fuzz stage.
- **Bias** controls the bias of the Q3 transistor, from low gain all the way to gated and sputtery. (It's best set in the middle for normal operation.)
- **Tone** is a Big Muff-style balance control that pans between a low-pass filter (bass emphasis) and a high-pass filter (treble emphasis).
- **Volume** is the overall output level.

## PARTS LIST

This parts list is also available in a spreadsheet format which can be imported directly into Mouser for easy parts ordering. Mouser doesn't carry all the parts (most notably potentiometers) so the second tab lists all the non-Mouser parts as well as sources for each.

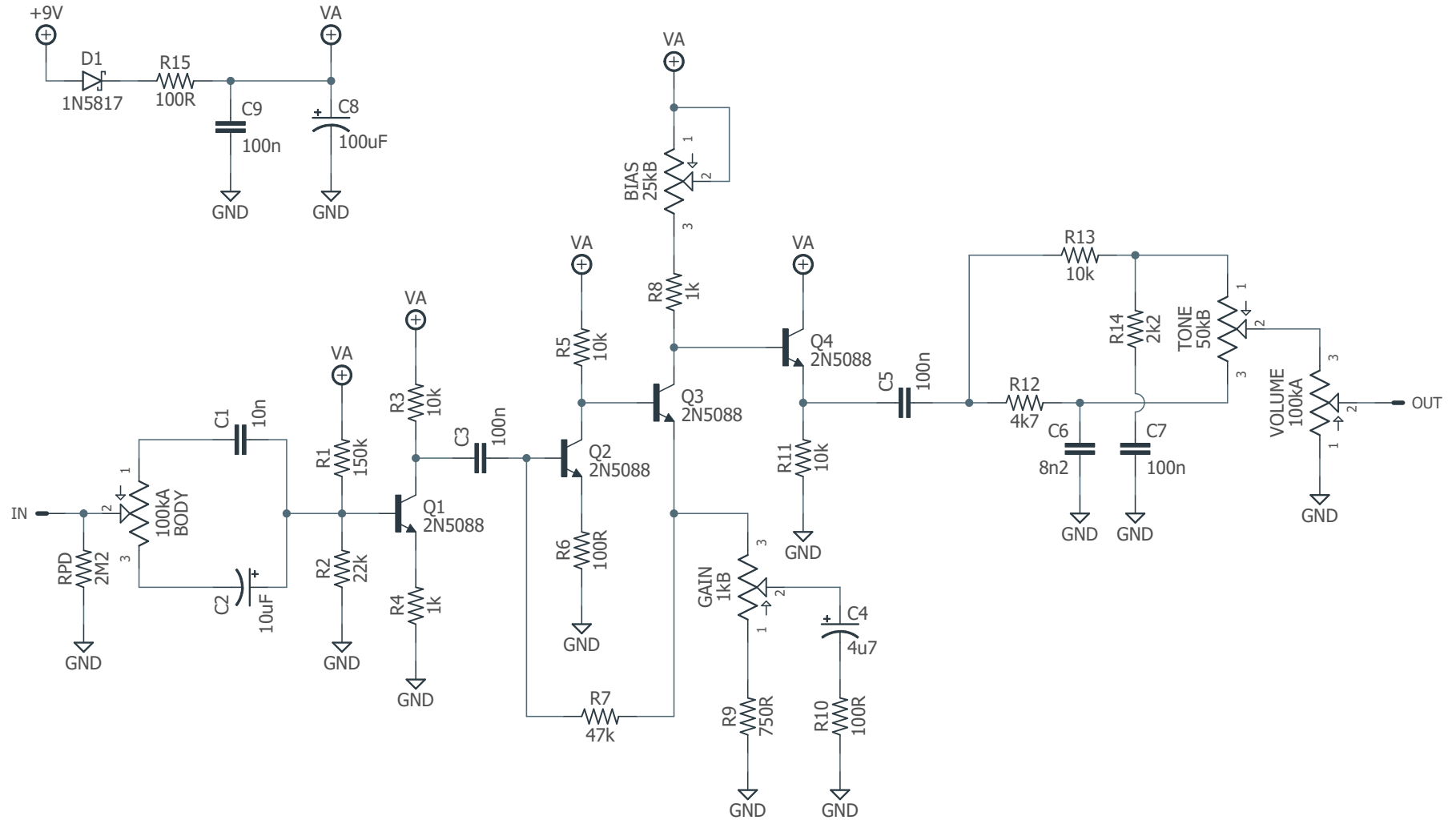
[View parts list spreadsheet](#) →

PART	VALUE	TYPE	NOTES
R1	150k	Metal film resistor, 1/4W	
R2	22k	Metal film resistor, 1/4W	
R3	10k	Metal film resistor, 1/4W	
R4	1k	Metal film resistor, 1/4W	
R5	10k	Metal film resistor, 1/4W	
R6	100R	Metal film resistor, 1/4W	
R7	47k	Metal film resistor, 1/4W	
R8	1k	Metal film resistor, 1/4W	
R9	750R	Metal film resistor, 1/4W	
R10	100R	Metal film resistor, 1/4W	
R11	10k	Metal film resistor, 1/4W	
R12	4k7	Metal film resistor, 1/4W	
R13	10k	Metal film resistor, 1/4W	
R14	2k2	Metal film resistor, 1/4W	
R15	100R	Metal film resistor, 1/4W	Power supply resistor. Not in original unit, but improves filtering and lowers noise.
RPD	2M2	Metal film resistor, 1/4W	Input pulldown resistor. Can be as low as 1M.
LEDR	4k7	Metal film resistor, 1/4W	LED current-limiting resistor. Adjust value to change LED brightness.
C1	10n	Film capacitor, 7.2 x 2.5mm	
C2	10uF	Electrolytic capacitor, 5mm	
C3	100n	Film capacitor, 7.2 x 2.5mm	
C4	4.7uF	Electrolytic capacitor, 4mm	
C5	100n	Film capacitor, 7.2 x 2.5mm	
C6	8n2	Film capacitor, 7.2 x 2.5mm	
C7	100n	Film capacitor, 7.2 x 2.5mm	
C8	100uF	Electrolytic capacitor, 6.3mm	
C9	100n	MLCC capacitor, X7R	
D1	1N5817	Schottky diode, DO-41	
Q1	2N5088	BJT transistor, NPN, TO-92	
Q2	2N5088	BJT transistor, NPN, TO-92	
Q3	2N5088	BJT transistor, NPN, TO-92	
Q4	2N5088	BJT transistor, NPN, TO-92	

## PARTS LIST, CONT.

PART	VALUE	TYPE	NOTES
BIAS	25k $\Omega$	16mm right-angle PCB mount pot	
BODY	100k $\Omega$	16mm right-angle PCB mount pot	
GAIN	1k $\Omega$	16mm right-angle PCB mount pot	
TONE	50k $\Omega$	16mm right-angle PCB mount pot	
VOL.	100k $\Omega$	16mm right-angle PCB mount pot	
IN	1/4" stereo	1/4" phone jack, closed frame	Switchcraft 112BX or equivalent.
OUT	1/4" mono	1/4" phone jack, closed frame	Switchcraft 111X or equivalent.
DC	2.1mm	DC jack, 2.1mm panel mount	Mouser 163-4302-E or equivalent.
FSW	3PDT	Stomp switch, 3PDT	
ENC	125B	Enclosure, die-cast aluminum	Can also use a Hammond 1590N1.

# SCHEMATIC



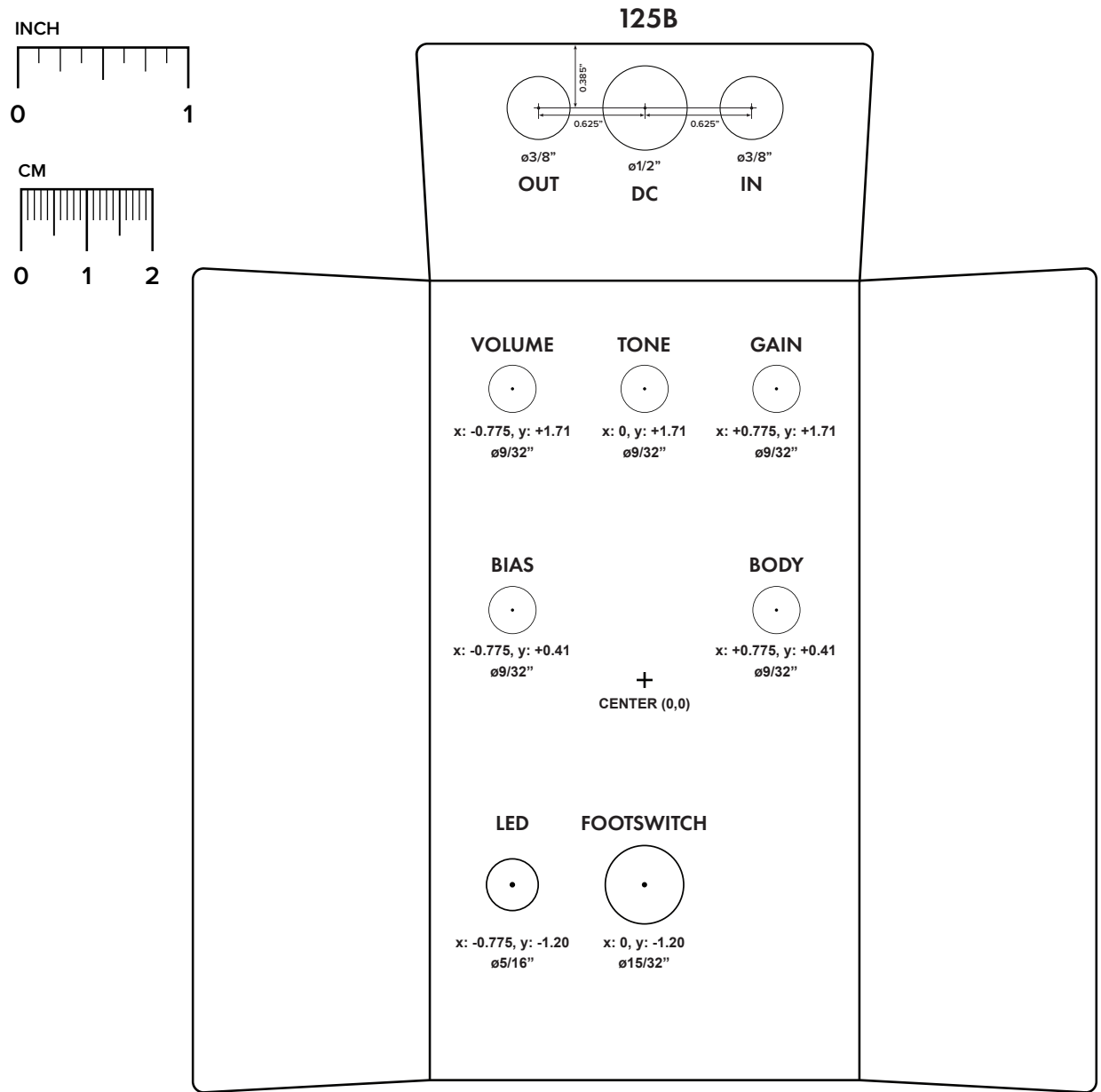
# DRILL TEMPLATE

Cut out this drill template, fold the edges and tape it to the enclosure. Before drilling, it's recommended to first use a center punch for each of the holes to help guide the drill bit.

Ensure that this template is printed at 100% or "Actual Size". You can double-check this by measuring the scale on the printed page.

**Top jack layout** assumes the use of closed-frame jacks like the [Switchcraft 111X](#). Open-frame jacks will not fit in layouts with 5 or more knobs due to the placement of the DC jack.

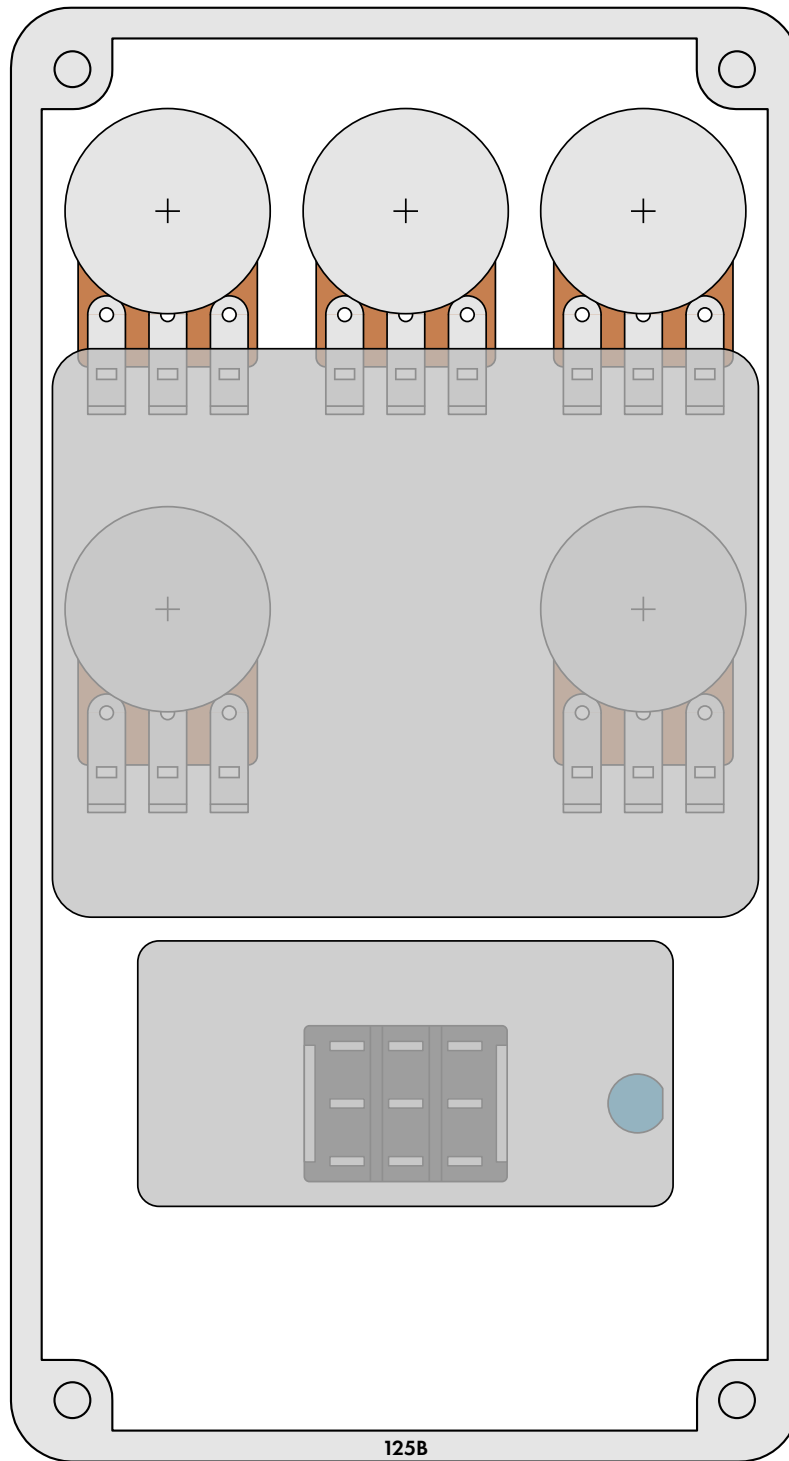
**LED hole drill size** assumes the use of a [5mm LED bezel](#), available from several parts suppliers. Adjust size accordingly if using something different, such as a 3mm bezel, a plastic bezel, or just a plain LED.



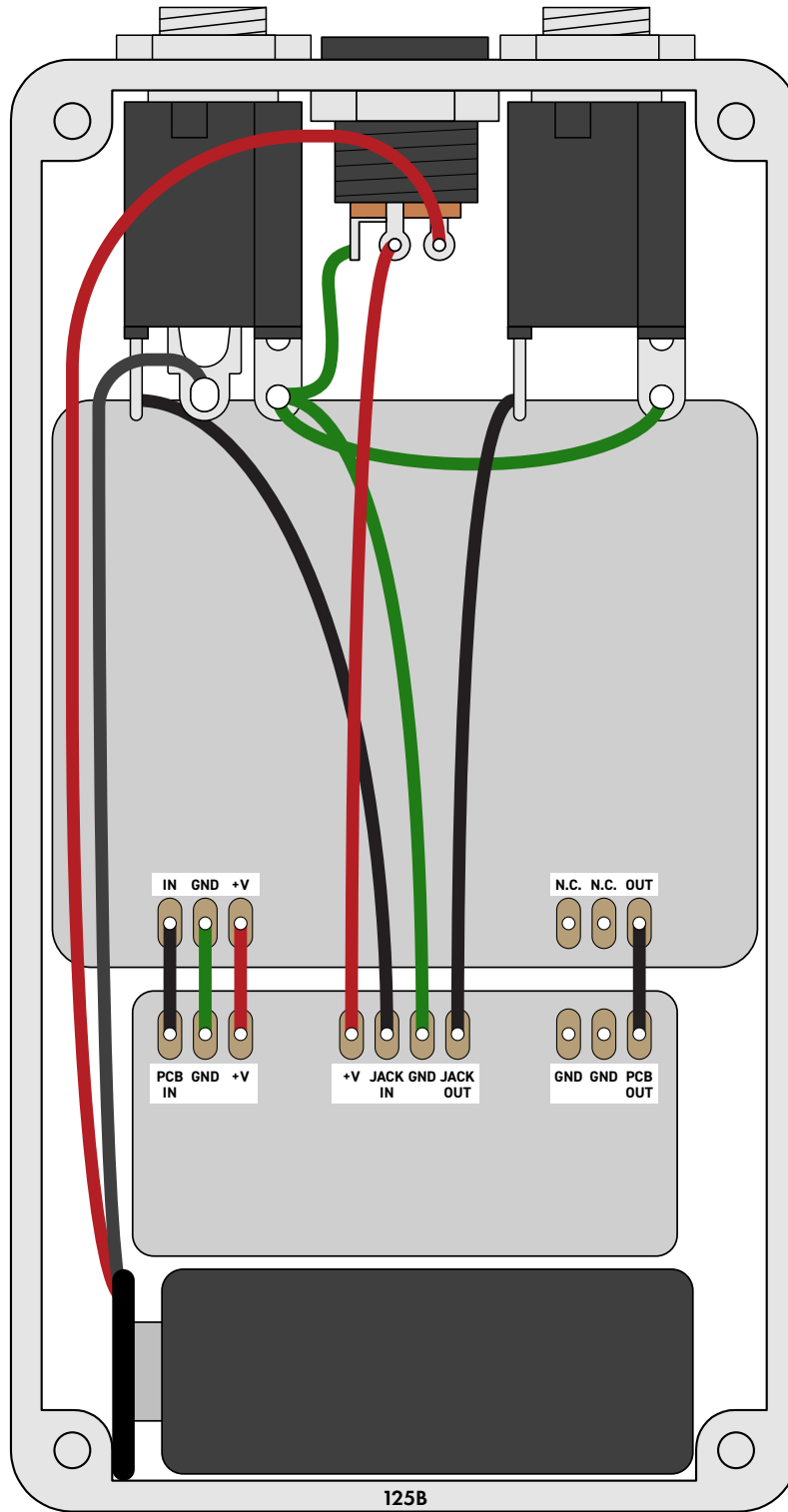
# ENCLOSURE LAYOUT

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Enclosure is shown without jacks. See next page for jack layout and wiring.



# WIRING DIAGRAM





## LICENSE & USAGE

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**No direct support is offered for these projects beyond the provided documentation.** It's assumed that you have at least some experience building pedals before starting one of these. Replacements and refunds cannot be offered unless it can be shown that the circuit or documentation are in error.

**All of these circuits have been tested in good faith in their base configurations.** However, not all the modifications or variations have necessarily been tested. These are offered only as suggestions based on the experience and opinions of others.

**Projects may be used for commercial endeavors in any quantity** unless specifically noted. No attribution is necessary, though a link back is always greatly appreciated. The only usage restrictions are that **(1) you cannot resell the PCB as part of a kit without prior arrangement, and (2) you cannot “goop” the circuit, scratch off the screenprint, or otherwise obfuscate the circuit to disguise its source.** (In other words: you don't have to go out of your way to advertise the fact that you use these PCBs, but please don't go out of your way to hide it. The guitar effects industry needs more transparency, not less!)

## DOCUMENT REVISIONS

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### 1.0.0 (2021-02-19)

Initial release.