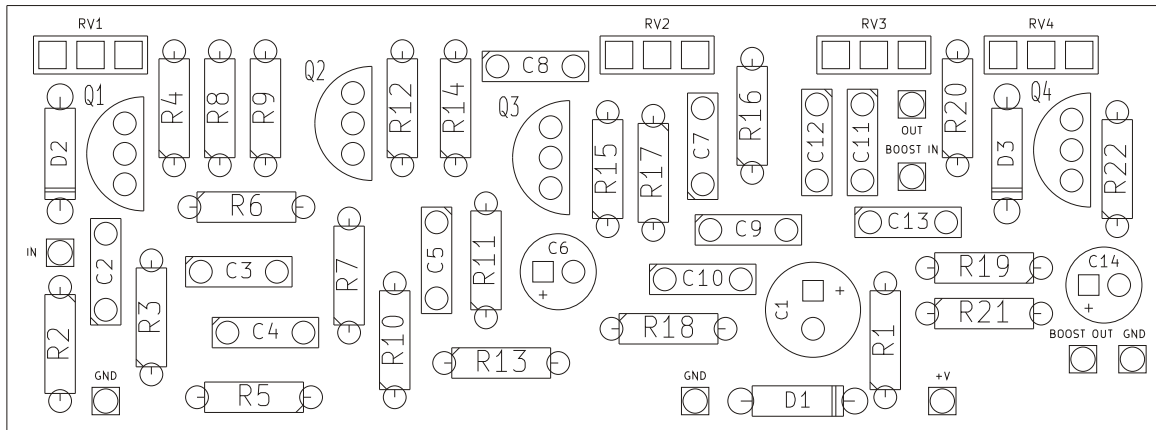
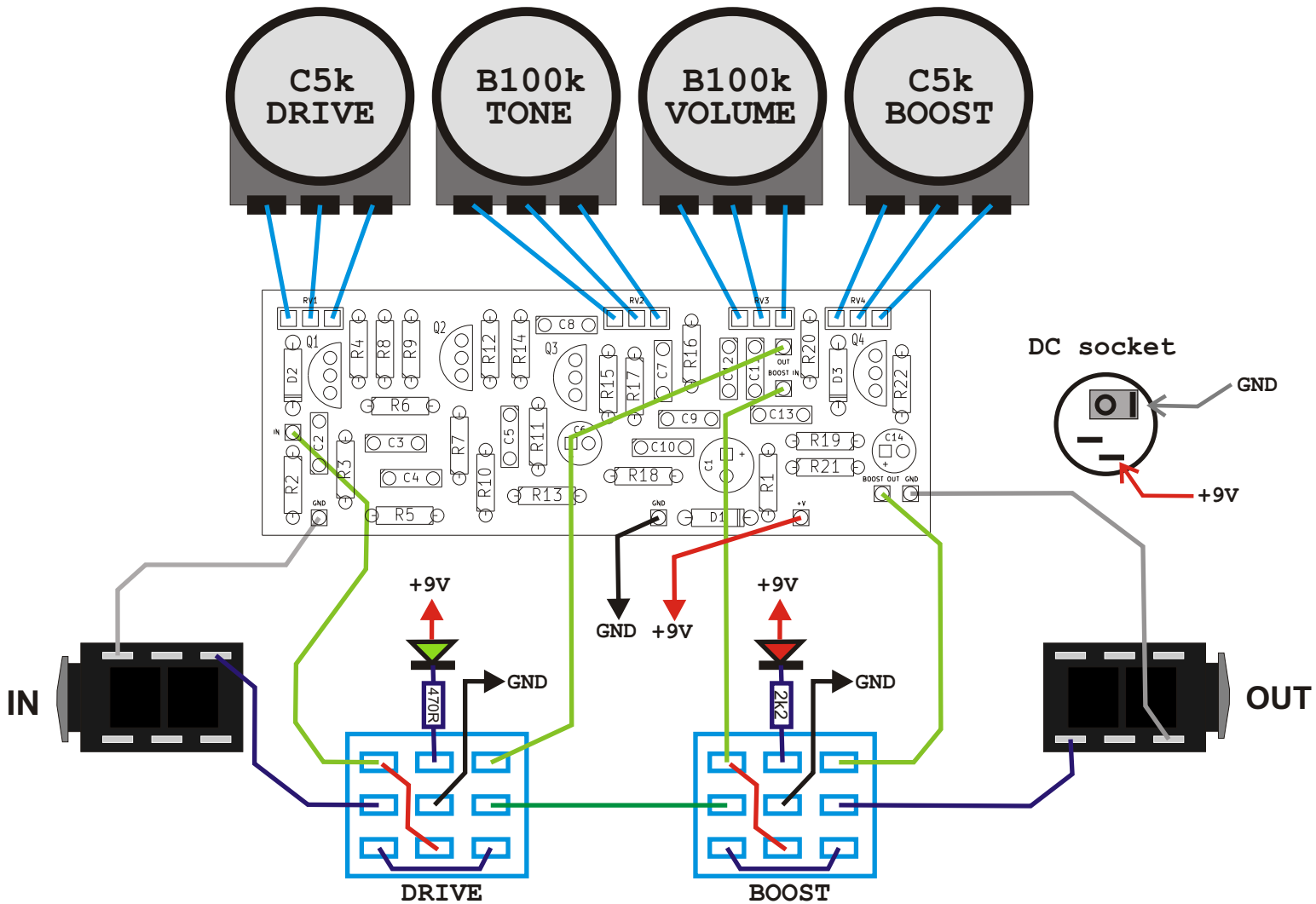


PCB parts placement diagram:



R1 82R	RV1 C5k	D1 1N400X
R2 1M	RV2 B100k	D2 9V1
R3 1M	RV3 B100k	D3 9V1
R4 1M	RV4 C5k	Q1 BS170
R5 5k1	C1 47u	Q2 BS170
R6 470k	C2 100n	Q3 BS170
R7 1M	C3 22n	Q4 BS170
R8 1M	C4 470p	
R9 180R	C5 22n	
R10 5k1	C6 1u	
R11 1M	C7 10n	
R12 1M	C8 22n	
R13 5k1	C9 1n	
R14 330R	C10 1n	
R15 47k	C11 1n	
R16 82k	C12 1n	
R17 10k	C13 100n	
R18 10k	C14 10u	
R19 1M		
R20 1M		
R21 5k1		
R22 47k		

Wiring (bottom view):



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

Bill of materials:

Resistors:

82R	1pcs.	"R1"
180R	1pcs.	"R9"
330R	1pcs.	"R14"
470R	1pcs.	"LED"
2k2	1pcs.	"LED"
5k1	4pcs.	"R5 R10 R13 R21"
10k	2pcs.	"R17 R18"
47k	2pcs.	"R15 R22"
82k	1pcs.	"R16"
470k	1pcs.	"R6"
1M	9pcs.	"R2 R3 R4 R7 R8 R11 R12 R19 R20"

Capacitors:

470p	1pcs.	"C4"
1n	4pcs.	"C9 C10 C11 C12"
10n	1pcs.	"C7"
22n	3pcs.	"C3 C5 C8"
100n	1pcs.	"C2"
100n	1pcs.	"C13"

Electrolytic capacitors:

1u	1pcs.	"C6"
10u	1pcs.	"C14"
47u	1pcs.	"C1"

Potentiometers:

C5k	2pcs.	"RV1 RV4"
B100k	2pcs.	"RV2 RV3"

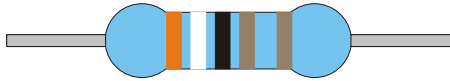
Semiconductors:

1N400X	1pcs.	"D1"
Zener9V1	2pcs.	"D2 D3"
BS170	4pcs.	"Q1 Q2 Q3 Q4"
LED	2pcs.	

Other:

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

Resistor color code:



$$390 \times 10\Omega = 3,9k\Omega$$

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 k Ω	
Green	5	5	5	100 k Ω	0,5%
Blue	6	6	6	1 M Ω	0,25%
Purple	7	7	7	10 M Ω	0,1%
Gray	8	8	8	100 M Ω	0,05%
White	9	9	9	1 G Ω	
Gold				0,1 Ω	5%
Silver				0,01 Ω	10%

Capacitors markings:

$$\begin{aligned}
 471 &= 47 \times 10^1 \text{ pF} = 470 \text{ pF} \\
 472 &= 47 \times 10^2 \text{ pF} = 4700 \text{ pF} = 4,7 \text{ nF} \\
 473 &= 47 \times 10^3 \text{ pF} = 47000 \text{ pF} = 47 \text{ nF} \\
 474 &= 47 \times 10^4 \text{ pF} = 470000 \text{ pF} = 470 \text{ nF}
 \end{aligned}$$

$$\begin{aligned}
 100 \text{ pF} &= 100 \text{ p} = 100 = 101 \\
 220 \text{ pF} &= 220 \text{ p} = 220 = 221 \\
 4,7 \text{ nF} &= 4 \text{ n}7 = 0.0047 = 472 \\
 10 \text{ nF} &= 10 \text{ n} = 0.01 = 103 \\
 100 \text{ nF} &= 100 \text{ n} = 0.1 = 104 \\
 220 \text{ nF} &= 220 \text{ n} = 0.22 = 224 \\
 470 \text{ nF} &= 470 \text{ n} = 0.47 = 474 \\
 1000 \text{ nF} &= 1 \mu\text{F} = 1 \mu = 105
 \end{aligned}$$