Dot Fuzz: Build Document

Carcharias Effects
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1. About This Circuit

The **Dot Fuzz PCB** is my tribute to one of the coolest modern fuzz circuits I have ever tried, the **Pixel** by **Shoe Pedals**. When I first built my own, the joy was instantaneous. Regardless of what was feeding it—guitar or bass, active or passive pickups—the fun couldn't stop. It's also very interactive with your guitar's on-board pickups and volume settings. I added a looper afterwards, plugged it into a headphone amp, and let the good times roll. With only a few components, and a relatively simple schematic, I have always been surprised that the original is not a staple of fuzz-lovers' pedalboards, like the BMP or a Super-Fuzz. With a turn of any of the knobs to control the gating, lowpass, input, output, you get to dial in to sounds reminiscent of your favorite, decades-old 8-bit gaming consoles.

Make no mistake, however, that this thing absolutely crushes on bass. With the Lowpass knob rolling off the high-frequency response, while the Input gain increased to saturate the lowpass filter, you get into some really thick, fuzzy, subwoofer-blowing, square-wave craziness. Set the Pinch knob to control the amount of gating. And the Volume knob has plenty of output volume on tap to help you stand out in any mix.

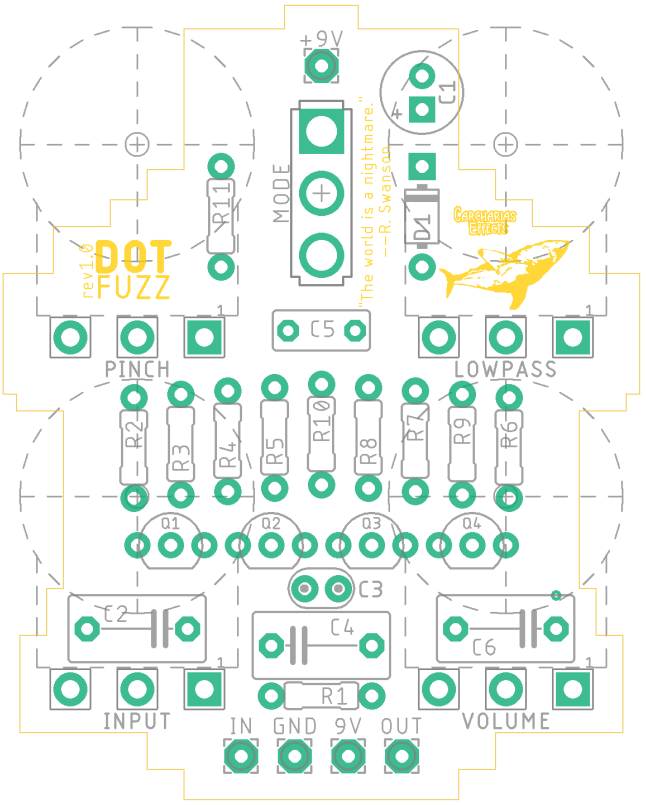
2. Controls

The following are the standard external controls for this pedal:

- **INPUT** — Turn clockwise to increase input gain
- **PINCH** — Turn clockwise to make a more aggressive gate
- **LOWPASS** — Turn clockwise to increase the amount of attenuation for the circuit's lowpass filter
- **VOLUME** — Turn clockwise to increase output volume
- **HARD/EASY** — Flip this switch to activate either different tonal mode

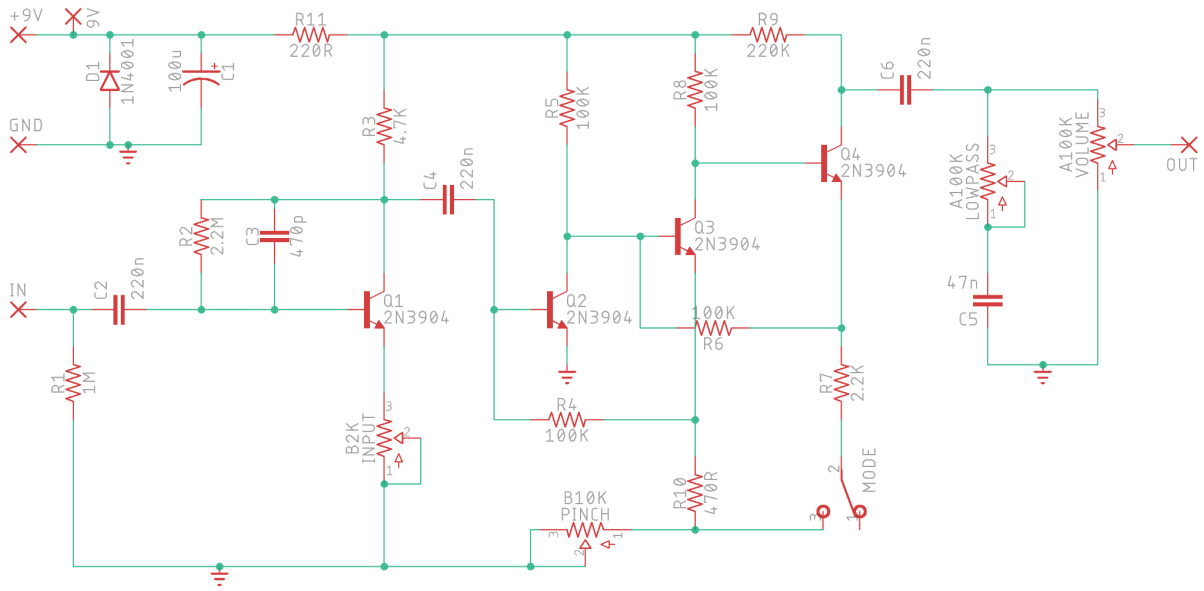
3. Circuit Board

The following is a screen capture of the printed circuit board (PCB):



4. Schematic

The following is a screen capture of this circuit's schematic, which can be used for reference when debugging:



5. Bill of Materials

You will need the following components to complete your build:

Qty	Value	Parts	Description
1	470p	C3	Capacitor - Ceramic
1	100u	C1	Capacitor - Electrolytic
3	220n	C2, C4, C6	Capacitor - Film
1	47n	C5	Capacitor - Film
1	1N4001	D1	Diode
2	A100K	LOWPASS, VOLUME	Potentiometer
1	B10K	PINCH	Potentiometer
1	B2K	INPUT	Potentiometer
4	100K	R4, R5, R6, R8	Resistor
1	1M	R1	Resistor
1	2.2K	R7	Resistor
1	2.2M	R2	Resistor
1	220K	R9	Resistor
1	220R	R11	Resistor
1	4.7K	R3	Resistor
1	470R	R10	Resistor
1	SPDT	MODE	SPDT Toggle Switch
4	2N3904	Q1, Q2, Q3, Q4	Transistor

6. Build Notes

The following are a collection of notes, comments, and tips about this circuit.

- Honestly, there's not a lot I would change in this circuit. So for what it's worth, one suggestion I would make is to socket the transistors, and try out any wild combination you might like. I have had excellent results with the 2N3904's as reported, but you could go nuts and throw in some higher-gain transistors (e.g., 2N2222A). Maybe even mix and match.

- In the case of the Dot, the more clockwise you turn the Lowpass knob, the bassier the circuit sounds (i.e., more effect caused by the lowpass filter). This is built-in to the circuit. However, in past builds, I've tried to reverse the directionality of the Lowpass pot, because my pro-audio experience dictates that rotating a tone knob clockwise gives you more treble, and counter-clockwise more bass. If you do choose to go this route, use a potentiometer with solder lugs (instead of the PCB-mount ones), and

use some short wire to invert the pin connections—lug 1 from the pot to pad 3 of the PCB, lug 2 to pad 2, and lug 3 to pad 1.

Terms of Use

The printed circuit board (PCB) discussed herein may be used for DIY purposes, such as personal builds or small commercial operations. This PCB may not be resold as part of a commercial kit. Resale from peer to peer is approved.

I do not claim any cloned circuit (whether partially or entirely) as the intellectual property of Carcharias Effects, nor am I in the business of intentionally violating any copyrights. Unless otherwise noted, many of the circuits available on carchariaseffects.com are based on schematics that represent the works of many hardworking people who came before me, who have designed many wondrous and unique electronics for musicians. I am just one guy with a hobby and love for these electronics, and designing and selling these PCB's is simply one way that I can ensure that my hobby continues to be self-sustaining.

Change Log

- **Rev1 (April 26, 2021):** First draft of this document, includes all standard features. This document corresponds to **PCB rev1.0**.

Contact

If you encounter any problems or issues with the PCB, or have any questions or comments, feel free to reach out to me anytime. I will try my best to be as responsive as possible. Here are the best ways to reach me:

- Instagram/Facebook (DM): **Carcharias.Effects**
- Email: contact@carchariaseffects.com
- Web: www.carchariaseffects.com/contact

I **love** seeing pictures of other peoples' builds, so feel free to tag me (**carcharias.effects**) on Instagram or Facebook.

Best of luck and happy building!