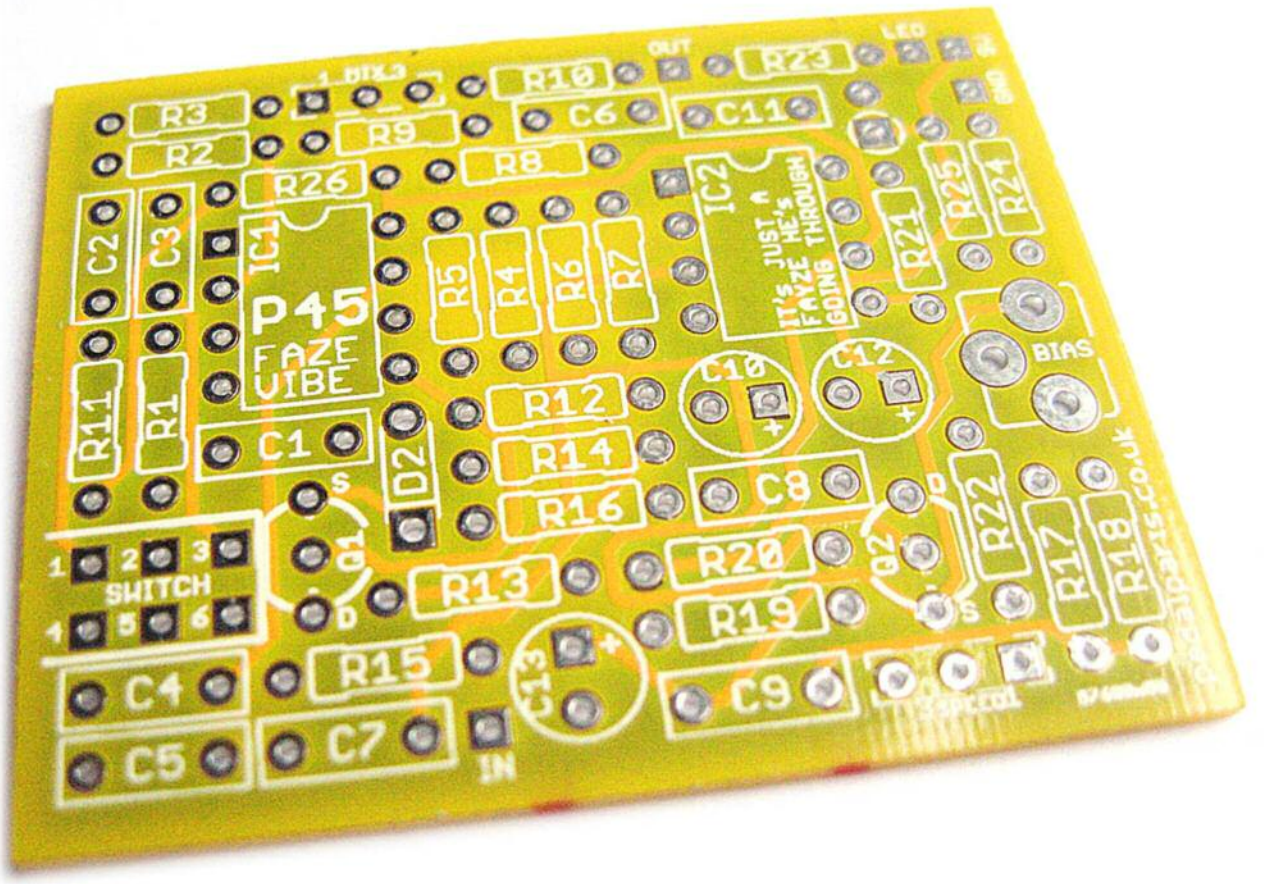

P45

Phase 45 with optional Univibe mode

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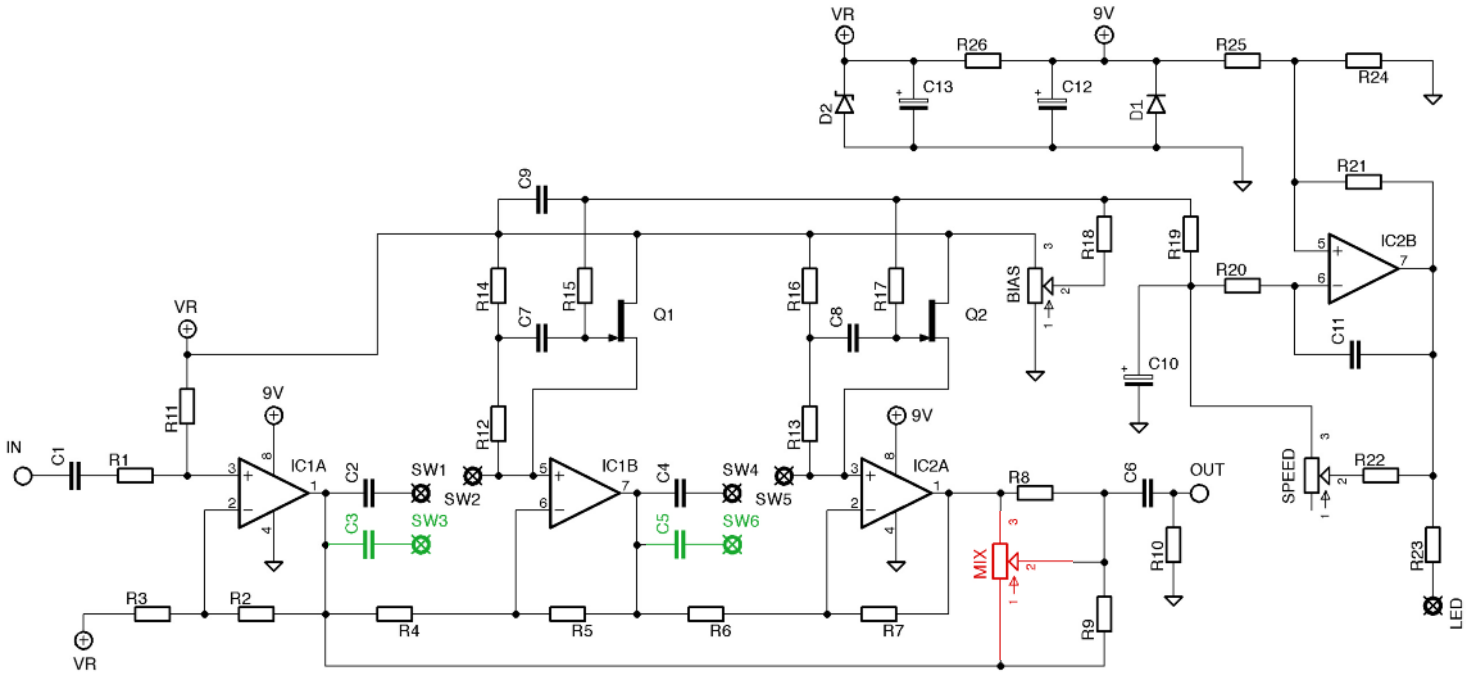
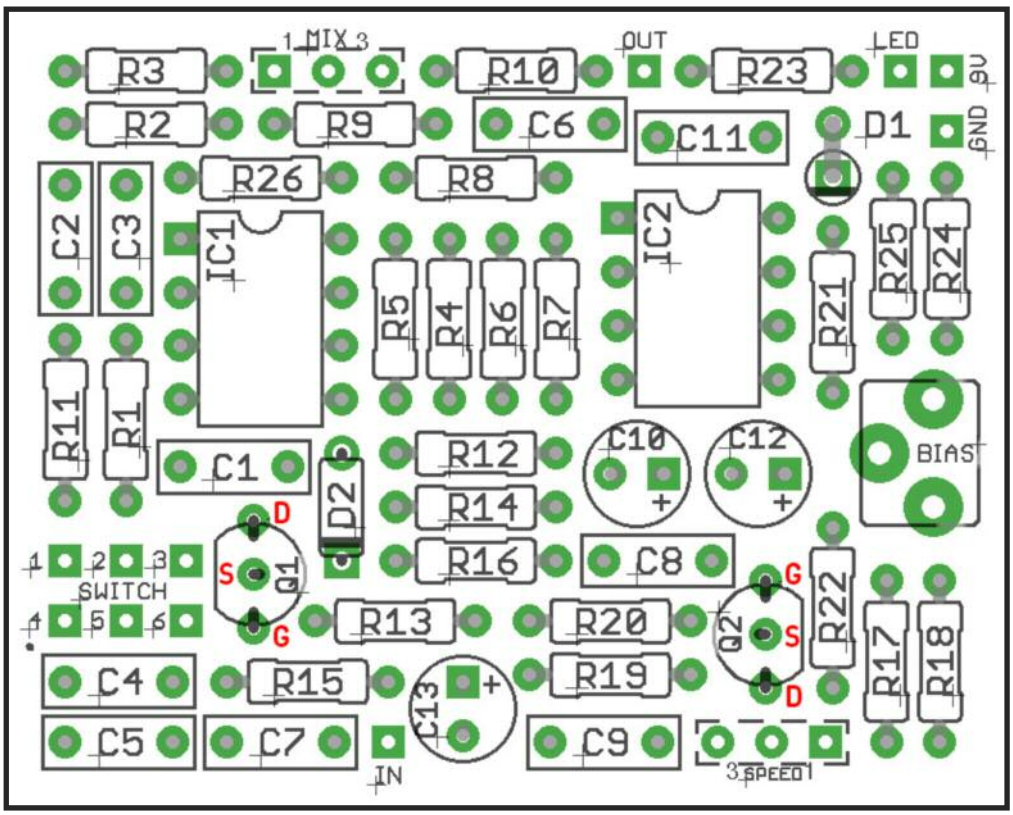
Schematic + Layout



MIX pot is optional, giving a range of effects from Phase to pitch-shifting vibrato-type sound. If including this pot omit R8 and R9.

C3 and C5, connected via SW3 and SW6, will give a Univibe-type effect. If you don't want this, omit C3 and C5, omit the switch, and put jumper wires between SWITCH pads 1+2, and 4+5.

Ignore D and S markings on PCB. They are as shown here >



Switch 1-6 should connect to the DPDT with the lugs in the same configuration as the pads. Nice and simple.

BOM

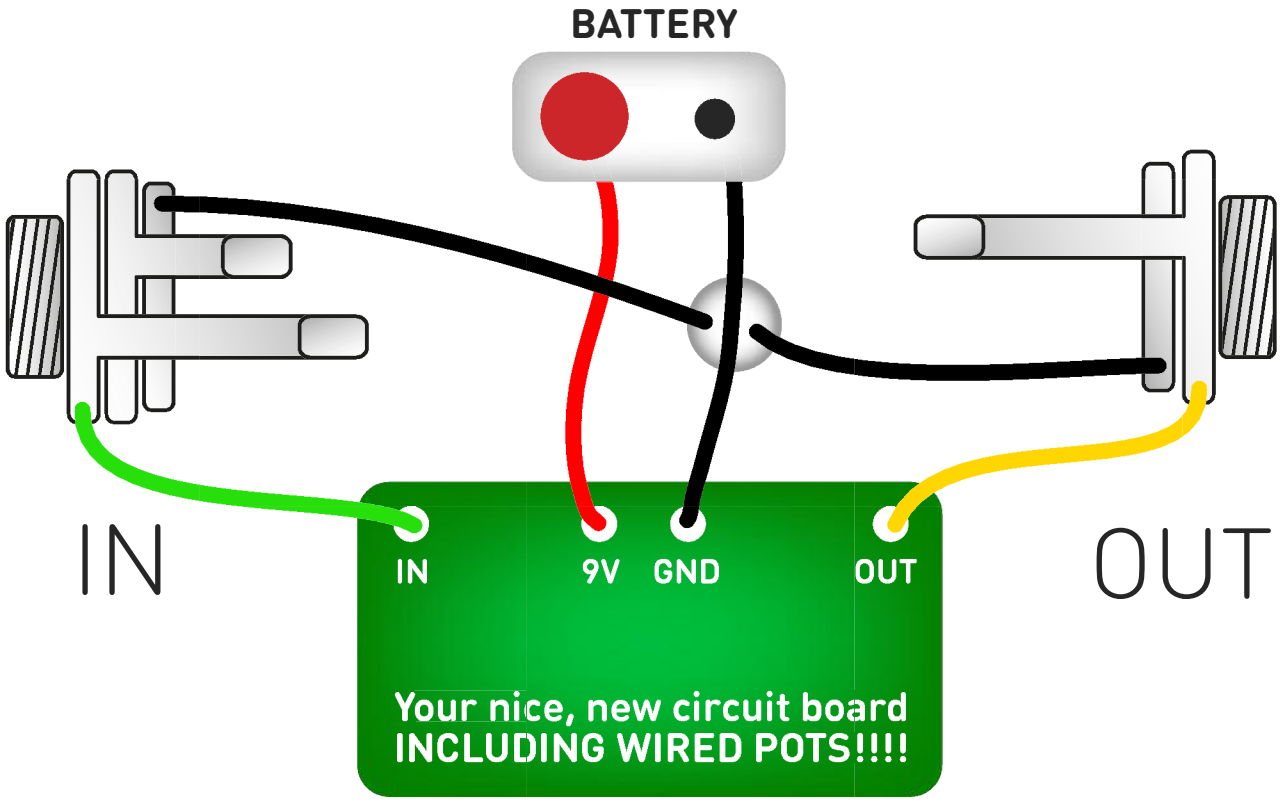
R1	10K
R2	10K
R3	20K
R4	10K
R5	10K
R6	10K
R7	10K
R8	10K
R9	10K
R10	150K
R11	470K
R12	10K
R13	10K
R14	10K
R15	470K
R16	10K
R17	470K
R18	1M
R19	3M9
R20	150K
R21	150K
R22	7K5
R23	2K2
R24	150K
R25	150K
R26	10K

C1	10n
C2	47n
C3	10n
C4	47n
C5	100n
C6	47n
C7	10n
C8	10n
C9	47n
C10	10u
C11	10n
C12	10u
C13	10u
D1	1N4001
D2	5.1v zener
Q1,2	Matched FETS (2N5457, 2N5458, 2N5952 etc)
IC1,2	TL072
MIX	20-22KB
SPEED	500KC (B will do, but C has a better feel)
BIAS	220-250K Trim

For more info on FET-matching, see R.G. Keen's article here:
http://www.geofex.com/article_folders/fetmatch/fetmatch.htm

Ensure your chosen FET is orientated correctly on the PCB - Drain and Source pads are marked, and some FETs may not correspond with the shape shown on the board. For instance 2N5952 should actually be reversed compared to the image shown on the PCB silkscreen. 2N5457 are good to go as shown.

Test the board!

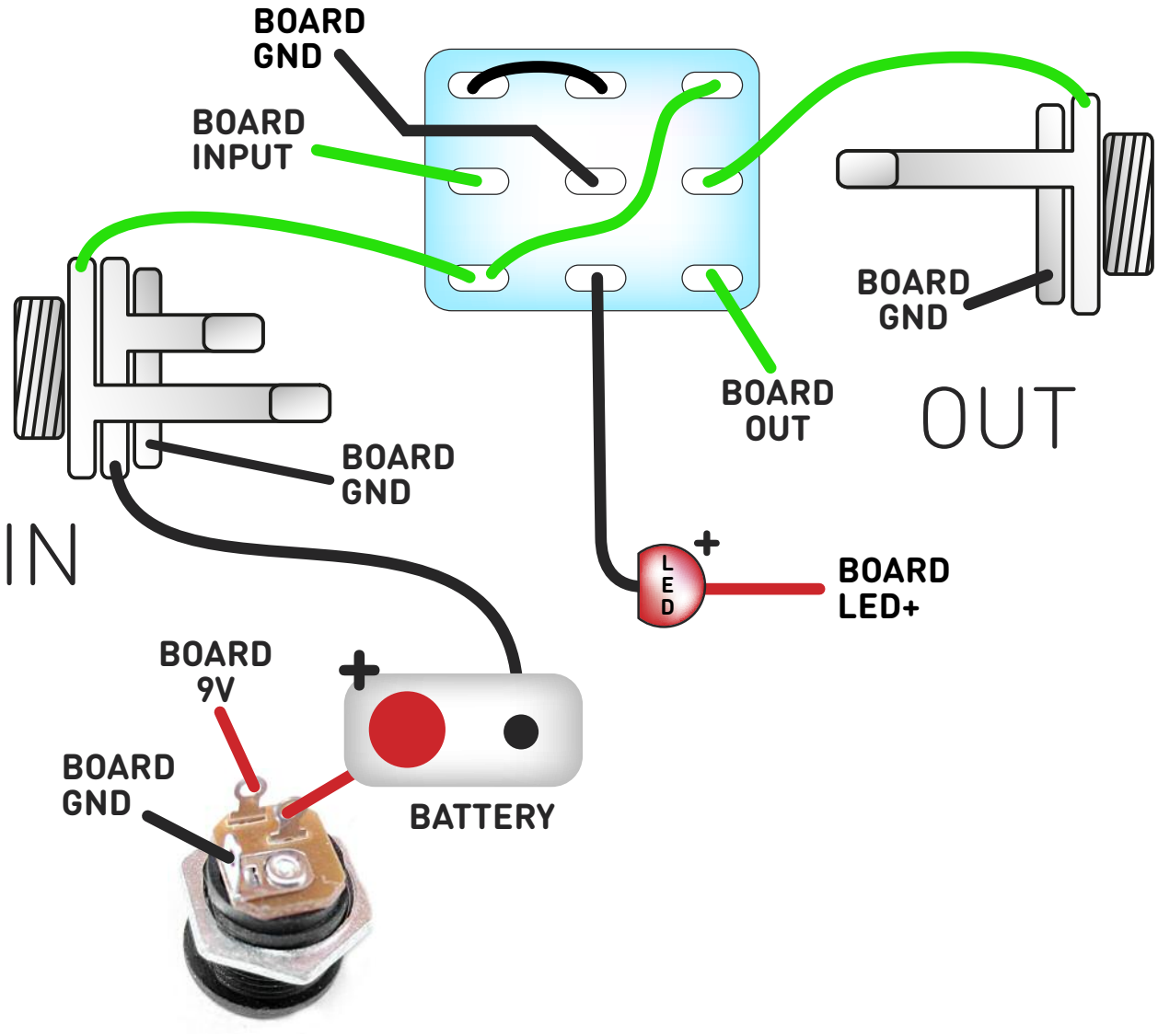


Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

If it works, crack on and do your switch wiring. If not... aw man. At least you know the problem is with the circuit. Find out why, get it working, THEN worry about the switch etc.

Wire it up



Wiring shown above will disconnect the battery when you remove the jack plug from the input, and also when a DC plug is inserted.

The Board GND connections don't all have to directly attach to the board. You can run a couple of wires from the DC connector, one to the board, another to the IN jack, then daisy chain that over to the OUT jack.

It doesn't matter how they all connect, as long as they do.

This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal. Now... GO GET FAZED!

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