

EGODRIVER

FX TYPE: OVERDRIVE / DISTORTION

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The newest version of the EgoDriver (based on the Fulltone® OCD™) features PCB mounted pots and switch. One additional mod has been included to allow you to switch from the stock Mosfet-based clippers to LED clipping. With LEDs, the EgoDriver gains a bit of volume and somewhat higher clarity with chords. Please see an important note about this mod on page 4!

Controls

GAIN: Sets the overall distortion.

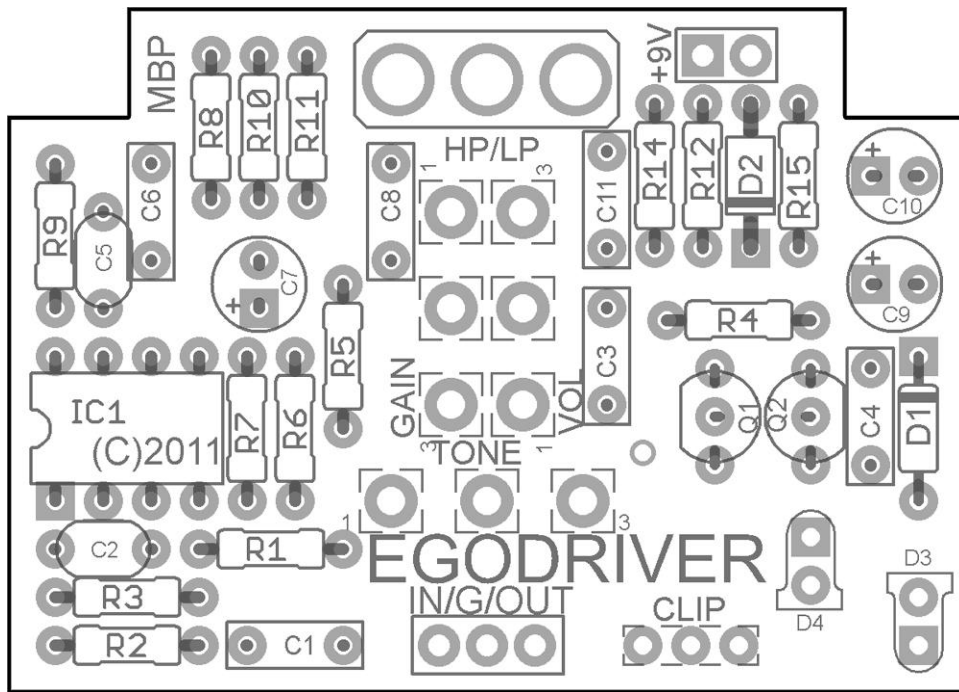
TONE: A simple low pass filter to reduce the high end.

VOL: Output volume.

HP/LP: In “HP” mode, a 22k resistor is added in parallel to the 33k output resistor. This reduces the overall resistance and thus gives you added output. It is essentially a small boost switch.

CLIP: This optional mod lets you select between stock and LED clipping.

Layout Diagram



Bill of Materials

Resistors		Caps		Diodes	
R1	1M	C1	22n	D1	1n34a
R2	10k	C2	220pF	D2	1n4001
R3	470k	C3	68n	D3, D4	LED 5MM
R4	2k2	C4	1n	Transistors	
R5	18k	C5	220pF	Q1, Q2	2n7000
R6	10k	C6	100n	IC	
R7	10k	C7	10uF	IC1	TL082
R8	39k	C8	47n	Switches	
R9	150k	C9	10uF	CLIP	SPDT (On/On)
R10	22k	C10	10uF	HP/LP	SPDT (On/On)
R11	33k	C11	100n	Pots	
R12	100R			GAIN	1MA
R14	10k			TONE	10kB
R15	10k			VOL	500kA

Notes

- **R1** is optional...the stock unit does not have a pull-down resistor.
- You can usually find the TL082's at Radio Shack. Good subs are TLC2272 or the NE5532.
- C7 is a tantalum in the stock unit.
- High Brightness (water clear) 5MM LEDs sound very good for **D3** and **D4**. Other types of LEDs will work, too.
- 16MM PCB mounted pots and solder lug SPDTs are standard for this build. Note that the **GAIN, TONE, VOL** pots and **HP/LP** switch mount underneath the PCB! The **CLIP** mod, if used, should be wired off-board.
- Please refer to the stock madbeanpedals wiring diagram if you need guidance on wiring the board: http://www.madbeanpedals.com/tutorials/downloads/StandardWiring_MBP.pdf

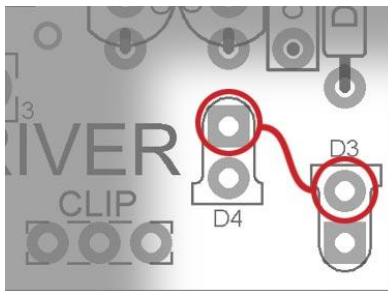
Mods

- A common complaint about DIY versions of the OCD is that it has too much gain, and/or has too much volume. This can be easily fixed with two value changes. For the **GAIN** pot, a 500kA is suggested. While this reduces the total gain some, you get a wider range of control. Many people find that the stock OCD loses its character once the gain pot passes the midpoint position. A 500kA will fix that. For the **VOL** pot, use a standard 100kA. This reduces the output volume AND makes unity closer to the midpoint.
- The **CLIP** mod is a useful addition to the **EgoDriver**. Using high brightness LEDs in place of the stock 2n7000 offers increased clarity and volume, and does seem to give chords a little more definition. Having listened to, and used the stock clipping over the years, I find the LEDs are a bit of an improvement to the circuit. It's such a good improvement that I decided to frustrate myself and everyone else by designing the PCB incorrectly, ensuring that the mod doesn't work.

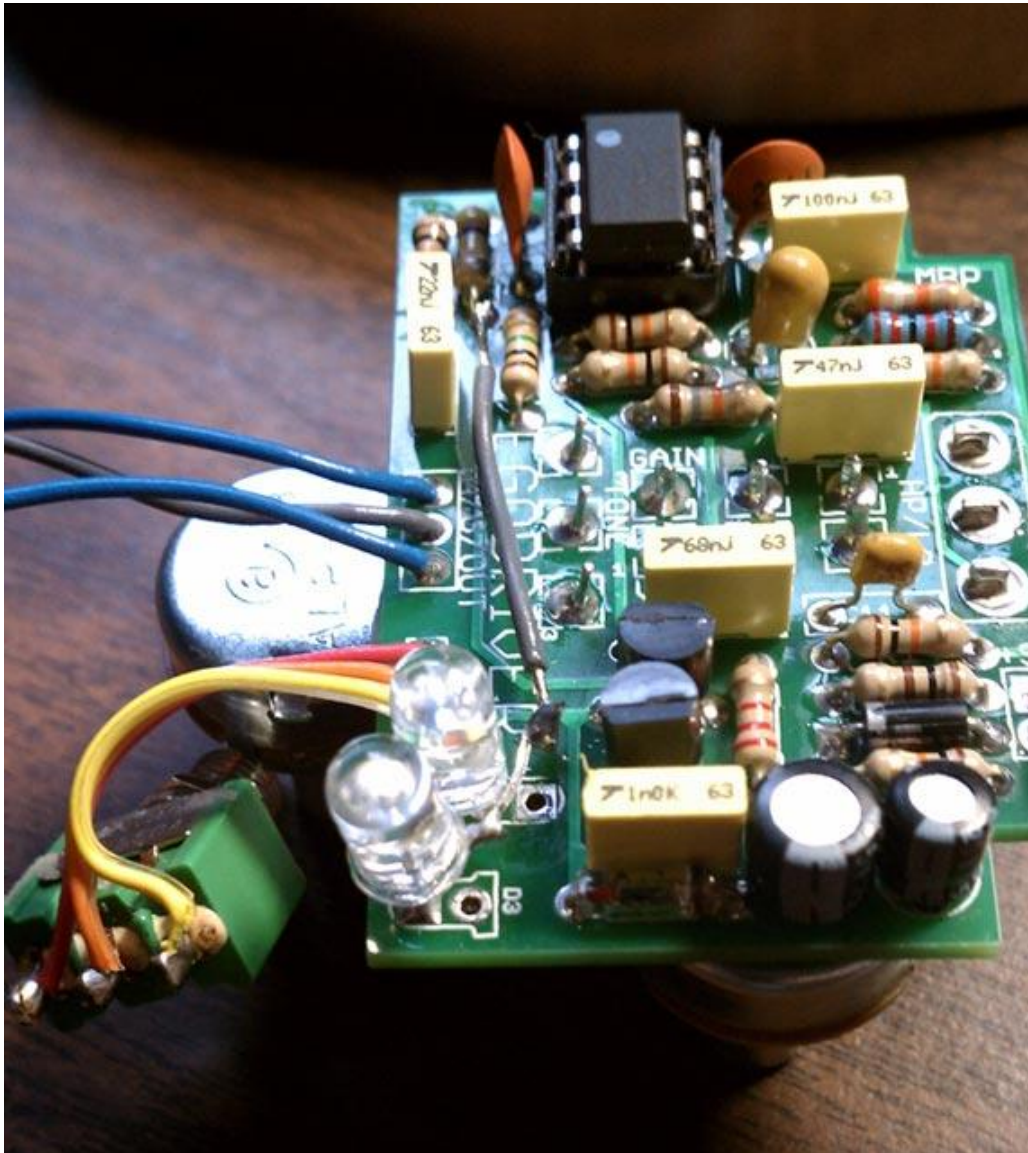
Wait....what?

Yup. I made a mistake on the PCB layout when I added this mod. I inadvertently tied the LED's to ground, when they should have to be tied to the Vb rail (like the 2n7000s). This means that a little workaround has to be used in order to get this working correctly. But, I promise it's not too painful. Mostly.

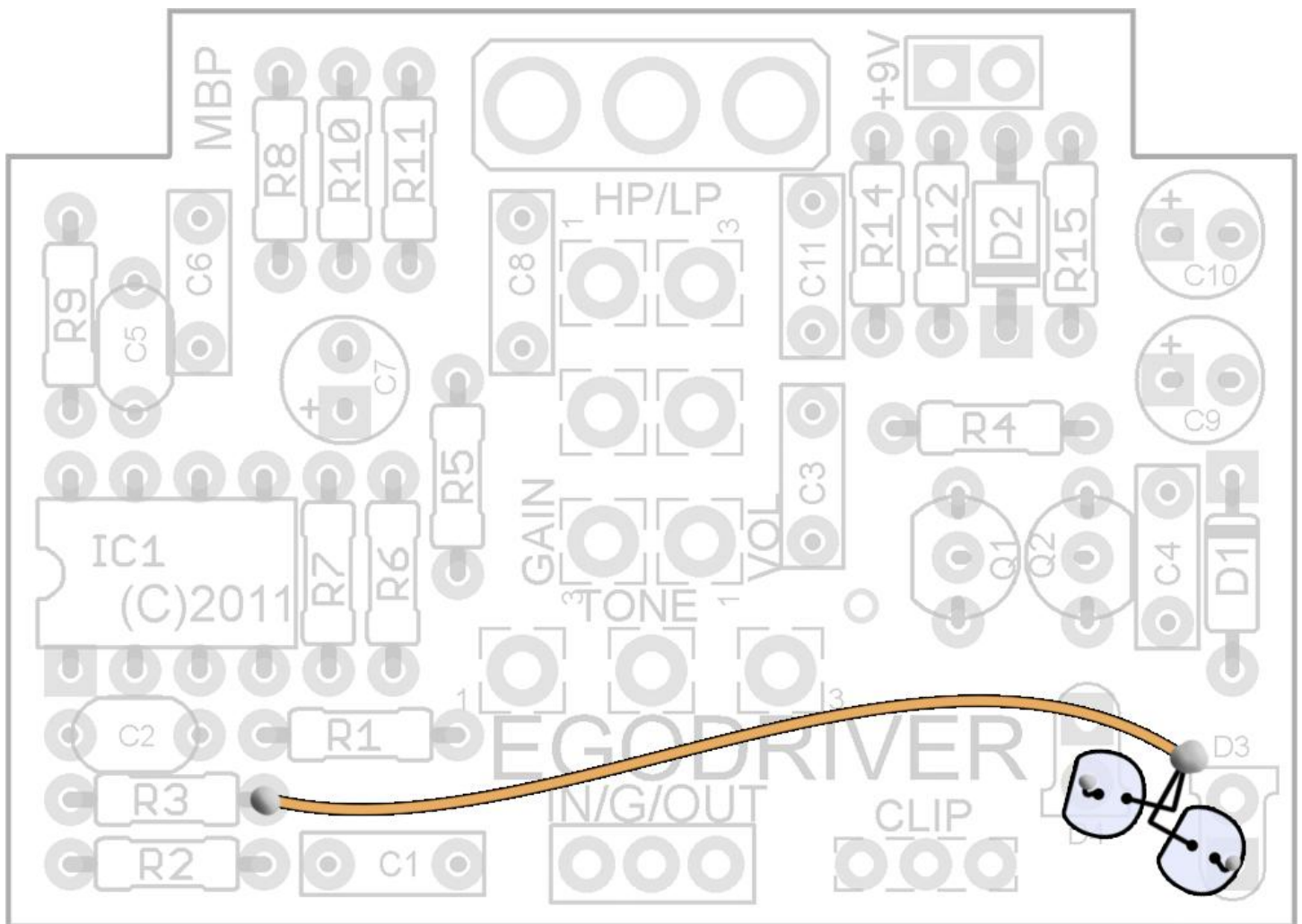
Here's the problem. The two pads circled below are connected to the ground plane on the bottom of the board. There is no easy way to re-route them, because you would have to cut the four thin traces that connect from each pad to the ground plane, and will most likely destroy the pad in the process.



This means the two leads that would normally be soldered there need to actually be soldered together instead, and then connected via wire to the appropriate place on the PCB where the Vb rail resides. Here's a close-up pic of how I fixed mine. On D3, the positive lead (the longer one) of my LED is soldered to the square pad on the PCB. On D4, the negative lead of the second LED is soldered to the round pad on the PCB where D4 is located. The two free leads were bent up and soldered together and then a wire was soldered to that connection. The other end of the wire was soldered to R3.



And here is a crude graphic illustration of the fix. It looks worse than it is...

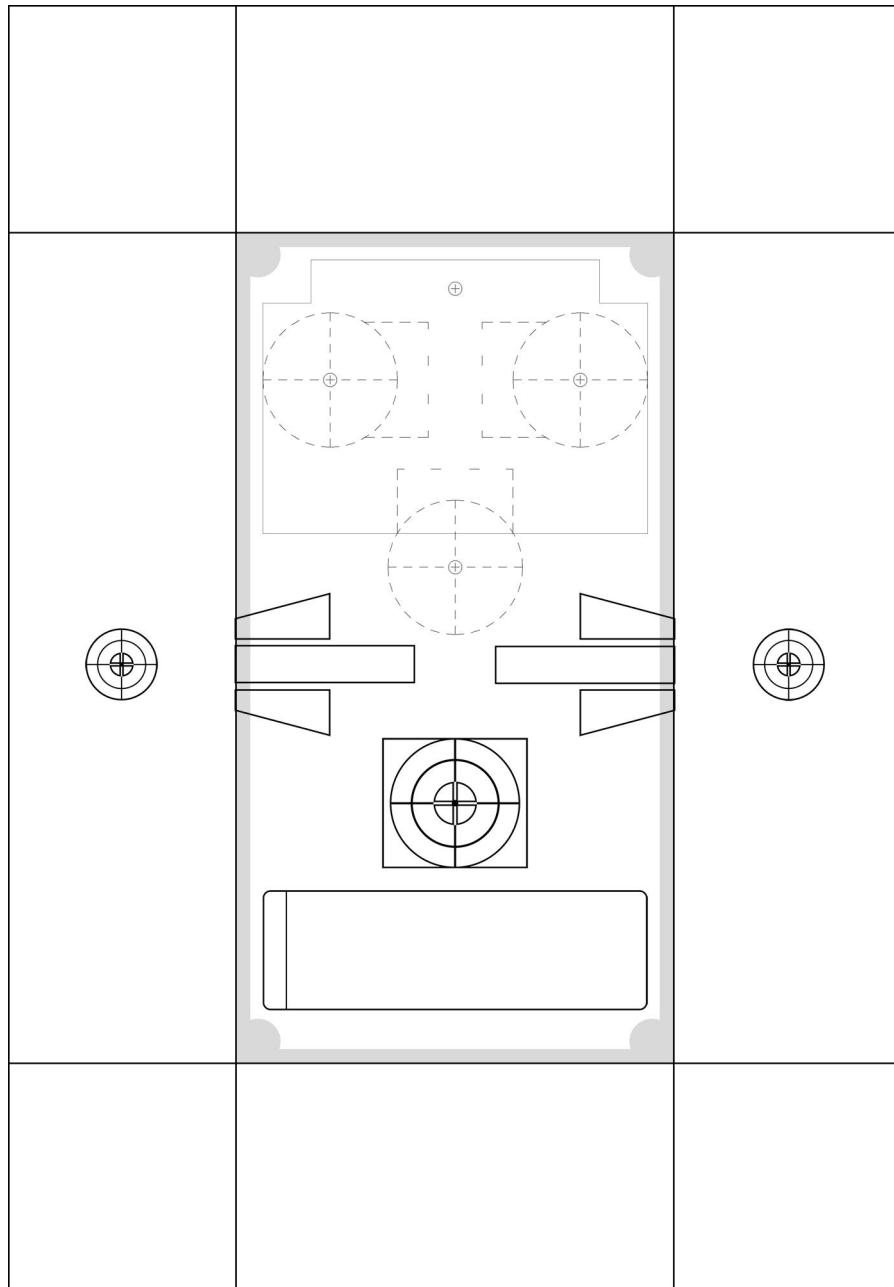


Of course, you do not have to do this on the PCB as illustrated. You could simply twist the two sets of leads on the two LEDs together, wire one twisted lead to the square pad of D3, and the other twisted leads to R3. This would be the approach to use if you want to mount the LEDs to your enclosure (their brightness changes as you play). The most important thing to do is make sure that the LEDs are back to back, i.e. the positive lead of one LED connects to the negative lead of the other LED.

Clear as mud, right?

1590B
Image size – 4.64" x 6.69"

This drilling diagram illustrates the hole locations for the PCB mounted pots and switch. You will need to determine where you want to add your indicator LED and the CLIP switch (if used).



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