BCFUZZ

FX TYPE: Octave Fuzz
Based on the Octane2™
Enclosure Size: 1590B
“Softie” compatibility: Softie3

Overview

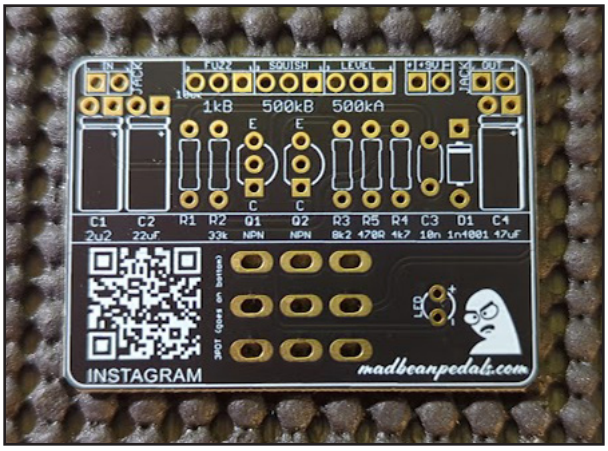
The **Business Card Fuzz (BCFUZZ)** is a simple NPN style Fuzz Face. It has one added control (Squish) for highly compressed, bumblebee fuzz tones. It’s designed for Si NPN transistors. Germanium types will also work (if spec’d appropriately).

It can be built by anyone, even a first time builder!

Controls

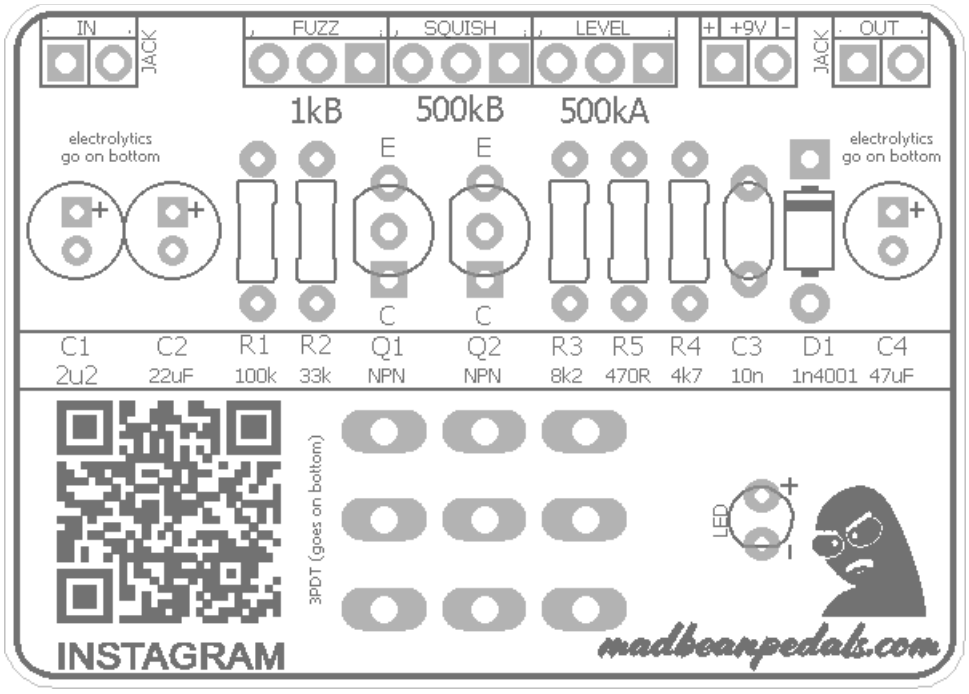
- **FUZZ, LEVEL -** Standard controls.
- **SQUISH** - FULL CCW is a stock Fuzz Face. As you turn up the SQUISH control, it adds resistance to the feedback path between Q2 and Q1. This makes the fuzz compress even further. At the highest setting, the fuzz will squish down into bumble fuzz tones.

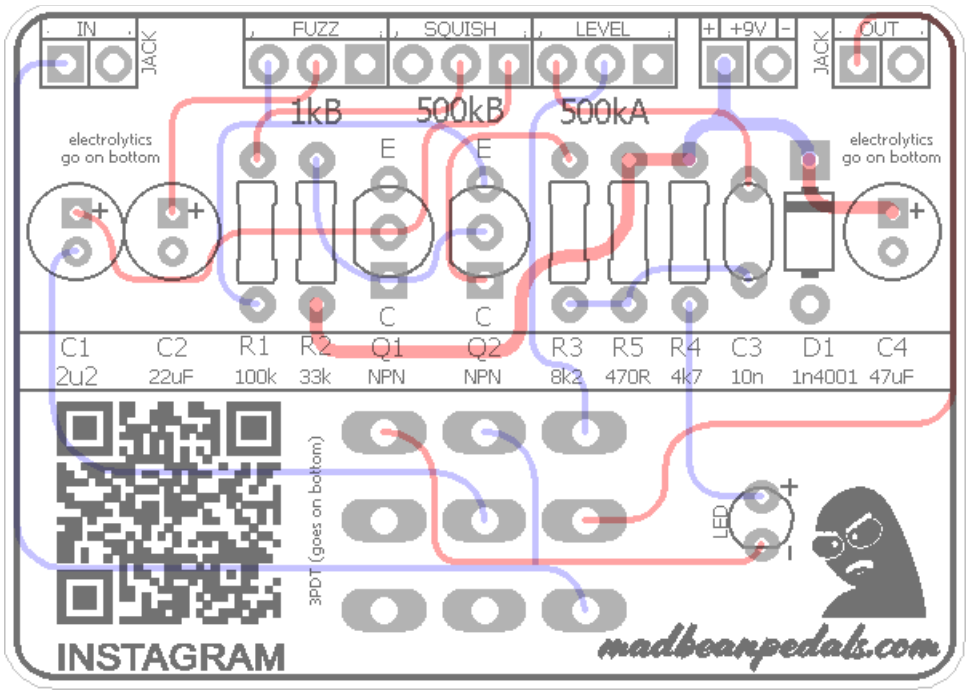
NOTE: This document was used for the Giveaway version in Feb. 2023. You can use this document to build the ver.0 that’s being offered for sale. The ver.0 was actually the first run of these I did but there was a misprint of the 100k value under R1. Also, I used flat oriented electrolytic caps. Other than that it’s the same build.



“ver.0”

Technical assistance for your build(s) is available via the madbeanpedals forum. Please go there rather than emailing me for assistance on builds. This is because (1) I’m not always available to respond via email in a timely and continuous manner, and (2) posting technical problems and solutions in the forum creates a record from which other members may benefit.





The electrolytic caps, LED and 3PDT are soldered to the *bottom* of the PCB. You might consider *soldering the transistors and 10n cap on the bottom, as well*. I had to remove the lock washer on my 3PDT to get enough clearance to close the lid fully (with the transistors on top). Putting them on the bottom ensures an easy fit. Just make sure the transistors are in the right pin orientation!

Resistors		Type	Rating	
R1	100k	Metal / Carbon Film	1/4W	
R2	33k	Metal / Carbon Film	1/4W	
R3	8k2	Metal / Carbon Film	1/4W	https://smallbear-electronics.mybigcommerce.com/resistors/
R4	4k7	Metal / Carbon Film	1/4W	
R5	470R	Metal / Carbon Film	1/4W	
Caps		**Type**	**Rating**	
C1	2u2	Electrolytic	16v min.	https://smallbear-electronics.mybigcommerce.com/electrolytic-radial-16v-1-f-100-f/
C2	22uF	Electrolytic	16v min.	https://smallbear-electronics.mybigcommerce.com/electrolytic-radial-16v-1-f-100-f/
C3	10n	Film	16v min.	https://smallbear-electronics.mybigcommerce.com/topmay-tmc05-001-f-1-f/
C4	47uF	Electrolytic	16v min.	https://smallbear-electronics.mybigcommerce.com/electrolytic-radial-16v-1-f-100-f/
Diodes		**Type**	**Rating**	
D1	1n4001		1W	https://smallbear-electronics.mybigcommerce.com/diode-1n4001/
LED	LED	Diffused	5mm	https://smallbear-electronics.mybigcommerce.com/led-t-1-3-4-5mm-diffused/
Transistors		**Type**	**Rating**	
Q1	NPN	Si or Germanium		https://smallbear-electronics.mybigcommerce.com/bipolar-si/
Q2	NPN	Si or Germanium		
Switch		**Type**	**Rating**	
BYP	3PDT	PCB Pin of lug		https://smallbear-electronics.mybigcommerce.com/gorva-mechano-premium-3pdt-solder-terminal/
Jacks		**Type**	**Rating**	
IN/OUT	TS	Mono	1/4”	https://smallbear-electronics.mybigcommerce.com/1-4-in-mono-nys229/
DC	TRS	Plastic	2.1mm	https://smallbear-electronics.mybigcommerce.com/dc-power-jack-all-plastic-unswitched-2-1-mm/
Pots		**Type**	**Rating**	
FUZZ	1kB	Solder Lug Pot	16mm	https://smallbear-electronics.mybigcommerce.com/alpha-single-gang-16mm-solder-terms-linear-audio-taper/
SQUISH	500kB	Solder Lug Pot	16mm	
LEVEL	500kA	Solder Lug Pot	16mm	
ENCLOSURE				
		1590B		https://smallbear-electronics.mybigcommerce.com/b-g/

- For silicon transistors, any pair will work well so long as you stick to the following specs: HFE under 300 and Q1 a bit lower gain than Q2 (although this is not strict). Some silicon transistor types could be 2n3904, BC108, BC109, 2n3565, 2n2369. I built mine with 2n3904 with HFE in the 180's. They sound great in this circuit!

- If you want to use germanium NPN, then Q1 should be Hfe 60-80, Q2 Hfe 100-130 and leakage under 300 uA for both.

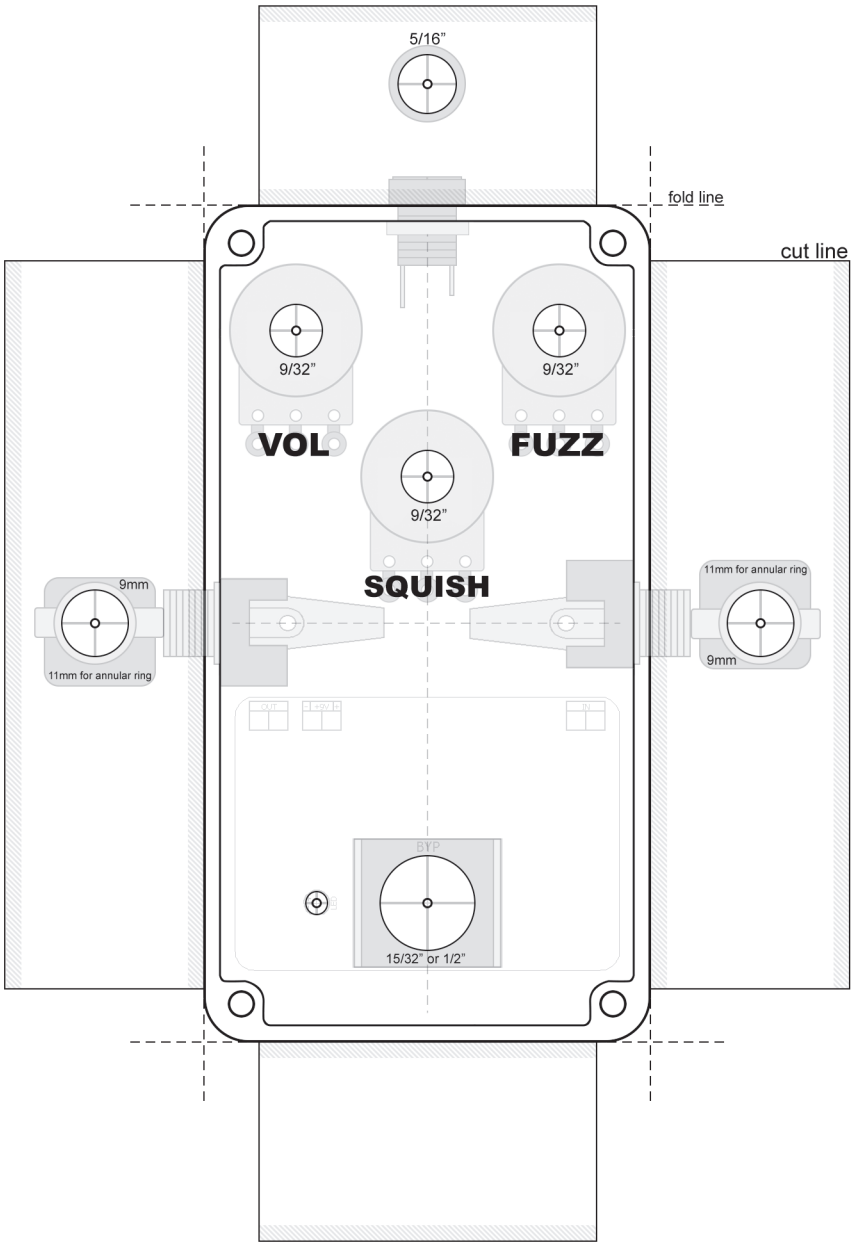
MODS

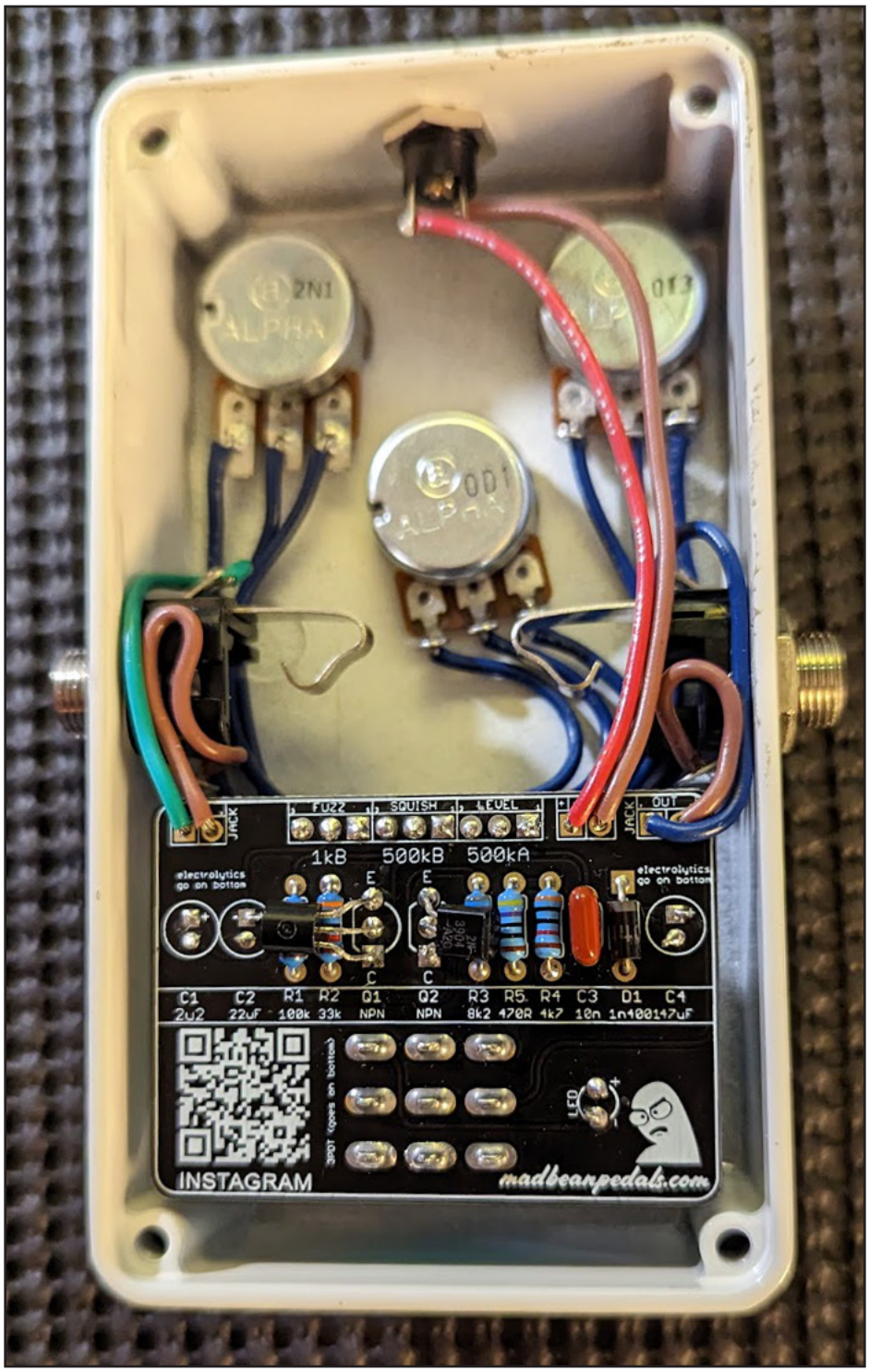
More fuzz - change fuzz pot to 2kB.
More squish - change Squish to 1MB.
More volume - change 470R resistor to 680R or 820R.

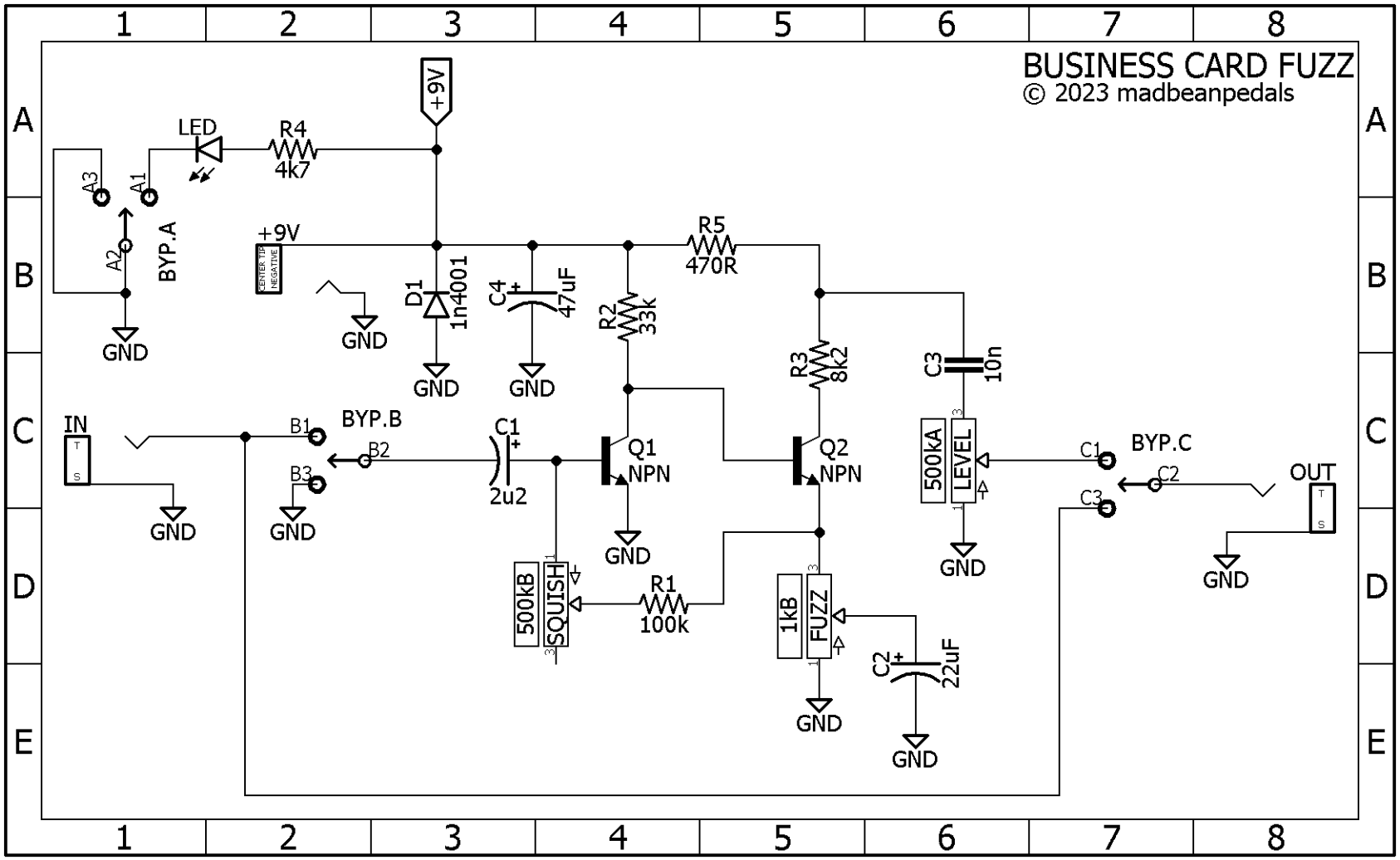
Q1	NPN
C	1.43
B	0.64
E	0
Q2	**NPN**
C	6.19 - 2.7
B	1.42
E	0.78

- 9.5vDC One Spot
- Current Draw: 1mA
  VOL, FUZZ @ 50%
- SQUISH @ 0
- The second reading on the collector of Q2 is with the SQUISH control all the way up.

Note: *Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.*




JACK
FUZZ
SQUISH
LEVEL
JACK
OUT
1kB
500kB
500kA
electrolytics go on bottom
electrolytics go on bottom
C1 2u2
C2 22uF
R1 100k
R2 33k
Q1 NPN
Q2 NPN
R3 8k2
R5 470R
R4 4k7
C3 10n
D1 1n4001
C4 47uF
INSTAGRAM
madbeanpedals.com


BUSINESS CARD FUZZ
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+9V
LED
R4
4k7
A3
A1
A2
BYP.A
GND
+9V
CENTER TIP NEGATIVE
GND
D1
1n4001
C4
47uF
GND
GND
R2
33k
R5
470R
R3
8k2
C3
10n
IN
B1
BYP.B
B2
B3
C1
2u2
Q1
NPN
Q2
NPN
500kA
LEVEL
C1
BYP.C
C2
C3
OUT
GND
GND
GND
GND
GND
500kB
SQUISH
R1
100k
1kB
FUZZ
C2
22uF
GND
GND