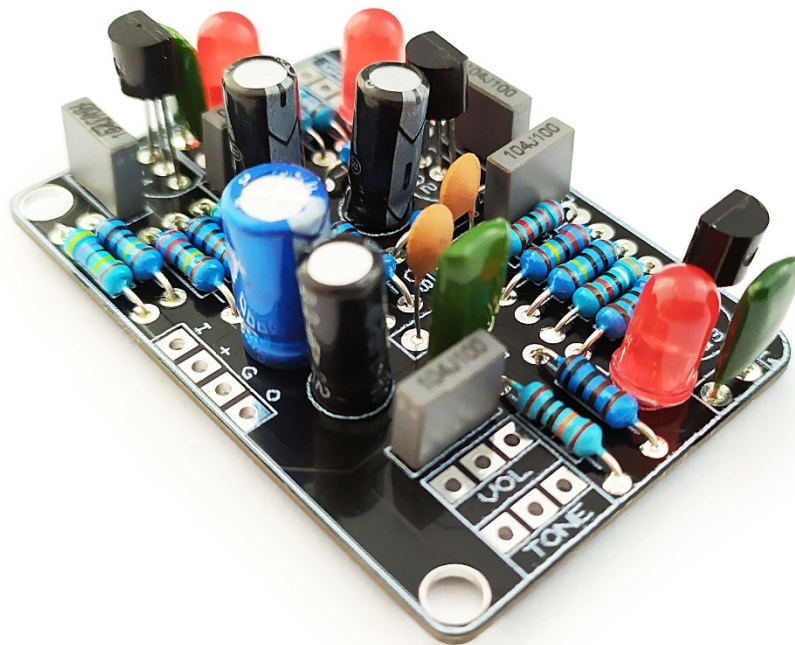


# **Obsidian Distortion Building Manual**












# Effect Pedal Kits:

The **Obsidian Distortion Kit** is perfect if you're looking for a pedal in between an overdrive and a distortion. Unlike in 1-stage pedals, where all the gain is concentrated in one IC or transistor and the tone produced is harsher, the Obsidian Distortion Kit uses **three MOSFET-based gain stages** instead. That way the sound can be smoothly clipped in each stage and the sound created is way warmer than with other pedals. But that doesn't mean that the Obsidian Distortion can't create some real heavy metal tones: turn the Gain knob to the maximum and you'll get a really thick distorted sound!

The **Obsidian Distortion** has three control knobs:  
Gain, Volume and Tone.

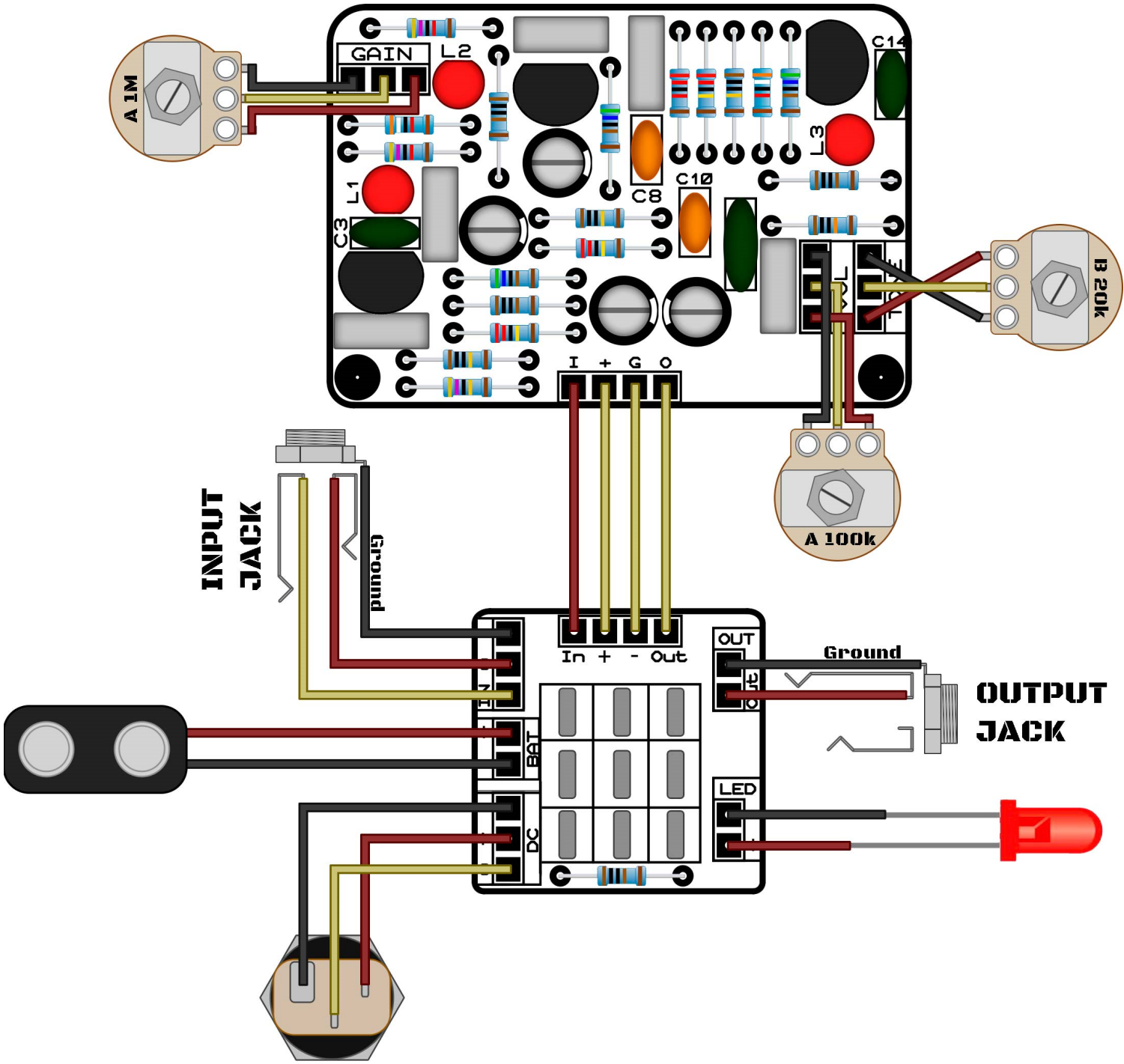
# BOM (1/2)

Resistors (19)				Capacitors (14)		
1	R1	4.7M		5	C1, C5, C6, C9, C12	100n
3	R2, R10, R15	2.2M		1	C2	47u (electrolytic)
3	R3, R9, R14	1M		1	C3	1n
3	R4, R11, R17	5.6k		3	C4, C7, C11	2.2u (electrolytic)
3	R5, R12, R16	1k		2	C8, C10	100p
2	R6, R8	47k		1	C13	10n
2	R7, R18	39k		1	C14	4.7n
1	R13	22k				
1	R19	100k				

# BOM (2/2)

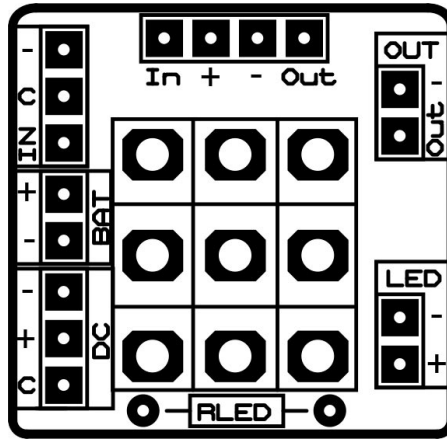
Diodes, Transistors and ICs			Generic Parts and Potentiometers		
3	Q1, Q2, Q3	BS170	1	Battery clip	
3	L1, L2, L3	Red 3mm LED	1	DC Jack	
			1	RLED	1k LED resistor
			1	LED Bezel	
			1	3PDT	
			2	IN, OUT	6.35mm Jacks
			1	25kB (Linear)	TONE
			1	100kA (Logarithmic)	VOL
			1	1MA (Logarithmic)	GAIN

# Component Placement

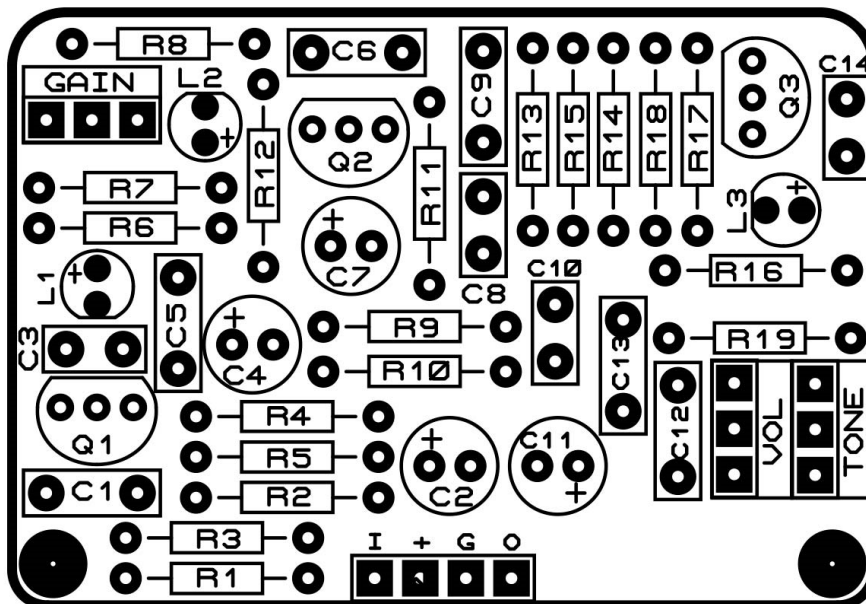


# Board Layouts

## 3PDT PCB

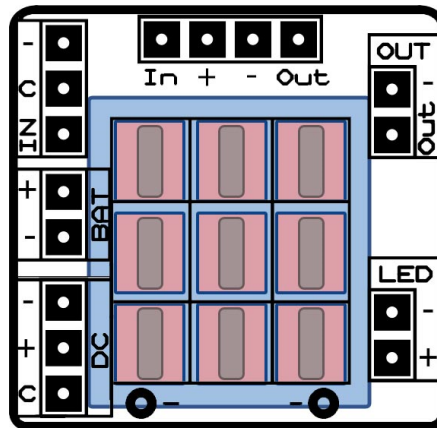


## Effect PCB



# Building Tips

- 1- Pay attention to the **orientation of the 3PDT!** In the following picture you can see how the 3PDT pins should be positioned (inserting the pins in the holes can be a bit tight to avoid movement while soldering):



- 2- For a proper soldering you just have to apply the **right amount of solder wire**. A right solder joint should have a concave shape around the joint and look like this:

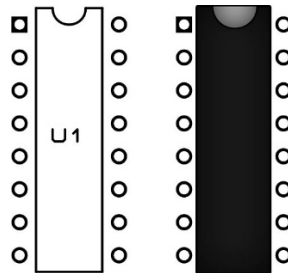


- 3- Don't apply too much heat! When soldering, the time you hold the solder iron against the joint should be **as short as possible** to avoid damaging any part (a few seconds should be enough). If you can't get a solder joint right, **let it cool** a bit before trying again.
- 4- If having troubles with the building, checking the schematic in the last page will help you find **where the audio signal stops**. When you find the spot, check out that **everything around that joint is ok** (components placed at their right place, solder joints...).

# Building Tips

5- Pay attention to the **parts that have a polarity** and make sure they are connected as in the component placement picture:

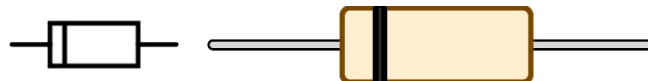
- **ICs** (they have a small dot or indication that must fit the indication in the board)



- **Electrolytic capacitors** (longer pin is connected to the “+” hole):



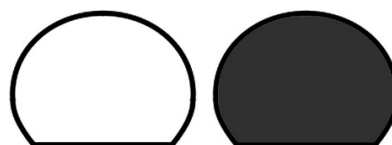
- **Diodes** (check for the mark and make it fit with the one in the PCB):



- **Leds** (longer pin is connected to the “+” hole)



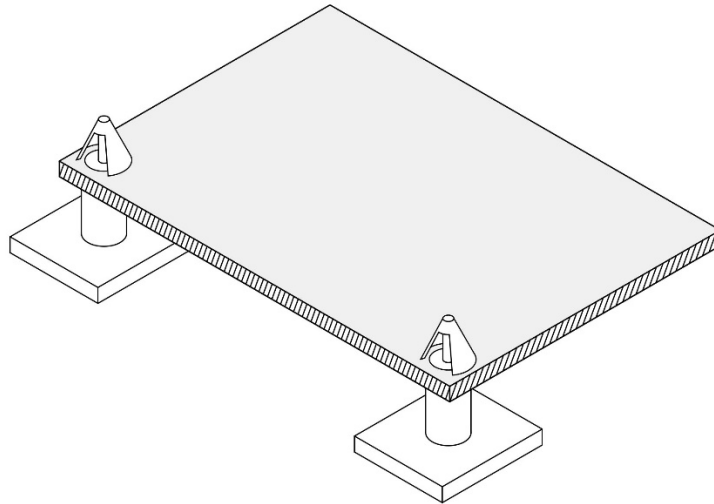
- **Transistors** (inserted to fit the drawing in the PCB)





# **Building Tips**

- 6- With the kit we include plastic PCB supports with an adhesive bottom. You can use them to anchor the PCB to your enclosure for a better stability. Just insert the PCB support tip into the 3.5mm holes and remove the adhesive protective film.



**To avoid any issue always check the latest building manual. Use the pictures only as a reference! Colors/shapes of wires, PCB or parts can change slightly, this doesn't affect their functionality in any way.**

**Always double check part polarity, resistor and capacitor values, potentiometer placement, IC orientation... before soldering.**

# Schematic

