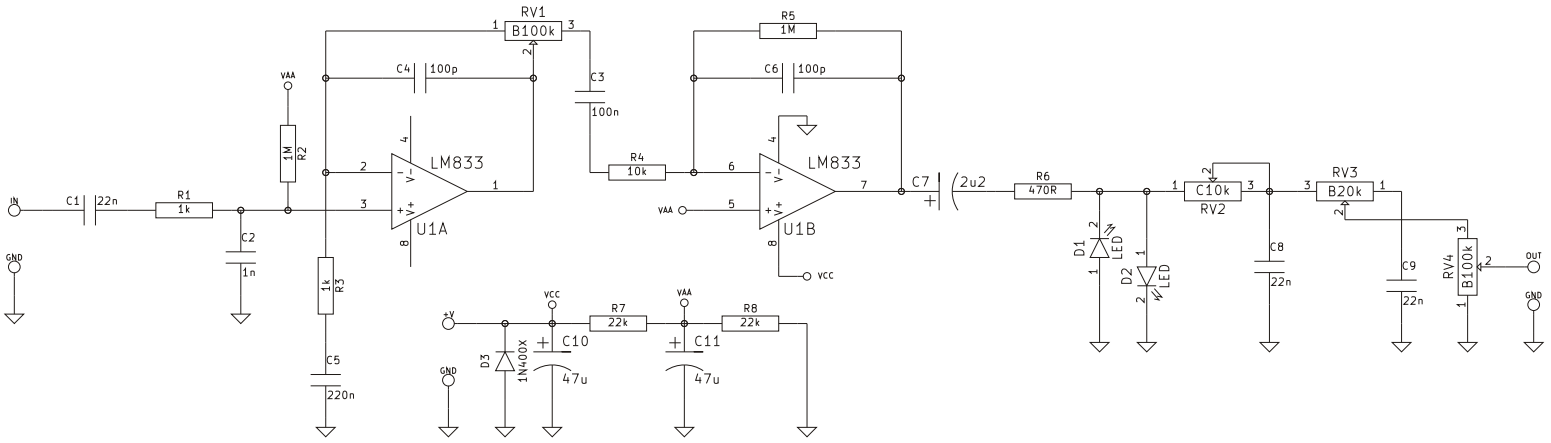
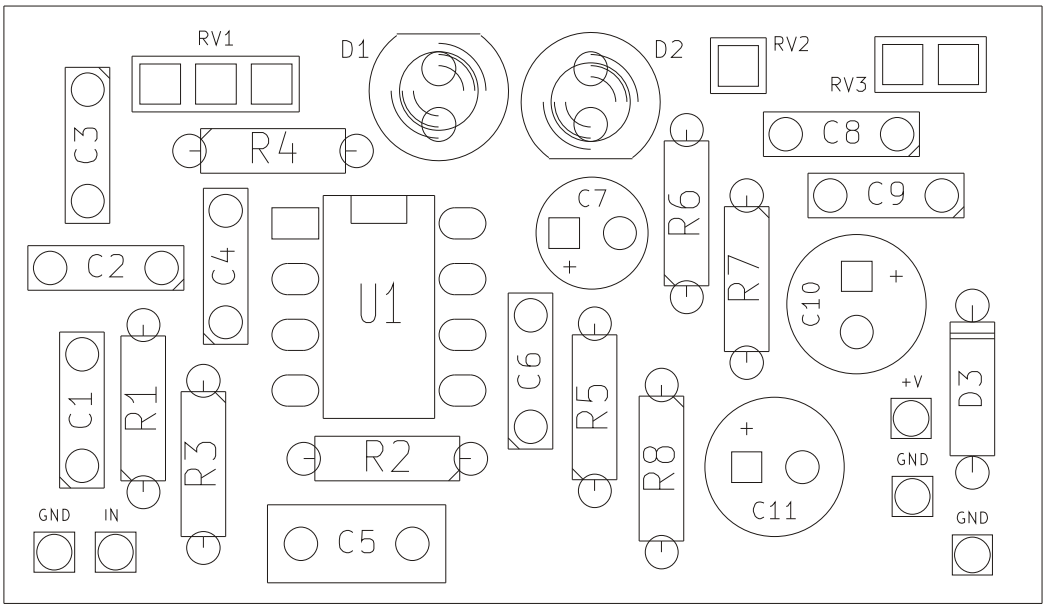
Crunch Box™ schematic: **11.02.2019**

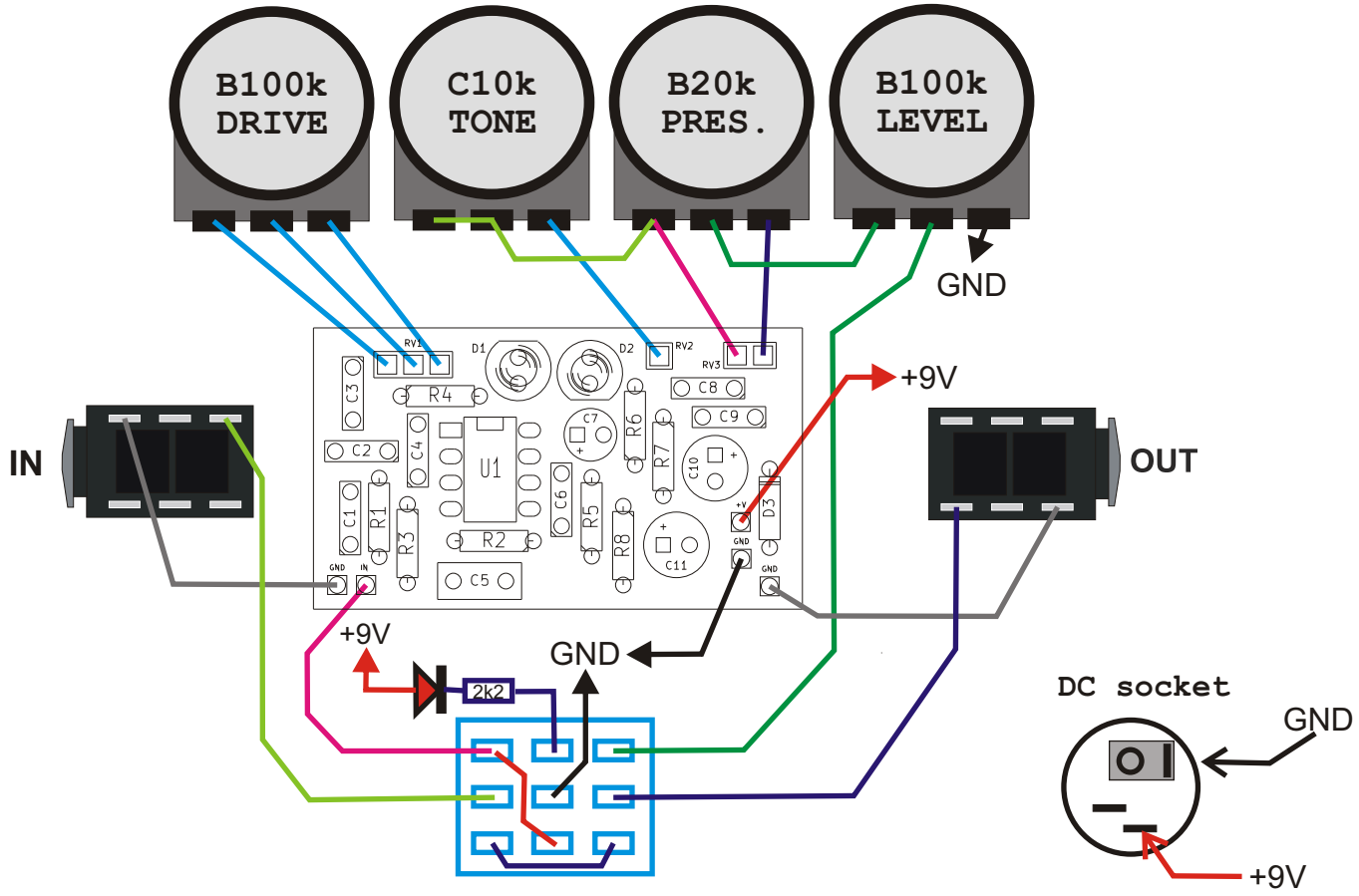


PCB parts placement diagram:



C1	22n	R1	1k
C2	1n	R2	1M
C3	100n	R3	1k
C4	100p	R4	10k
C5	220n	R5	1M
C6	100p	R6	470R
C7	2u2	R7	22k
C8	22n	R8	22k
C9	22n		
C10	47u	RV1	B100k
C11	47u	RV2	C10k
D1	RED LED	RV3	B20k
D2	RED LED	RV4	B100k
D3	1N400X		
U1	LM833		

Wiring (bottom view):



Use metal enclosure connected to ground.
Power supply: 9V DC

Bill of materials:

Resistors:

470R	1pcs.	"R6"
1k	2pcs.	"R1 R3"
2k2	1pcs.	"LED"
10k	1pcs.	"R4"
22k	2pcs.	"R7 R8"
1M	2pcs	"R2 R5"

Potentiometers:

B100k	2pcs.	"RV1 RV4"
C10k	1pcs.	"RV2"
B20k	1pcs.	"RV3"

Other:

Knobs	4pcs.
Footswitch 3PDT	1pcs.
Jack socket	2pcs.
DC socket 5.5/2.1	1pcs.

Capacitors:

100p	2pcs.	"C4 C6"
1n	1pcs.	"C2"
22n	3pcs.	"C1 C8 C9"
100n	1pcs.	"C3"
220n	1pcs.	"C5"

Electrolytic capacitors:

2u2	1pcs.	"C7"
47u	2pcs.	"C10 C11"

Semiconductors:

1N400X	1pcs.	"D3"
LM833	1pcs.	"U1"
LED	3pcs.	"D1 D2"

Resistor color code:

390 x 10Ω = 3,9kΩ

Color	Band 1	Band 2	Band 3	Multiplier	Tolerance
Black	0	0	0	1 Ω	
Brown	1	1	1	10 Ω	1%
Red	2	2	2	100 Ω	2%
Orange	3	3	3	1k Ω	
Yellow	4	4	4	10 kΩ	
Green	5	5	5	100 kΩ	0,5%
Blue	6	6	6	1 MΩ	0,25%
Purple	7	7	7	10 MΩ	0,1%
Gray	8	8	8	100 MΩ	0,05%
White	9	9	9	1 GΩ	
Gold				0,1 Ω	5%
Silver				0,01 Ω	10%

Capacitors markings:

471 = 47 x 10^1 pF = 470pF
472 = 47 x 10^2 pF = 4700pF = 4,7nF
473 = 47 x 10^3 pF = 47000pF = 47nF
474 = 47 x 10^4 pF = 470000pF = 470nF

100pF	100p	100	101
220pF	220p	220	221
4,7nF	4n7	0.0047	472
10nF	10n	0.01	103
100nF	100n	0.1	104
220nF	220n	0.22	224
470nF	470n	0.47	474
1000nF	1uF	1u	105