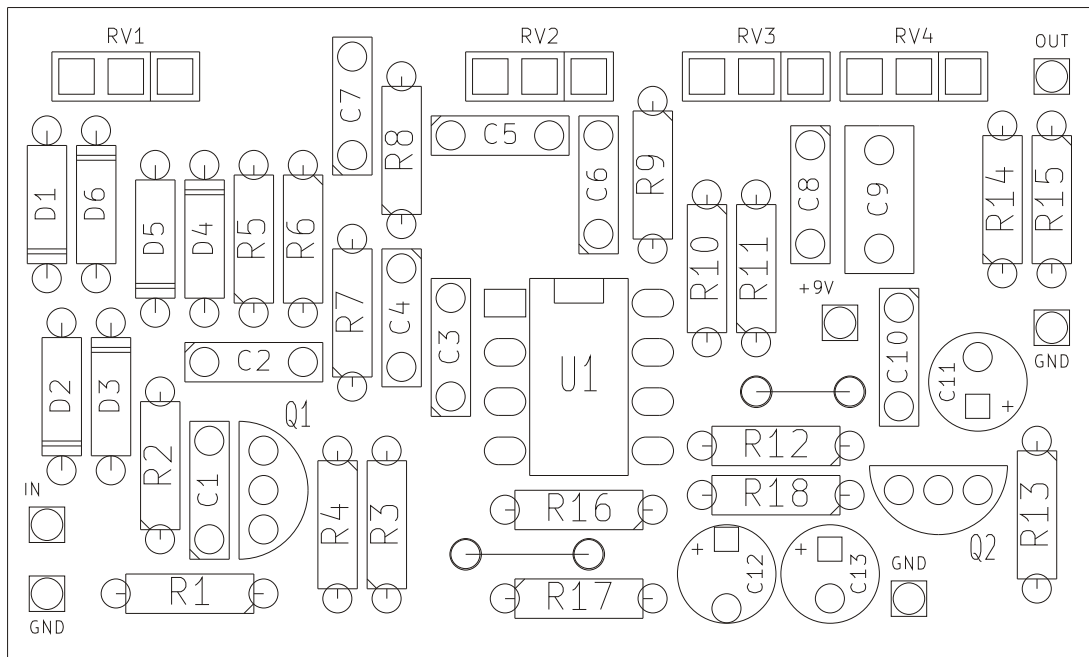


PCB parts placement diagram:

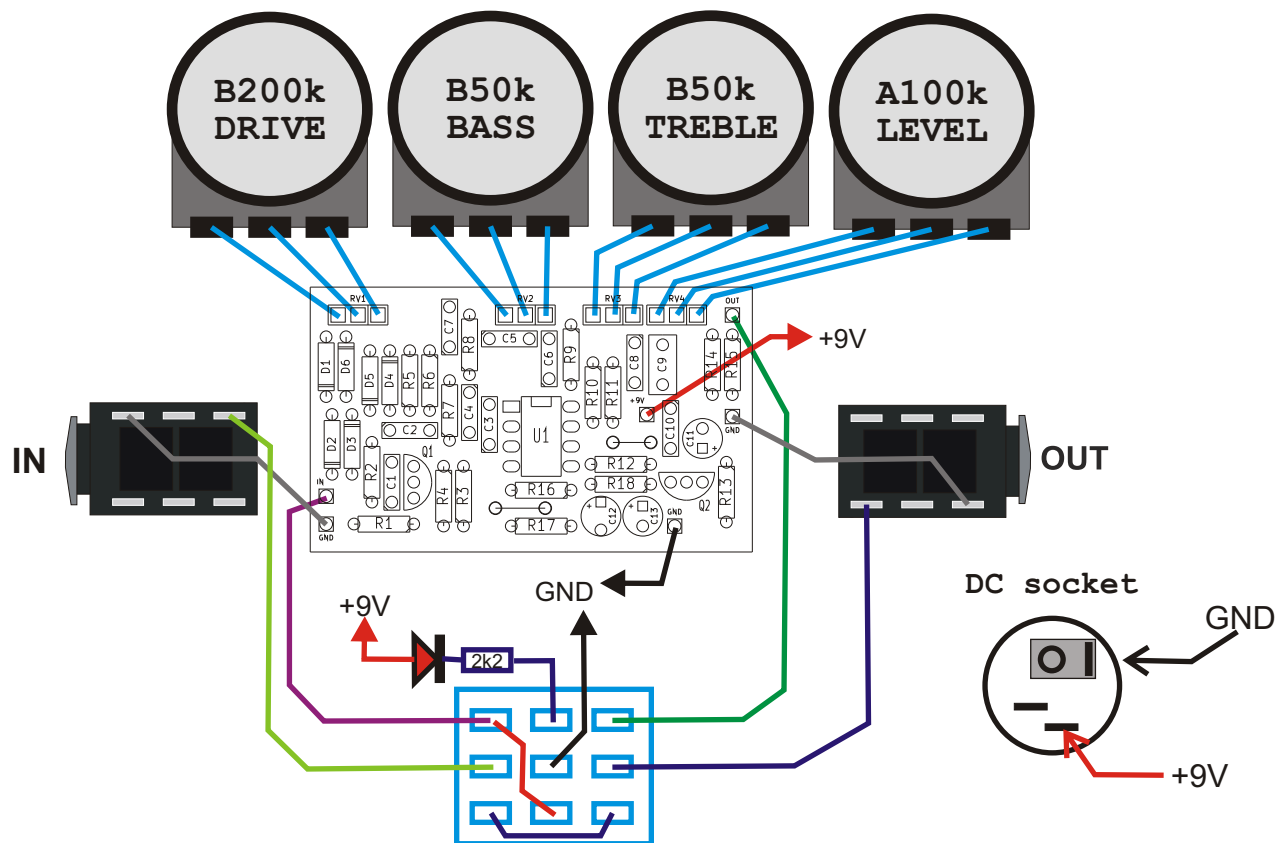


D1 4148
D2 4148
D3 4148
D4 4148
D5 4148
D6 4148
Q1 2N5088
Q2 2N5088
U1 4558

R1 1M
R2 10k
R3 1M
R4 10k
R5 22k
R6 47k
R7 jumper
R8 4k7
R9 4k7
R10 33k
R11 10k
R12 470k
R13 10k
R14 470R
R15 100k
R16 6k8
R17 15k
R18 22k
RV1 B200k
RV2 B50k
RV3 B50k
RV4 A100k

C1 47n
C2 1u
C3 150p
C4 empty
C5 33n
C6 33n
C7 4n7
C8 4n7
C9 1u
C10 100n
C11 10u
C12 10u
C13 10u

Wiring (bottom view):



Use metal enclosure connected to ground.

Power supply: 9V DC

Bill of material:

Resistors:

470R 1pcs. "R14"
 2k2 1pcs. "LED"
 4k7 2pcs. "R8 R9"
 6k8 1pcs. "R16"
 10k 4pcs. "R2 R4 R11 R13"
 15k 1pcs. "R17"
 22k 2pcs. "R5 R18"
 33k 1pcs. "R10"
 47k 1pcs. "R6"
 100k 1pcs. "R15"
 470k 1pcs. "R12"
 1M 2pcs. "R1 R3"

Potentiometers:

B50k 2pcs. "RV2 RV3"
 A100k 1pcs. "RV4"
 B200k 1pcs. "RV1"

Other:

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

Capacitors:

150p 1pcs. "C3"
 4n7 2pcs. "C7 C8"
 47n 1pcs. "C1"
 33n 2pcs. "C5 C6"
 100n 1pcs. "C10"
 1u 2pcs. "C2 C9"

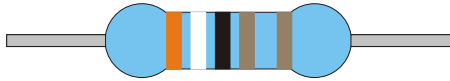
Electrolytic capacitors:

10u 3pcs. "C11 C12 C13"

Semiconductors:

1N4148 6pcs. "D1 D2 D3 D4 D5 D6"
 4558 1pcs. "U1"
 2N5088 2pcs. "Q1 Q2"
 LED 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:

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

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