



VFE STANDOUT

FX TYPE: Mid Booster

© 2018 [VFE](#) and [madbeanpedals](#)

From the VFE Website

Is your amp too muddy, dark, bright, tinny, boomy, etc? Do your single coils get fizzy & shrill with drive pedals, and your humbuckers become flabby with your favorite fuzz? Does it feel impossible to get your guitar's tone to feel just right in a band mix? The Standout is a precision mid booster designed to solve all these common problems. Use it to dial in the exact amount of bass cut (HPF) and treble cut (LPF) to sculpt your tone and push an amp or another pedal into its unique sweet spot. This is a must-have tone tool for taming high gain amps, especially in the studio.

- True bypass with buffered bypass option via internal switch
- More EQ range & less noise than the original Focus pedal
- Dry blend for dialing in a less pronounced "mid hump"
- Filters can be 6dB or 12dB for more extreme EQ cuts

INPUT IMPEDANCE: 1.8M-ohm

CURRENT DRAW: ~15ma off, ~45ma on @ 9V, ~25ma off, ~55ma on @ 18V

Downloadable PDF docs:

Parts List* - <https://www.dropbox.com/s/grjn4avn7c4au1k/Parts%20Matrix.pdf> (includes links to purchase components)

Schematic - https://www.dropbox.com/s/9qtcisztc4jfvto/standout_schematic.png

PCB layout & mod sheet - <https://www.dropbox.com/s/o1msnjtrqlv39hv/Standout%20layout.pdf>

Link to buy pre-drilled 1590B2 enclosure from Pedal Parts Plus - <https://www.pedalpartsuplus.com/ProductDetails.asp?ProductCode=1590B2VFE>

The drill template for the Hammond 1590B2 enclosure is quite precise. Because of this, we recommend getting a pre-drilled enclosure from the link above. Here is the link to a hand-drawn list of measurements - <https://www.dropbox.com/s/fyiq00oc-16qqzuk/10-Hole%201590B2.pdf>

Peter's How-To Guide for building the Pinball, Dragon and Standout:

<https://www.youtube.com/watch?v=Z5uwB45FI8>

Reverb demo of the Pinball, Dragon and Standout:

https://www.youtube.com/watch?v=QVI_Z43amII

Mike Herman's demo of the Standout:

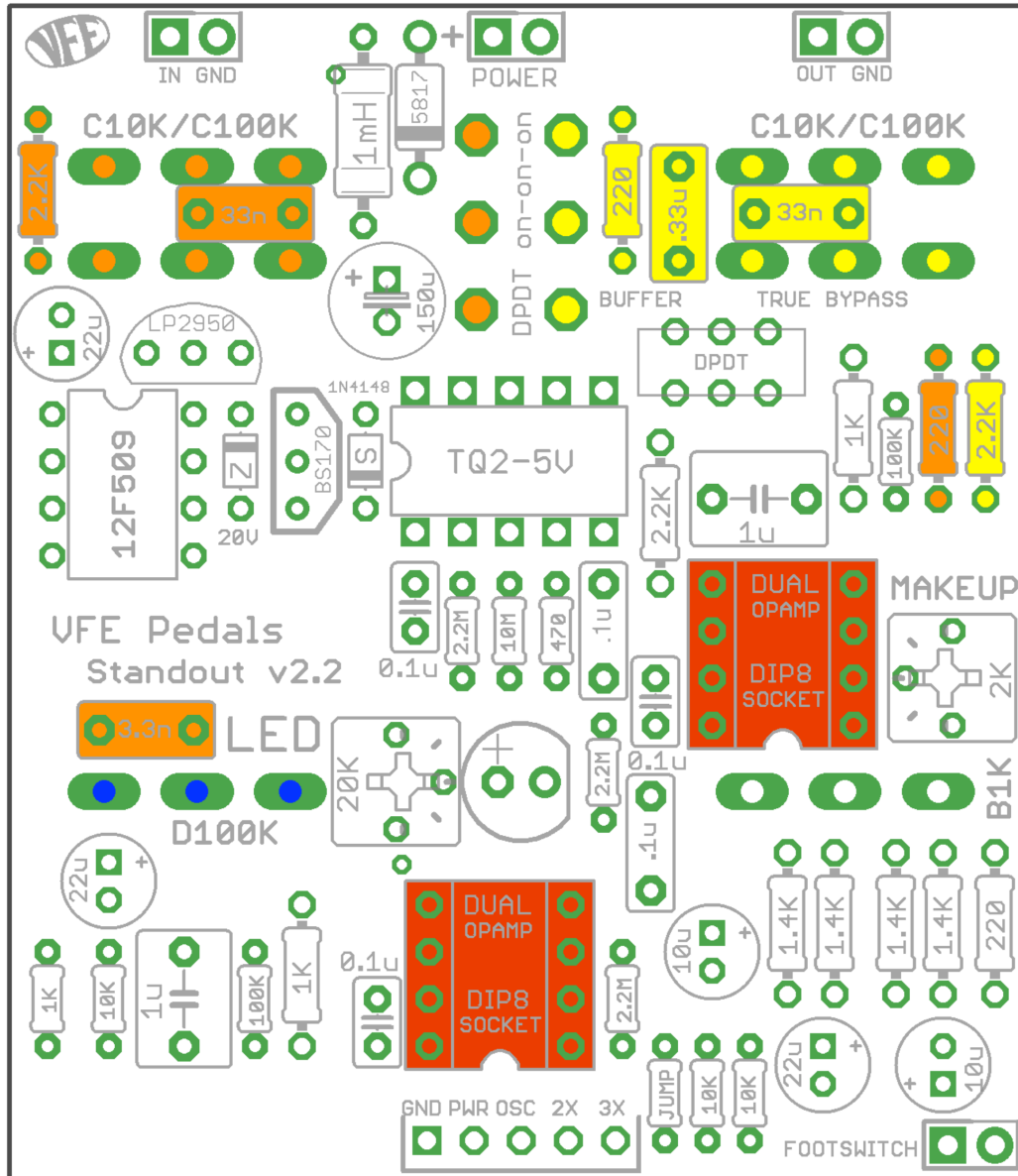
<https://www.youtube.com/watch?v=K9mnxZuC2Vw>

Terms of Use: You are free to use purchased **Standout** circuit boards for both DIY and small commercial operations. You may not offer **Standout** PCBs for resale or as part of a "kit" in a commercial fashion. Peer to peer re-sale is, of course, okay.



Standout PCB Layout

For optimal results, install components in the exact order listed.



- 1 x 12F509
- 1 x DPDT slide
- 1 x 1N4148
- 1 x 470 1/8W
- 1 x 1K 1/8W
- 3 x 10K 1/8W
- 2 x 100K 1/8W
- 3 x 2.2M 1/8W
- 1 x Jumper
- 1 x 10M 1/8W
- 1 x 20V Zener
- 3 x 220 1/4W
- 2 x 1K 1/4W
- 4 x 1.43K 1/4W
- 3 x 2.2K 1/4W
- 3 x 0.1u yellow
- 1 x 1N5817
- 1 x 1mH
- 2 x JRC4580
- 1 x DPDT relay
- 1 x 2K 3362P
- 1 x 20K 3362P
- 1 x 3.3n red
- 2 x 33nF 5mm
- 2 x 0.1uF 5mm
- 1 x 0.33uF 5mm
- 2 x 1uF 5mm
- 1 x LP2950
- 1 x BS170
- 2 x 10uF bipolar
- 3 x 22uF
- 1 x 150uF

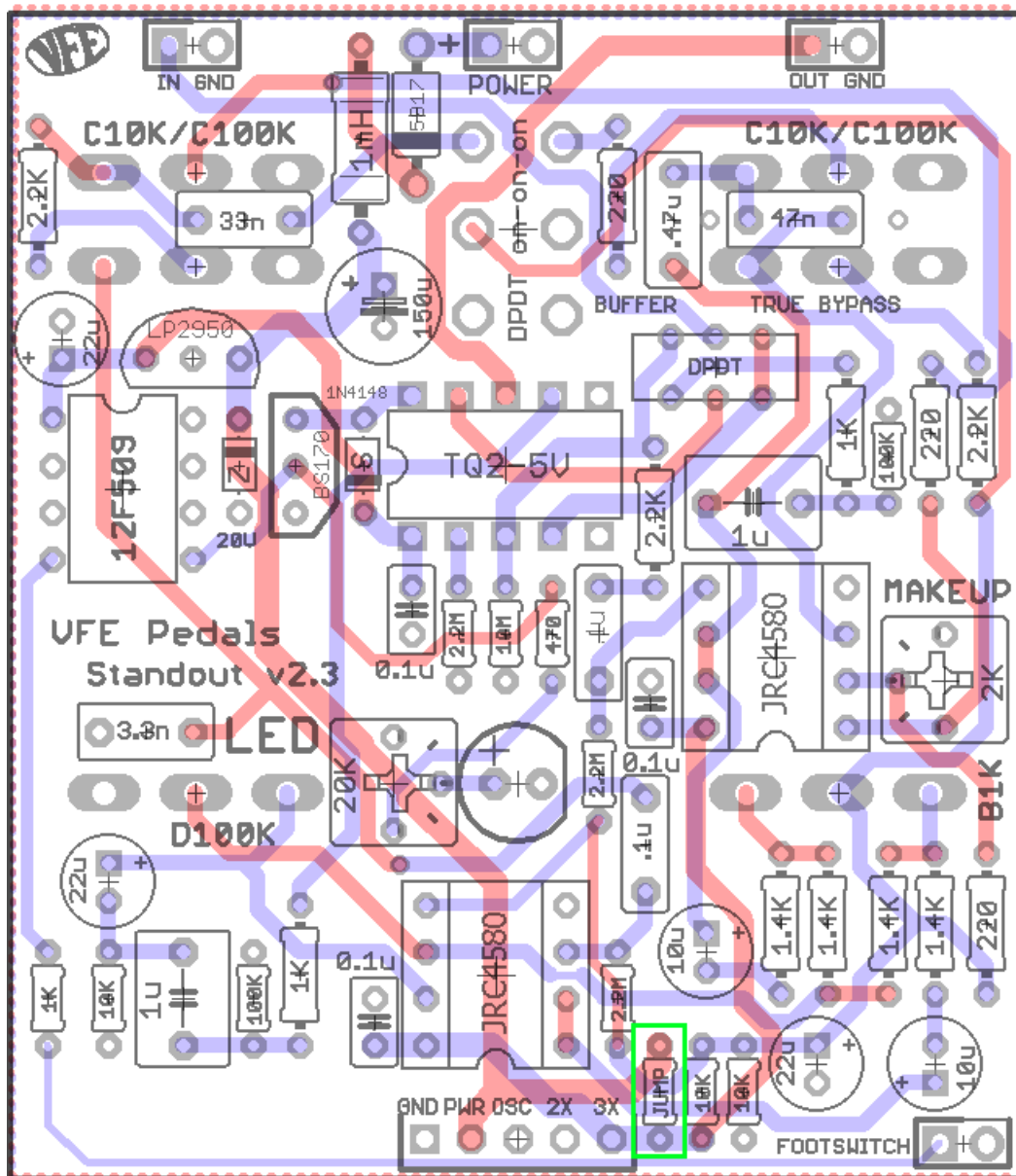
Red - JRC4580 op amp, but you can experiment with any dual op amp in DIP8 packaging

Orange - These components set the frequency range of the LPF

Yellow - These components set the frequency range of the HPF

Blue - These components set the output volume range

Dimensions: 2.17" W x 2.49" H



Note: solder a jumper in the green box labeled “jump”.

Shopping List

Shopping List					
QTY	Value	Type	Rating	Primary Source	Alternate Source
Resistors					
3	220R	Metal / Carbon Film	1/4W	Mouser	
2	1k	Metal / Carbon Film	1/4W	Mouser	
4	1k43	Metal / Carbon Film	1/4W	Mouser	
3	2k2	Metal / Carbon Film	1/4W	Mouser	
1	470R	Metal / Carbon Film	1/8W	Mouser	
1	1k	Metal / Carbon Film	1/8W	Mouser	
3	10k	Metal / Carbon Film	1/8W	Mouser	
2	100k	Metal / Carbon Film	1/8W	Mouser	
3	2M2	Metal / Carbon Film	1/8W	Mouser	
1	10M	Metal / Carbon Film	1/8W	Mouser	
Caps					
3	100n	MLCC	2.5mm	Mouser	
1	3n3	Film	5mm	Mouser	Smallbear
2	33n	Film	5mm	Mouser	Smallbear
2	100n	Film	5mm	Mouser	Smallbear
1	330n	Film	5mm	Mouser	Smallbear
2	1uF	Film	5mm	Mouser	Smallbear
2	10uF BP	Bi-Polar	2.5mm	Mouser	
3	22uF	Electrolytic	2.5mm	Mouser	
1	150uF	Electrolytic	2.5mm	Mouser	
Diodes					
1	1N4148	or, 1n914		Mouser	Smallbear
1	1N5817			Mouser	Smallbear
1	20v	Zener		Mouser	
1	LED	*your choice color	3mm	Smallbear	
Transistors / Regulators					
1	LP2950		5v	Mouser	
1	BS170			Mouser	Smallbear
Inductors					
1	1mH	Inductor		Mouser	
Switches					
1	DPDT	Non-Latching Relay		Mouser	
1	DPDT	Slide		Mouser	
1	DPDT	On/On/On		Smallbear	
Op-Amps					
2	4580DD			Mouser	
Pots					
1	20k	Bourns 3362p		Mouser	
1	2k	Bourns 3362p		Mouser	
1	100kA	PCB Right Angle	16mm	Smallbear	
1	1kB	PCB Right Angle	16mm	Smallbear	
Hardware					
2	Jacks	Mono		Smallbear	LoveMySwitches
1	Jacks	DC		Smallbear	LoveMySwitches
1	Foot-Switch	Momentary		LoveMySwitches	Smallbear
1	Enclosure	1590B2		PedalPartsPlus - PreDrilled	PedalPartsPlus - Undrilled
4	Knobs	*your choice		Smallbear	LoveMySwitches
Included w/ Purchase					
2	C10k/C100k	Custom PCB Dual-Gang	16mm		
1	12F509	Micro_Controller	DIP8		

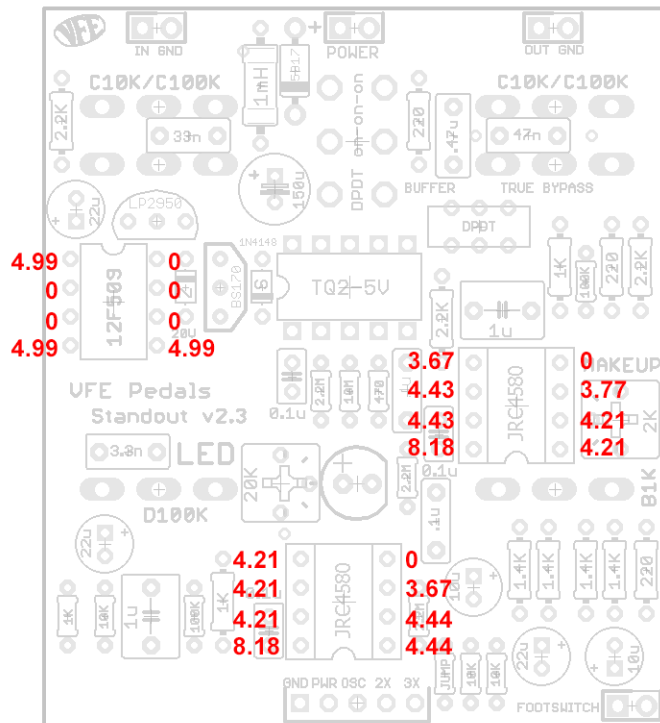
red indicates see important notes

BOM Notes

- You can use 1k5 in place of 1k43.
- You should be able to use an LM78L05 in place of the LP2950.
- The relay for the Dragon, Pinball and Standout is the non-latching version of the same relay used in the other VFE projects. Be sure to use the included Mouser link to get the right part!
- Peter uses enclosed mono jacks on his builds, but I recommend using the Lumberg style linked. The reason is the pre-drilled enclosures from PPP do not seem to take this into account, and enclosed jacks will not fit.
- Peter also uses an expensive momentary switch that has a soft click (the smallbear link). I used the much cheaper ones from LoveMySwitches and had no problem with them.
- The 100kD is a custom pot which is not available for the Standout. It's simply a 100kA with 10% tolerance instead of 20%. Use a 100kA instead. I actually used a 50kA in my build as this had more than enough boost function for me.
- PedalPartsPlus does offer pre-drilled 1590B2 boxes for these projects. They are a bit more expensive but worth it, IMO. They are bang on for the pots/switches layout he uses on these boards. Just remember to use the Lumberg mono jacks. Also, the hole for the LED on the PPP enclosures is overdrilled. A 3mm will fall through so you'll need to solder it in place so it sits correctly. You can use a 5mm, but the hole is actually too small to fit through! A small inconvenience, but not a big deal.

Pre-made cart for all the Mouser items listed in the Primary Source column:
<https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=c49677ed16>

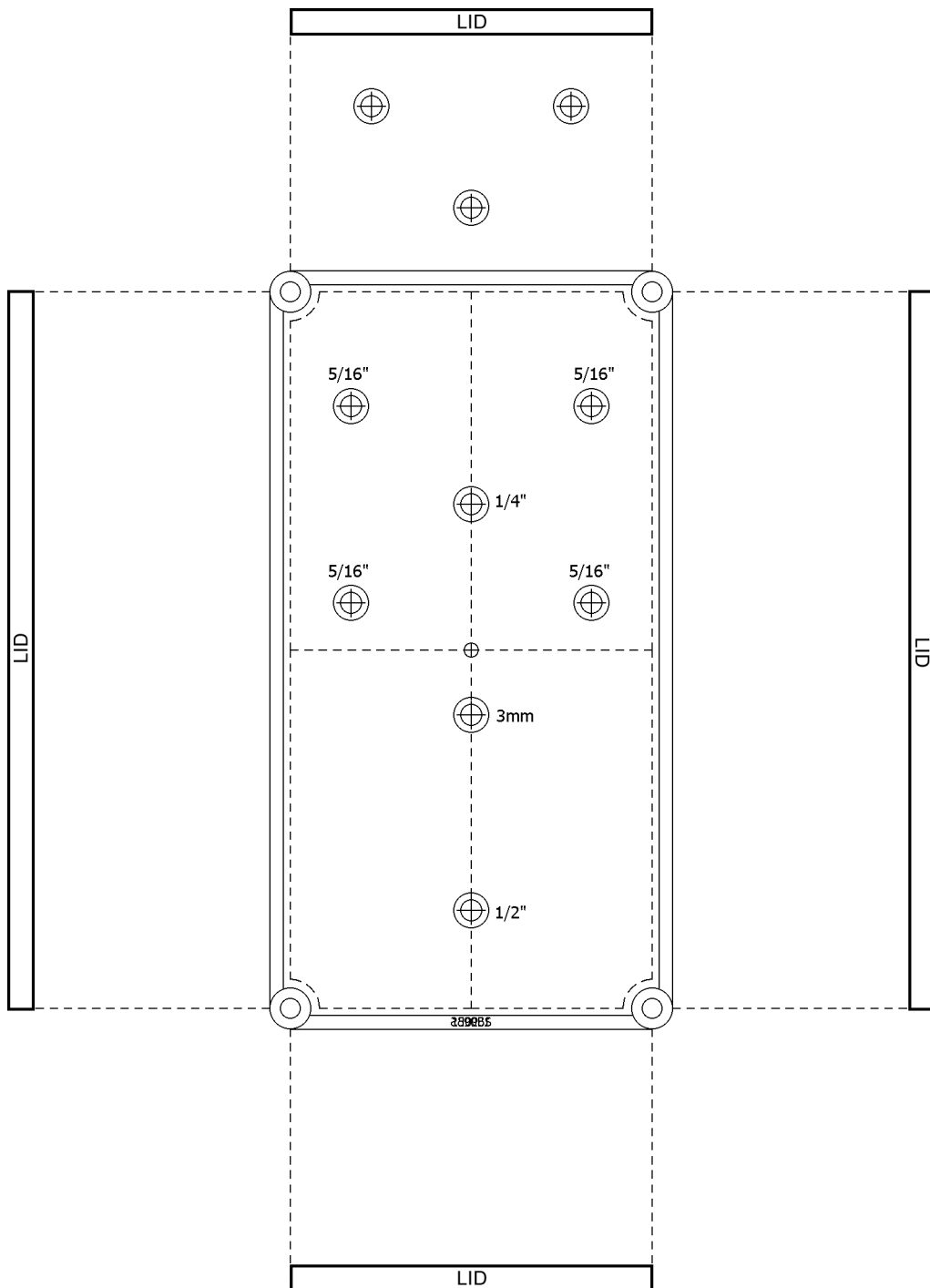
Voltages



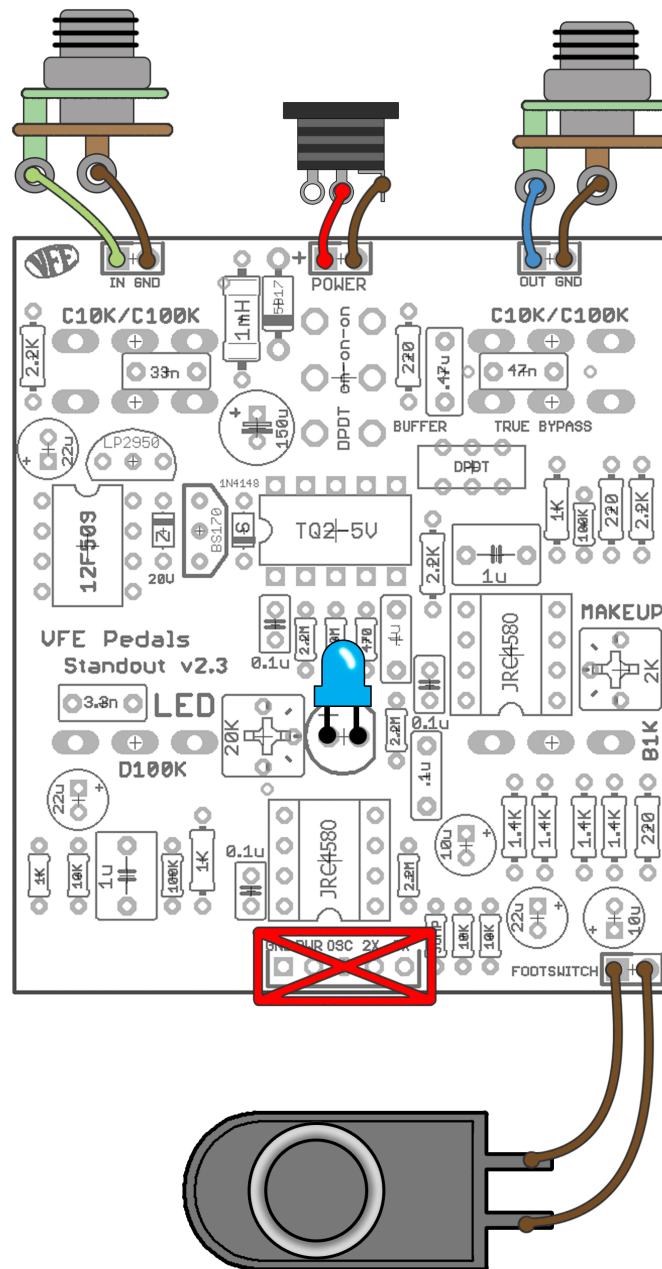
9.42vDC One Spot. Voltages taken from “pedal on” state.

1590B2 Drill Guide

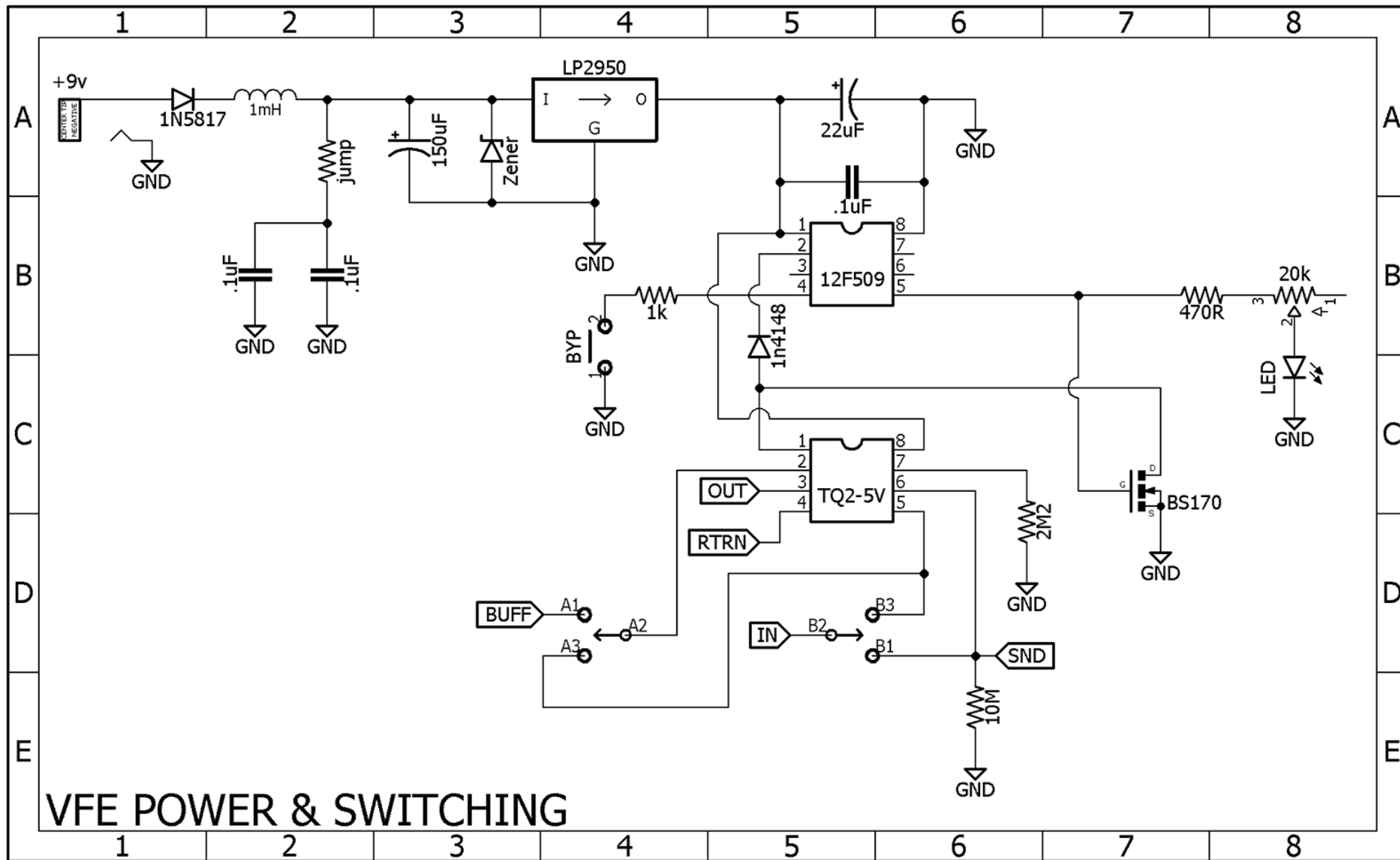
5.3" W x 7.34" H



Wiring

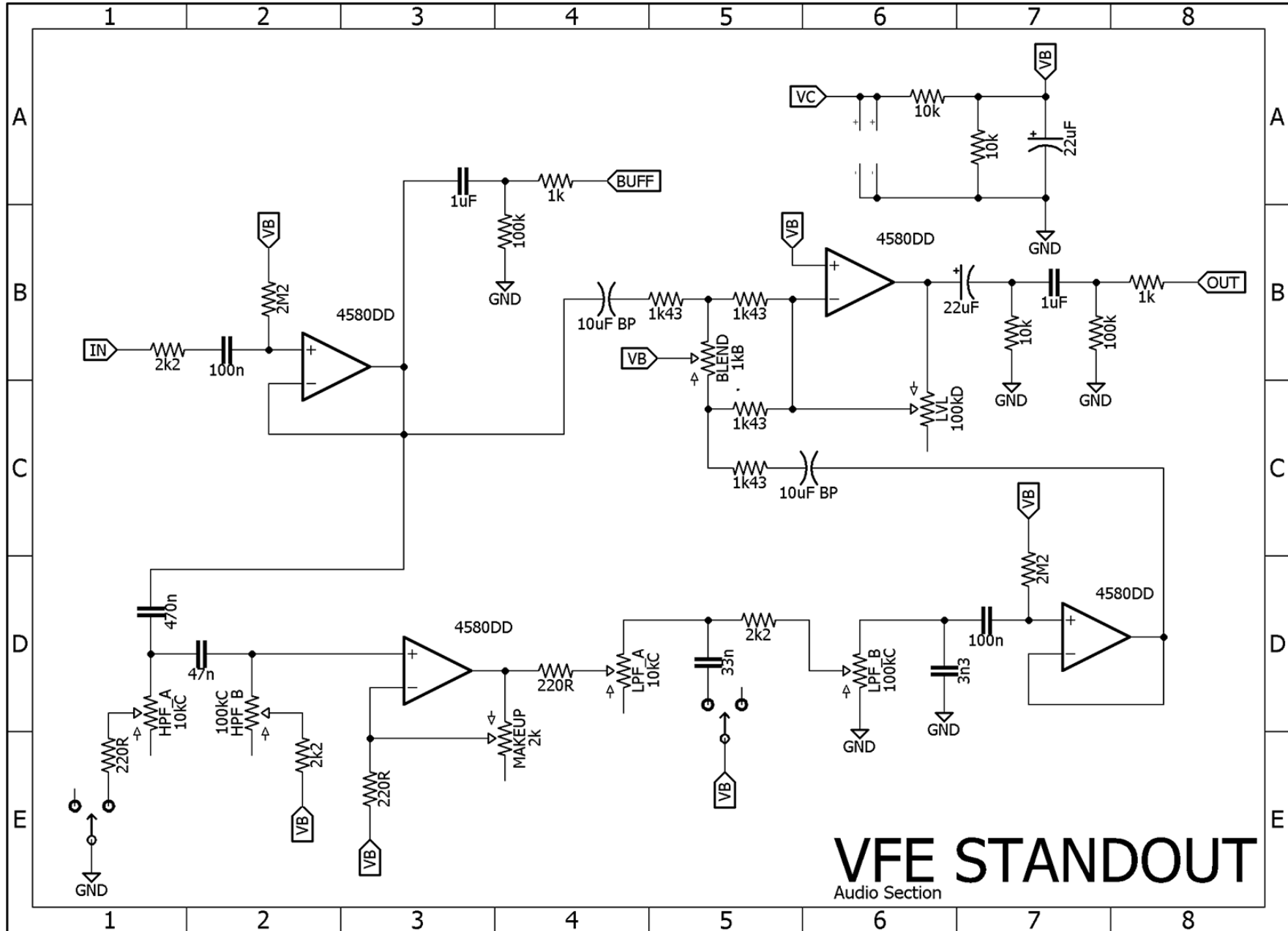


All the pads in the red "x" area should be left unconnected.



Power and Switching are the same for the Pinball, Dragon and Standout.

Schematic



Build

