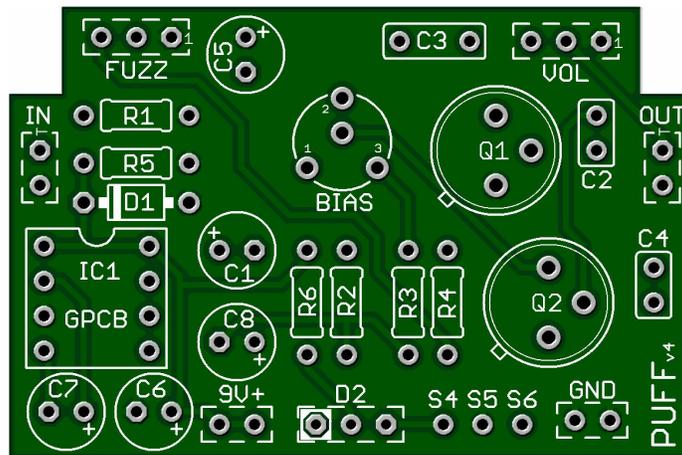


Pump'd Up Fuzz Face (PNP Fuzz Face uses a common Negative Ground Supply)

The Classic Fuzz Face with Modern Enhancements so it can be used with today's pedal boards while not affecting the Vintage Tone of the originals. Pump'd Up simply means you can use it in series with all other negative-ground pedals using a Negative Tip Supply. Feel free to try Germanium or Silicon.

Old style PNP Fuzz Pedals were positive-ground circuits that required a separate power supply from the rest of the effects in a chain or a battery. To overcome this a charge pump chip has been integrated to allow our board to be powered by the same source as all of your other effects. Our Charge Pump will have (0) effect on the classic tone!



Part	Value
R1	1M
R2	33K
R3	330-470 Ohm
R4	100K
R5	1M
D1	1N4001
TR1	20K-30k
C1	2u2
C2	220p
C3	10n

Part	Value
C4	220p
C5	22μ
C6	47μ
C7	10μ
C8	10μ
IC1	7660S
P1=FUZZ	B1K
P2=VOL	A500K
Q1	PNP—See Text
Q2	PNP—See Text

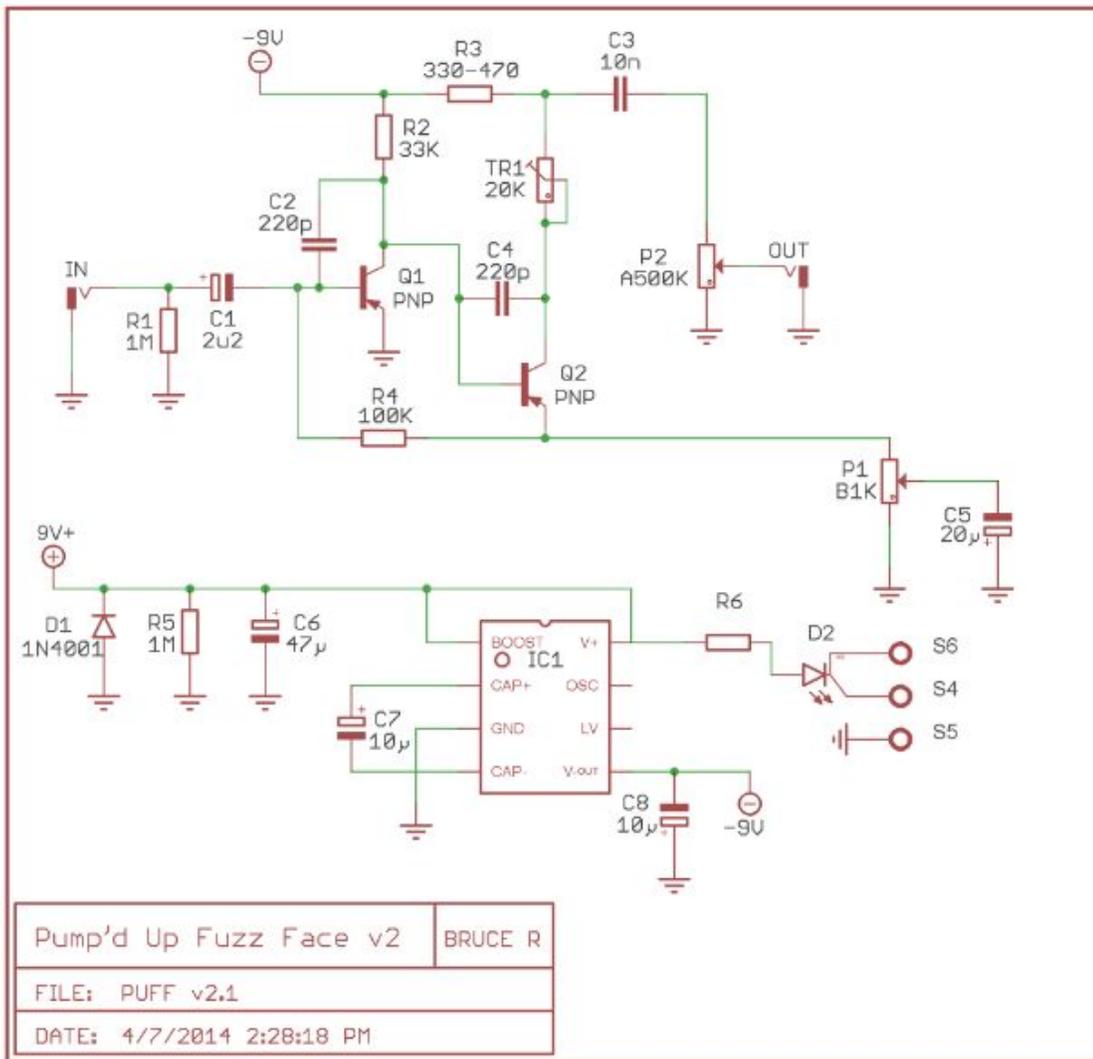
R6 is the CLR or Current Limiting Resistor when mounting the Status LED to the Main Board. Use 2k to 4k7.

R3 value is Ohms. Any value from 330R - 470R.

TR1 sets Bias of Collector to Q2. Any value from 20k - 50k will work. 50k would be a little harder to dial in that 20k.

Use lower gain transistors for the Bonamassa style Fuzz. Always verify pin out. See image on page 3.

Since we have incorporated a biasing trimmer TR1 will work excellent with transistors in the 30 hFE range and up

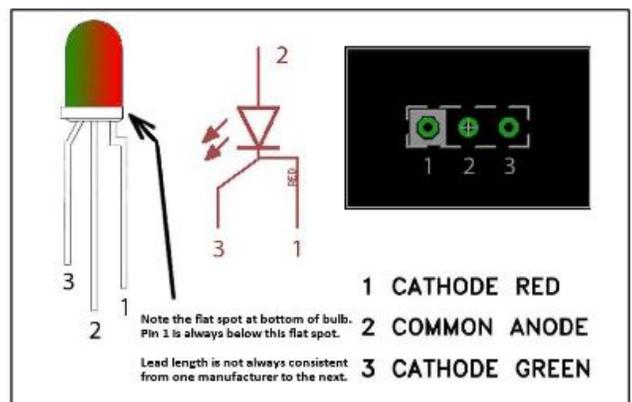


STATUS LED

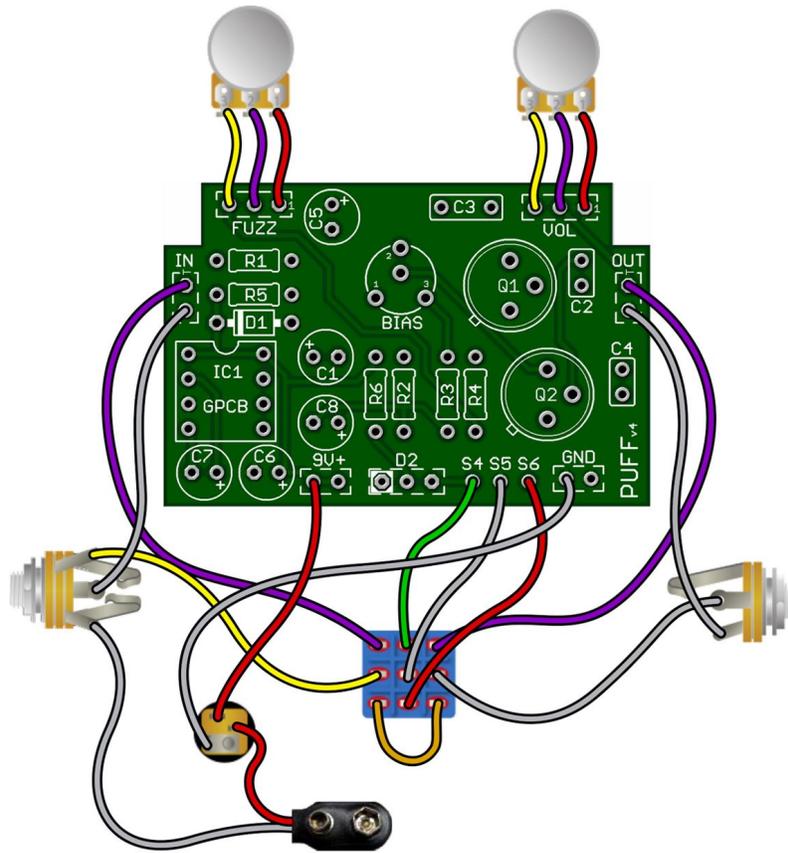
D2 is a common anode bi-color LED. The diagram at right shows the pin-out, schematic symbol and pad connection for a common anode LED. The pin-out for the bi-color LED is typically (but not always) as follows:

1st Color Cathode	Is on the "flat" side of the LED (see graphic); 90 degree bend in the lead
Common Anode	Middle lead
2nd Color Cathode	45 degree bend in the lead

The lead 1 pad on the circuit board is marked with a white box.



When connected correctly, the LED will light red when power is applied and the circuit is in bypass mode. The LED will light green when in effects mode. If you wish to use a standard LED, connect the anode to the middle pad and the cathode to the right pad to show the circuit in effects mode. If you use a 3PDT wiring board that includes an LED, you can omit this LED and R6. R6 is the LED's Current Limiting Resistor (CLR). If you use a different LED, you may want to change this value to adjust LED brightness (3k3 typically works well with most single-color LEDs).

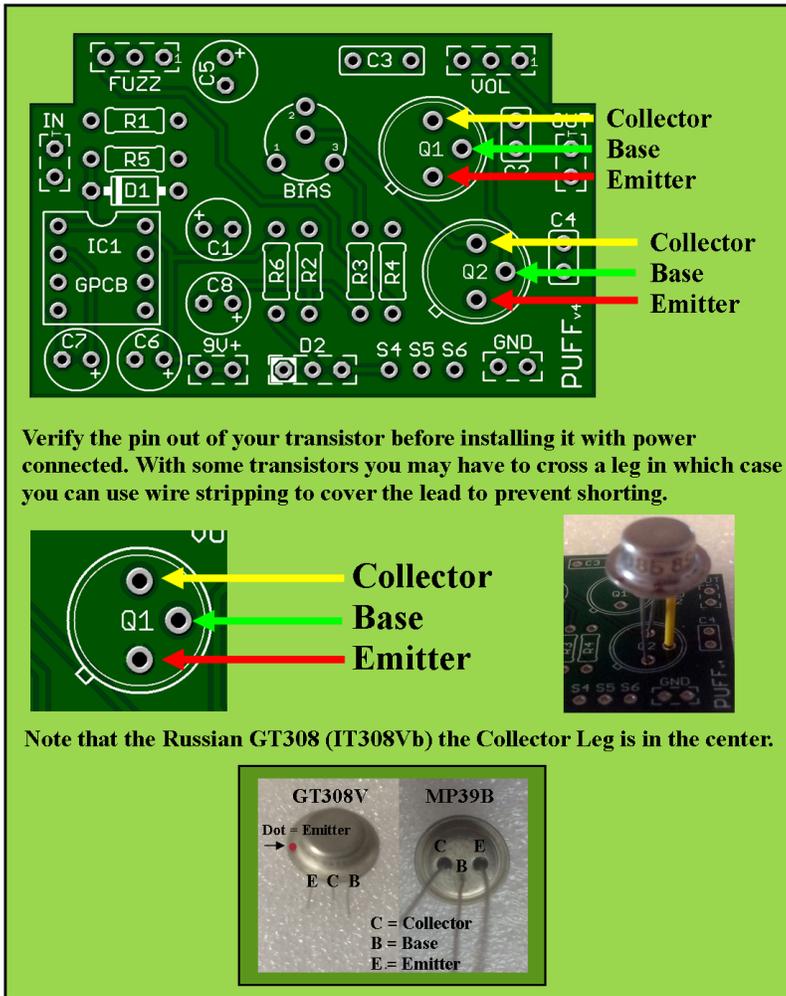


Notes about this build:

- Positive-Ground circuits cannot share a power adapter with negative ground pedals. A charge pump has been added to overcome this limitation. This is ideal for pedal boards that use daisy-chain power which contain multiple effects within a single enclosure. **Our Charge Pump will have (0) effect on the classic tone!**
- Use a charge pump with the 7660/1044 pin layout. We prefer the 7660S (TC7660SCPA). While all 1044 chips seem to have the boost feature, on the 7660 chips, the “S” designation after the number indicates that it has the frequency boost feature, whereas the original 7660 (without an “S”) chips did not.
- The original Arbiter Fuzz Face pedals were equipped with NKT275, AC128, or SFT363E transistors, depending on what date the unit was manufactured. None of these are readily available today. These are a few of the types commonly used. **2n404**, 2n404A, 2n1305, 2n1307, 2n1309. Also try Silicon PNP Diodes (**Hendrix did.**)
- Transistors vary greatly regarding hFE gain values, leakage, etc. Some transistors may generate high-end hiss, which is not desirable. Our board includes **2 small capacitors** which were not in the original circuit, **C2** and **C4**. These act as a filter for hiss but do not affect the guitar signal or tone. You may also build without the hiss filters by simply not populating the board. If used we suggest recommended values of anything between 150-470pf.
- This circuit also contains modern features such as a dual power and ground pads for easy wiring of combo builds, reverse-polarity protection diode, and 2 pull-down resistors that discharge capacitors when the circuit is not in use. There is also a biasing trimmer resistor that is described in more detail in the next section.

Biasing - Mandatory for great tone.

In order to have this circuit sound like a Fuzz Face, you must correctly bias the circuit. This board uses a 20K-50K trimmer designed to help you adjust the bias perfectly to adjust for variances in transistors. To bias, adjust the trimmer until DMM reads negative 4.5-7.0 VDC on the **Collector of Q2**. The variance in voltage will affect your preferred tone.



For more information (hyperlinks embedded within):

- [Technology of the Fuzz Face, by RG Keen.](#)
- See our [YouTube Video Demo](#) covering our **Pump'd Up Series** here: <https://bit.ly/2A1Sgh>

Be sure to read our [Guides Page](#) in the Forum for more detailed Guides, Charts and Tutorials.

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Special thanks to: RG Keen, for his analysis of this circuit on geofex.com



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