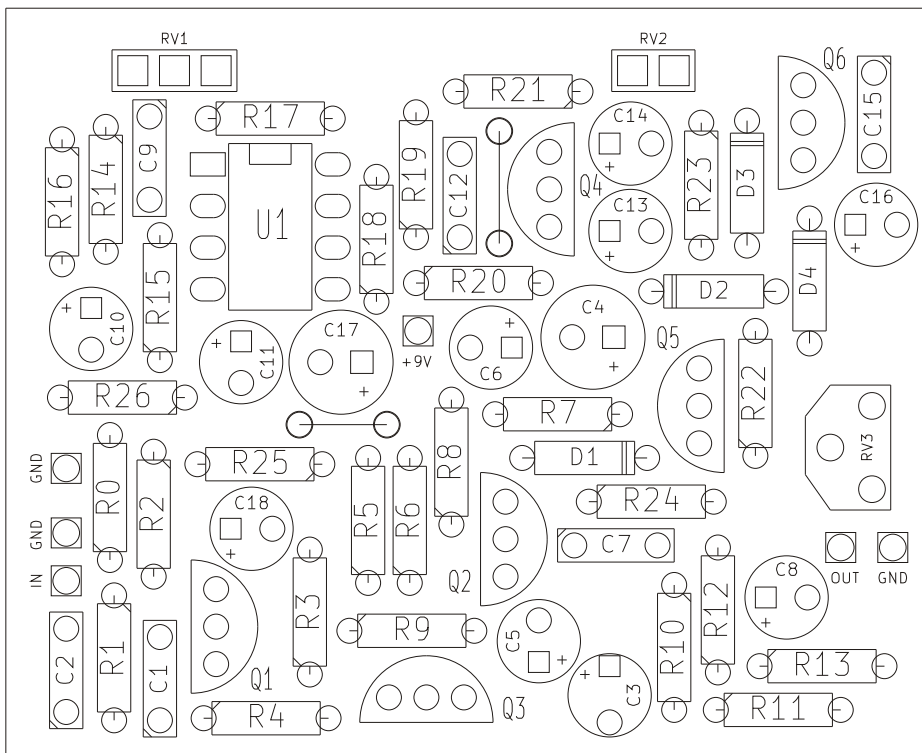
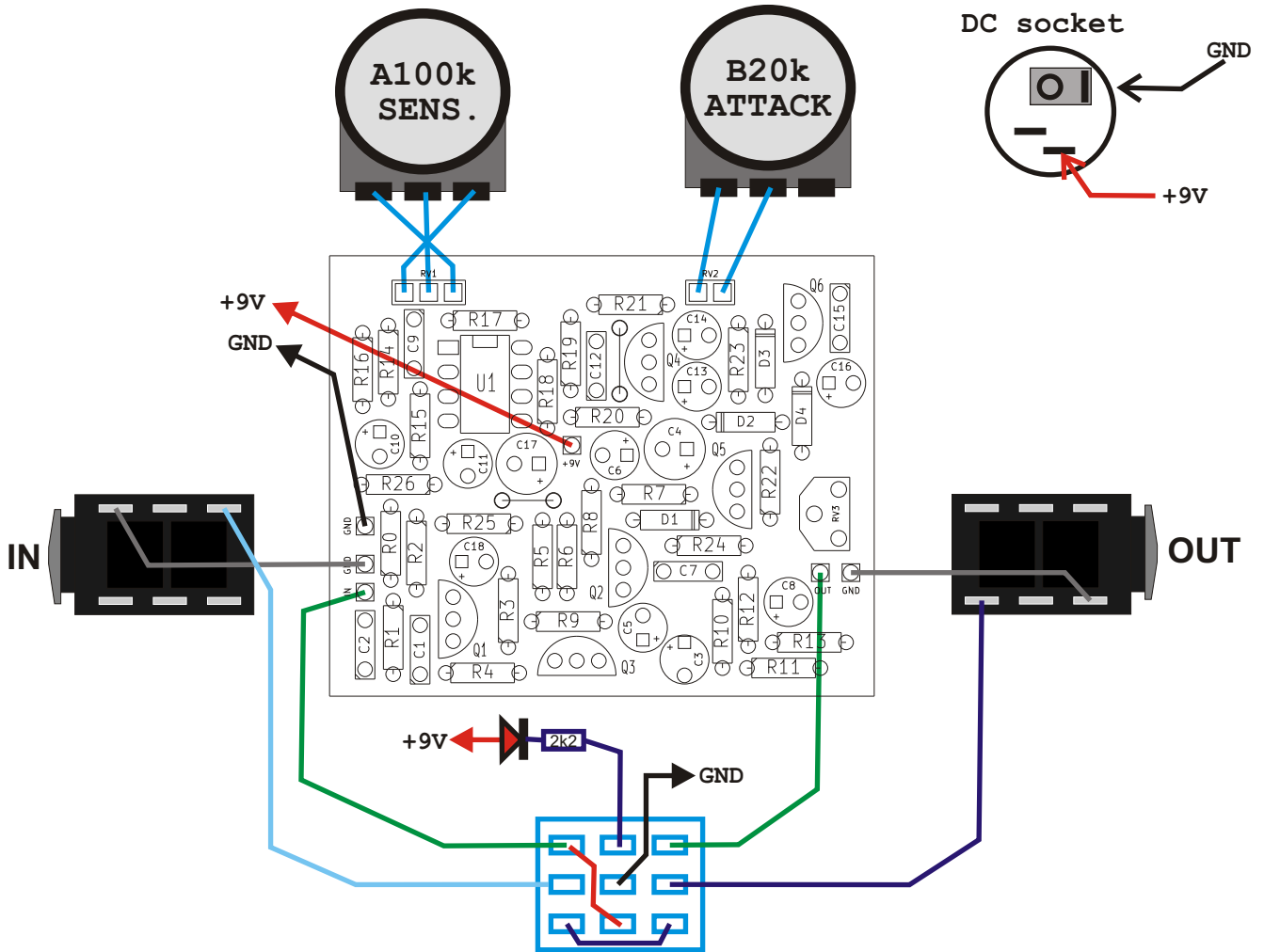


PCB parts placement diagram:



R0	1M	C1	47n
R1	1k	C2	22n
R2	470k	C3	1u
R3	10k	C4	47u
R4	22k	C5	1u
R5	3k3	C6	0,47u
R6	470k	C7	33n
R7	47k	C8	1u
R8	1M	C9	22n
R9	1M	C10	1u
R10	1M	C11	10u
R11	10k	C12	1n
R12	1k	C13	1u
R13	100k	C14	1u
R14	470R	C15	47n
R15	220k	C16	10u
R16	390R	C17	47u
R17	1M	C18	10u
R18	1k	D1	5v6
R19	390k	D2	4148
R20	4k7	D3	4148
R21	4k7	D4	4148
R22	100k	Q1	BC550
R23	100k	Q2	2SK30A
R24	10k	Q3	BC550
R25	22k	Q4	BC550
R26	22k	Q5	BC550
RV1	A100k	Q6	BC550
RV2	B20k	U1	741
RV3	T25k		

Wiring (bottom view):



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

Bill of materials:

Resistors:

390R 1pcs. "R16"
 470R 1pcs. "R14"
 1k 3pcs. "R1 R12 R18"
 2k2 1pcs. "LED"
 3k3 1pcs. "R5"
 4k7 2pcs. "R20 R21"
 10k 3pcs. "R3 R11 R24"
 22k 3pcs. "R4 R25 R26"
 47k 1pcs. "R7"
 100k 3pcs. "R13 R22 R23"
 220k 1pcs. "R15"
 390k 1pcs. "R19"
 470k 2pcs. "R2 R6"
 1M 5pcs. "R0 R8 R9 R10 R17"

Capacitors:

1n 1pcs. "C12"
 22n 2pcs. "C2 C9"
 33n 1pcs. "C7"
 47n 2pcs. "C1 C15"

Electrolytic caps.:

0,47u 1pcs. "C6"
 1u 6pcs. "C3 C5 C8 C10 C13 C14"
 10u 3pcs. "C11 C16 C18"
 47u 2pcs. "C4 C17"

Semiconductors:

1N4148 3pcs. "D2 D3 D4"
 Zener 5v6 1pcs. "D1"
 BC550 5pcs. "Q1 Q3 Q4 Q5 Q6"
 2SK30A 1pcs. "Q2"
 741 1pcs. "U1"
 LED 1pcs.

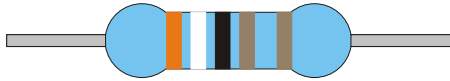
Other:

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

Potentiometers:

B20k 1pcs. "RV2"
 A100k 1pcs. "RV1"
 25k Trimpot 1pcs. "RV3"

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:

$$471 = 47 \times 10^1 \text{ pF} = 470 \text{ pF}$$

$$472 = 47 \times 10^2 \text{ pF} = 4700 \text{ pF} = 4,7 \text{ nF}$$

$$473 = 47 \times 10^3 \text{ pF} = 47000 \text{ pF} = 47 \text{ nF}$$

$$474 = 47 \times 10^4 \text{ pF} = 470000 \text{ pF} = 470 \text{ nF}$$

$$100 \text{ pF} = 100 \text{ p} = 100 = 101$$

$$220 \text{ pF} = 220 \text{ p} = 220 = 221$$

$$4,7 \text{ nF} = 4 \text{ n}7 = 0.0047 = 472$$

$$10 \text{ nF} = 10 \text{ n} = 0.01 = 103$$

$$100 \text{ nF} = 100 \text{ n} = 0.1 = 104$$

$$220 \text{ nF} = 220 \text{ n} = 0.22 = 224$$

$$470 \text{ nF} = 470 \text{ n} = 0.47 = 474$$

$$1000 \text{ nF} = 1 \mu\text{F} = 1 \mu = 105$$