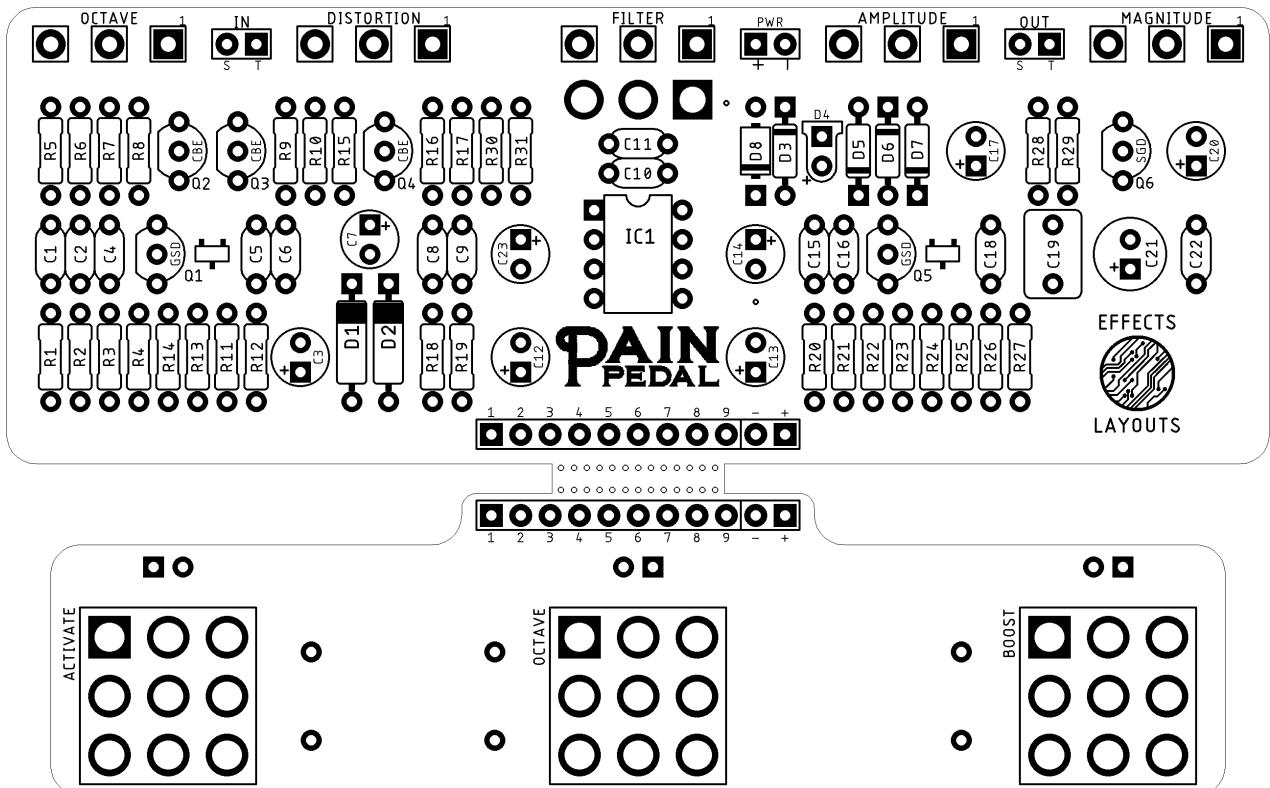


PAIN PEDAL

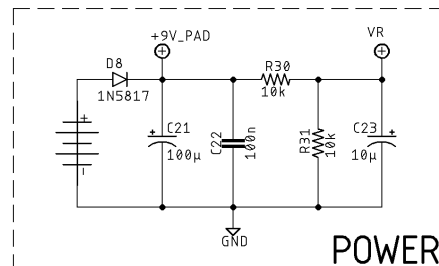
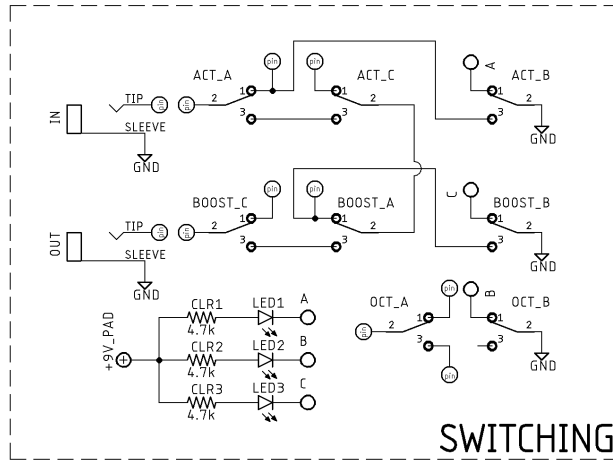
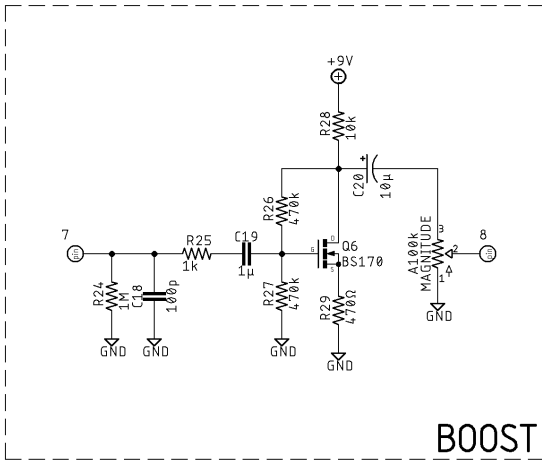
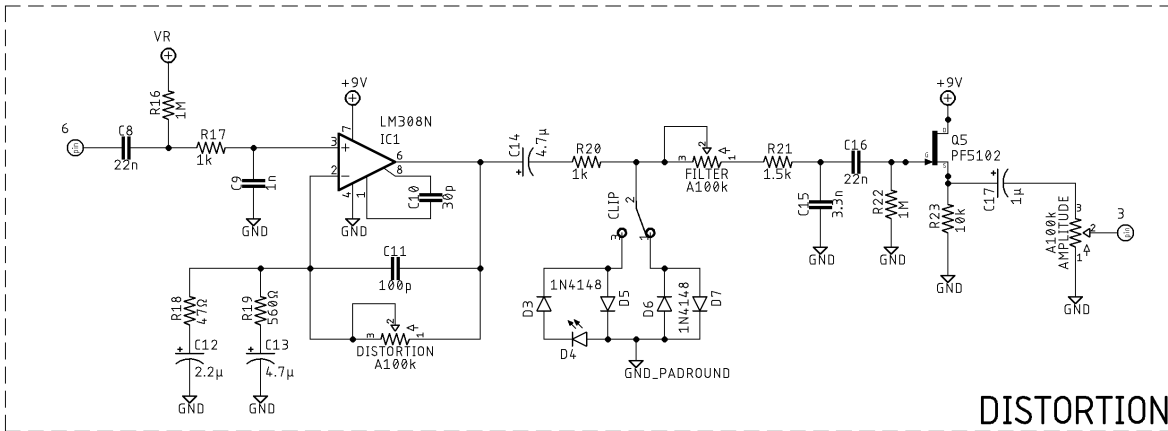
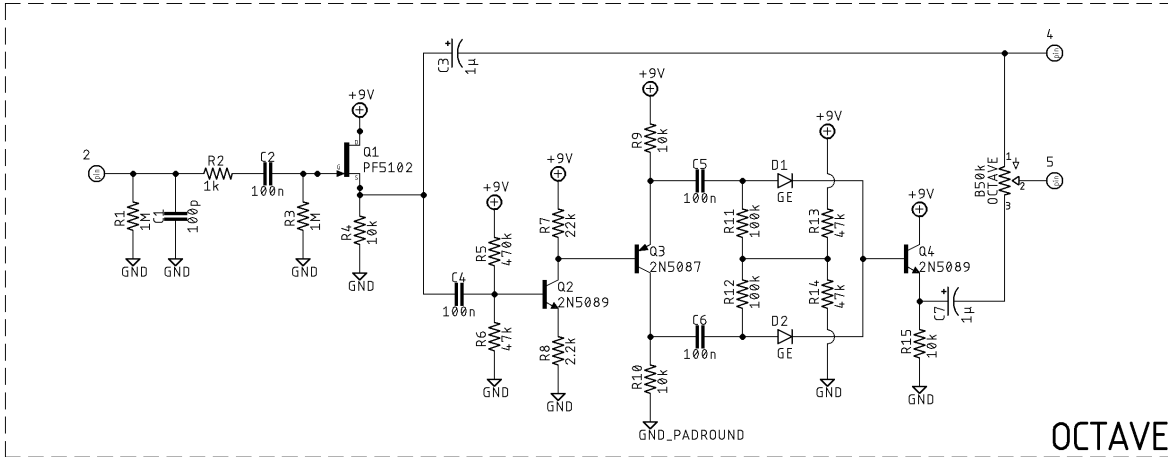
DESCRIPTION

Life is Pain and the PAIN PEDAL is based on the EQD Life Pedal. If you've been living under a rock and don't know, this circuit is a mashup of a RAT with a blend-able octave up (Green Ringer/Tentacle) and a MOSFET booster. The PAIN PEDAL allows you to build this with the option to put the octave up on a footswitch. It also comes with a daughter board for your footswitches to keep off-board wiring to a minimum.

LAYOUT



SCHEMATIC



PAIN PEDAL

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BOM

Resistors

R1	1M
R2	1k
R3	1M
R4	10k
R5	470k
R6	47k
R7	22k
R8	2.2k
R9	10k
R10	10k
R11	100k
R12	100k
R13	47k
R14	47k
R15	10k
R16	1M
R17	1k
R18	47Ω
R19	560Ω
R20	1k
R21	1.5k
R22	1M
R23	10k
R24	1M
R25	1k
R26	470k
R27	470k
R28	10k
R29	470Ω
R30	10k
R31	10k
CLR1	4.7k
CLR2	4.7k
CLR3	4.7k

Capacitors

C1	100p
C2	100n
C3	1μ
C4	100n
C5	100n
C6	100n
C7	1μ

C8	22n
C9	1n
C10	30p
C11	100p
C12	2.2μ
C13	4.7μ
C14	4.7μ
C15	3.3n
C16	22n
C17	1μ
C18	100p
C19	1μ
C20	10μ
C21	100μ
C22	100n
C23	10μ

Semiconductors

D1	1N34a or similar
D2	1N34a or similar
D3	1N4148
D4	3mm red LED
D5	1N4148
D6	1N4148
D7	1N4148
D8	1N5817
IC1	LM308N
LED1	3 or 5mm LED
LED2	3 or 5mm LED
LED3	3 or 5mm LED
Q1	PF5102 or similar
Q2	2N5089 or similar
Q3	2N5087 or similar
Q4	2N5089 or similar
Q5	PF5102 or similar
Q6	BS170

Electromechanical

Activate	3PDT footswitch
Amplitude	A100k
Boost	3PDT footswitch
Clip	SPDT on/off/on
Distortion	A100k
Filter	A100k

Magnitude	A100k
Octave	B50k
Octave (footswitch)	3PDT footswitch

Notes

Substitutes for the PF5102 are J201 or 2N5457 or their SMD equivalents, MMBFJ201 and MMBF5457. The footswitch daughterboard is

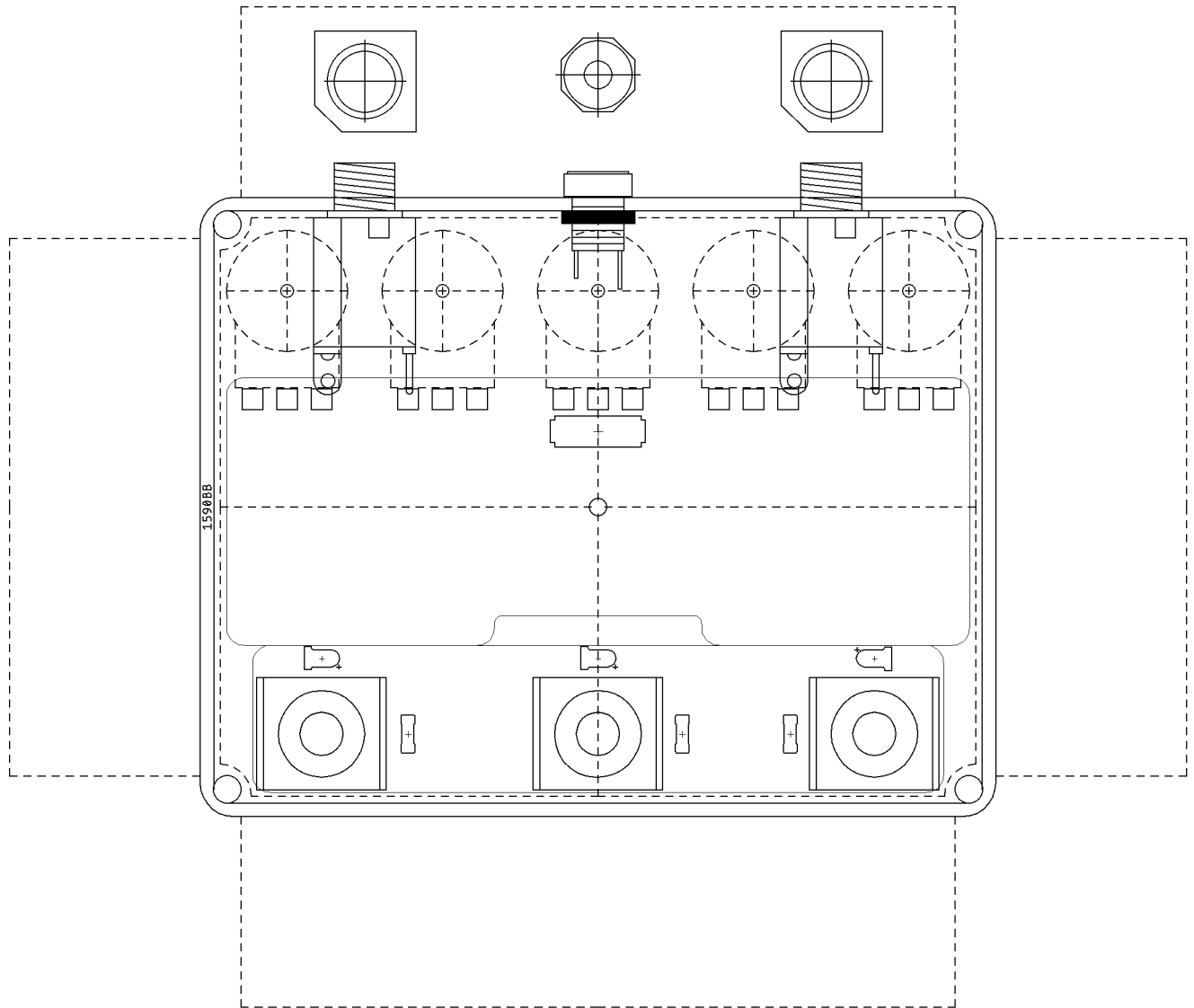
best attached to the main board using [header pins](#). If you are using a Russian D9 series germanium diode for D1-2, note that the marker is reversed from what's standard, so reverse those 180°. If you don't want the octave on a footswitch, just jump pins 5 and 6 together on the header pin pads.

SHOPPING LIST

Value	Type (suggested)	Quantity
47Ω	¼ watt metal or carbon film	1
470Ω	¼ watt metal or carbon film	1
560Ω	¼ watt metal or carbon film	1
1k	¼ watt metal or carbon film	4
1.5k	¼ watt metal or carbon film	1
2.2k	¼ watt metal or carbon film	1
4.7k	¼ watt metal or carbon film	3
10k	¼ watt metal or carbon film	8
22k	¼ watt metal or carbon film	1
47k	¼ watt metal or carbon film	3
100k	¼ watt metal or carbon film	2
470k	¼ watt metal or carbon film	3
1M	¼ watt metal or carbon film	5
30p	Ceramic	1
100p	Ceramic	3
1n	Film	1
3.3n	Film	1
22n	Film	2
100n	Film	5
1μ	Film	4
2.2μ	Electrolytic (25v+)	1
4.7μ	Electrolytic (25v+)	2
10μ	Electrolytic (25v+)	2
100μ	Electrolytic (25v+)	1
1N34a	Germanium diode	2
1N4148	Silicon switching diode	4
1N5817	Schottky rectifier diode	1
2N5087	PNP BJT	1
2N5089	NPN BJT	2
3mm red LED	LED	1
BS170	MOSFET	1
LED	3 or 5mm LED	3
LM308N	Opamp	1
PF5102	JFET	2

3PDT	Footswitch	3
A100k	16mm right angle PC mount	4
B50k	16mm right angle PC mount	1
SPDT	On/off/on toggle	1

DRILL TEMPLATE (1590BB)



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