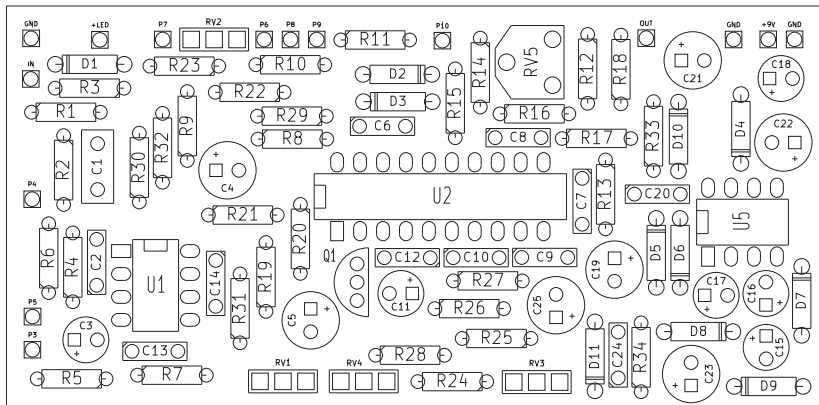


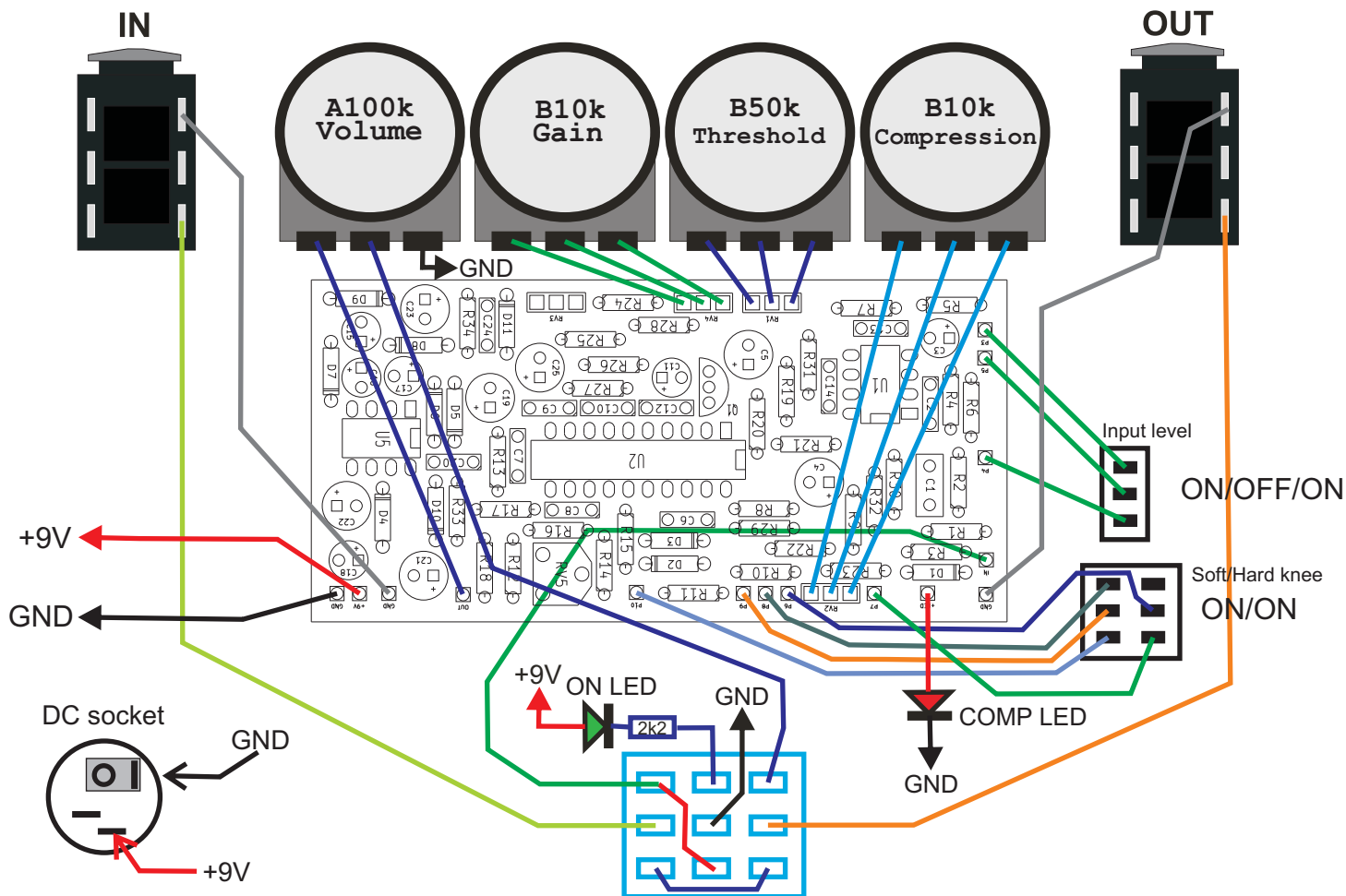
PCB parts placement diagram:



- | | |
|-----------------|---------------|
| R1 2M2 | C1 330n |
| R2 1k | C2 47p |
| R3 1M | C3 10u |
| R4 10k | C4 47u |
| R5 20k | C5 47u |
| R6 8k2 | C6 22p |
| R7 2k2 | C7 100n |
| R8 22k | C8 47p |
| R9 220k | C9 100n |
| R10 33k | C10 100n |
| R11 33k | C11 10u |
| R12 4k7 | C12 22p |
| R13 4k7 | C13 100n |
| R14 470k | C14 100n |
| R15 47R | C15 10u Tant. |
| R16 22k | C16 10u Tant. |
| R17 4k7 | C17 10u Tant. |
| R18 don't mount | C18 4u7 |
| R19 470k | C19 100u |
| R20 5k6 | C20 100n |
| R21 10k | C21 47u |
| R22 1k5 | C22 100u |
| R23 22k | C23 100u |
| R24 don't mount | C24 100n |
| R25 don't mount | C25 47u |
| R26 don't mount | |
| R27 5k6 | |
| R28 560k | |
| R29 33k | |
| R30 22k | |
| R31 2M2 | |
| R32 2k2 | |
| R33 120R | |
| R34 82R | |

- | | |
|---------|----------------|
| D1 4148 | Q1 don't mount |
| D2 4148 | U1 5532 |
| D3 4148 | U2 THAT4301 |
| D4 5819 | U5 Lt1054 |
| D5 5819 | |
| D6 5819 | Rv1 B50k |
| D7 5819 | Rv2 B10k |
| D8 5819 | Rv3 B10k |
| D9 5819 | Rv4 B10k |
| D10 12V | Rv5 Tr.50k |
| D11 12V | |

Wiring (bottom view):



Use metal enclosure connected to ground. Set trimpot in center position.
Power supply: 9V DC

Bill of materials:

Resistors:

2k2 1pcs. "LED"
 47R 1pcs. "R15"
 82R 1pcs. "R34"
 120R 1pcs. "R33"
 1k 2pcs. "R2 R17"
 1k5 1pcs. "R22"
 2k2 2pcs. "R7 R32"
 4k7 2pcs. "R12 R13"
 5k6 2pcs. "R20 R27"
 8k2 1pcs. "R6"
 10k 2pcs. "R4 R21"
 20k 1pcs. "R5"
 22k 4pcs. "R8 R16 R23 R30"
 33k 3pcs. "R10 R11 R29"
 220k 1pcs. "R9"
 470k 2pcs. "R14 R19"
 560k 1pcs. "R28"
 1M 1pcs. "R3"
 2M2 2pcs. "R1 R31"

Capacitors:

22p 2pcs. "C6 C12"
 47p 2pcs. "C2 C8"
 100n 7pcs. "C7 C9 C10 C13 C14 C20 C24"
 330n 1pcs. "C1"

Electrolytic capacitors:

4u7 1pcs. "C18"
 10u 2pcs. "C3 C11"
 47u 4pcs. "C4 C5 C21 C25"
 100u 3pcs. "C19 C22 C23"
 10u Tant. 3pcs. "C15 C16 C17"

Semiconductors:

1N4148 3pcs. "D1 D2 D3"
 1N5819 6pcs. "D4 D5 D6 D7 D8 D9"
 Zen.12V 2pcs. "D10 D11"
 LED 2pcs.
 5532 1pcs. "U1"
 THAT4301retrofit 1pcs. "U2"
 Lt1054 1pcs. "U5"

Potentiometers:

B50k 1pcs. "RV1"
 B10k 2pcs. "RV2 RV4"
 A100k 1pcs. "VOLUME"
 Tr.50k 1pcs. "Rv5"

Other:

Knobs 4pcs.
 Footswitch 3PDT 1pcs.
 Jack socket 2pcs.
 DC socket 5.5/2.1 1pcs.
 Switch ON/OFF/ON single (3pin) 1pcs.
 Switch ON/ON double (6pin) 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:

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

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