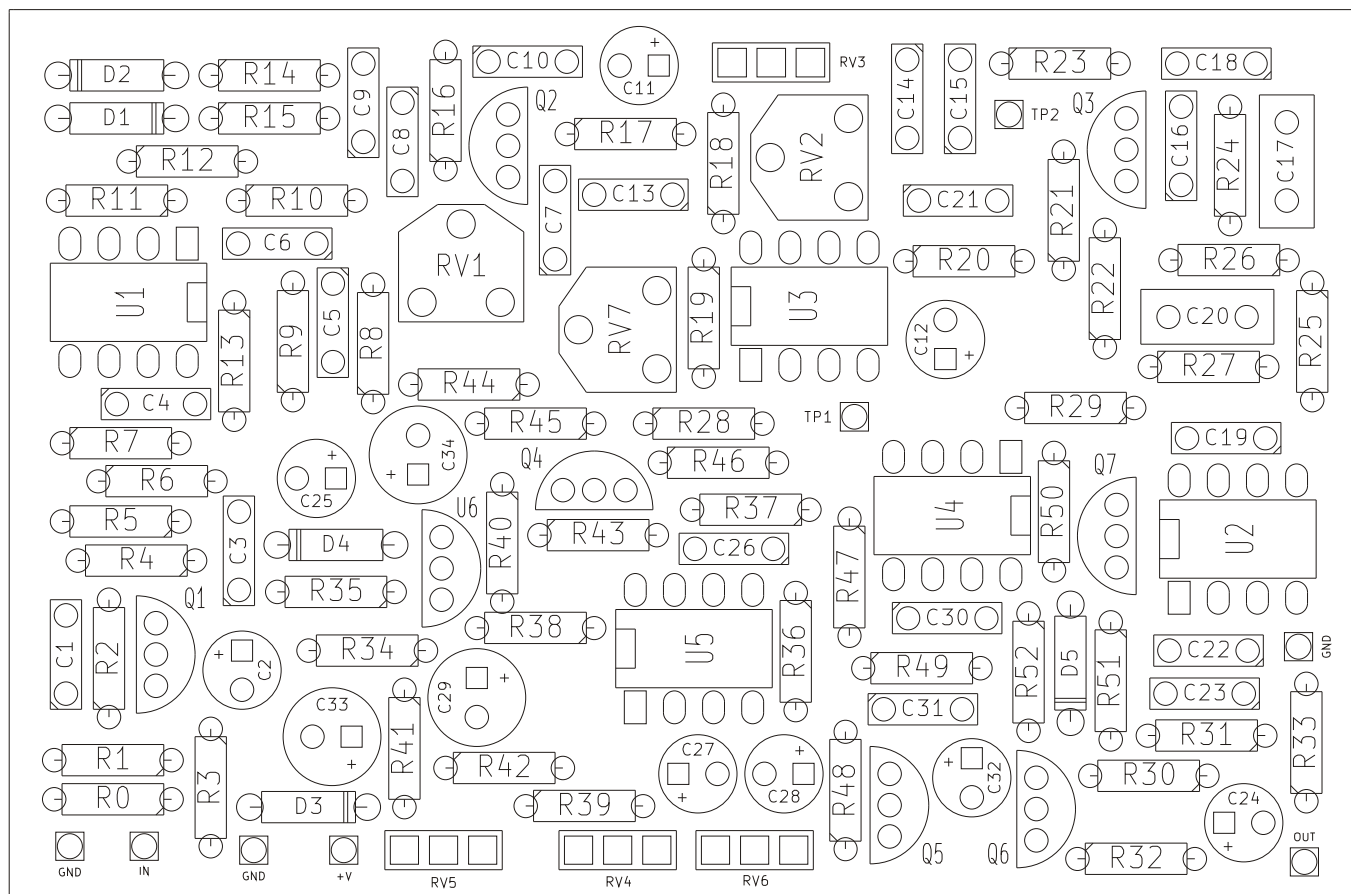
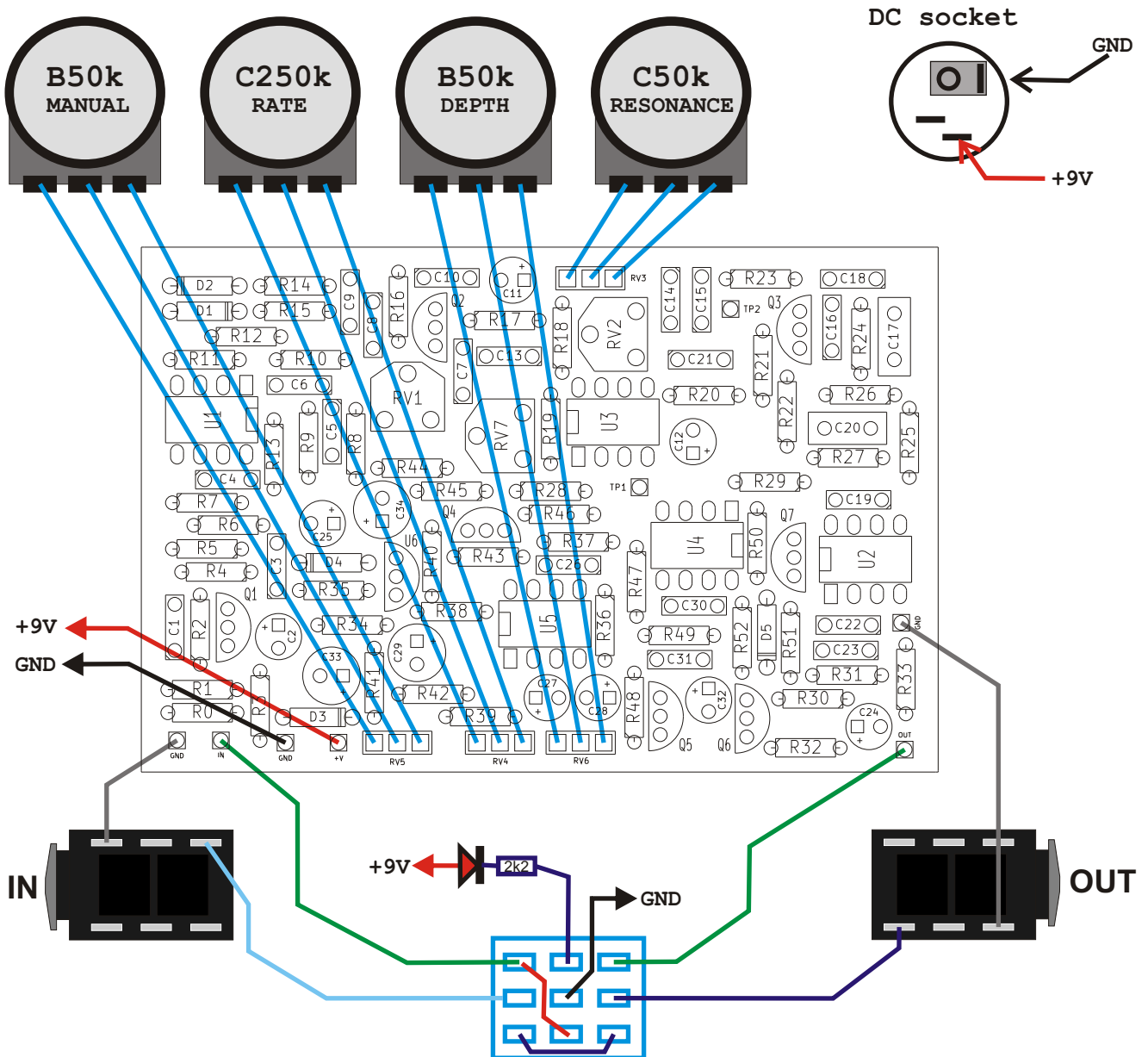


PCB parts placement diagram:



R0 1M	R27 1M	RV1 Tr.20k	C20 220n	D1 4148
R1 1k	R28 47k	RV2 Tr.25k	C21 47n	D2 4148
R2 470k	R29 27k	RV3 C50k	C22 100p	D3 ZENER 12V
R3 10k	R30 10k	RV4 C250k	C23 6n8	D4 4148
R4 47k	R31 47k	RV5 B50k	C24 1u	D5 4148
R5 10k	R32 470R	RV6 B50k	C25 33u	
R6 47k	R33 100k	RV7 Tr.1M	C26 10n	Q1 5088
R7 10k	R34 33k		C27 33u	Q2 5088
R8 220k	R35 33k	C1 47n	C28 33u	Q3 5088
R9 82k	R36 180k	C2 1u	C29 47u	Q4 5088
R10 22k	R37 220k	C3 6n8	C30 47p	Q5 5088
R11 4k7	R38 100k	C4 100p	C31 8p2	Q6 5088
R12 47k	R39 1k5	C5 220p	C32 22u	Q7 5087
R13 10k	R40 10k	C6 47n	C33 100u	
R14 10k	R41 10k	C7 47n	C34 47u	U1 4558
R15 10k	R42 68k	C8 12n		U2 4558
R16 10k	R43 150k	C9 150p		U3 MN3207
R17 100k	R44 470k	C10 33n		U4 MN3102
R18 56k	R45 4k7	C11 1u		U5 TL062
R19 330k	R46 100k	C12 1u		U6 78L05
R20 10k	R47 4k7	C13 33n		
R21 10k	R48 220k	C14 3n9		
R22 10k	R49 33k	C15 8n2		
R23 10k	R50 33k	C16 330p		
R24 47k	R51 4k7	C17 220n		
R25 22k	R52 4k7	C18 1n		
R26 47k		C19 150p		

Wiring (bottom view):



Use metal enclosure connected to ground.

Power supply: 9V DC

Adjustments:

- set DEPTH and MANUAL potentiometers to minimum and set RV7 trimpot to get 40kHz signal frequency at TP1 point;
- connect flanger to amplifier and guitar, set RESONANCE to maximum and set RV1 trimpot to the point when circuit start to oscillate;
- set RV2 trimpot in the middle of the "clean modulation area" (no modulation -> distorted sound -> clean modulation -> distorted sound -> no modulation).

Bill of materials:

Resistors:

470R 1pcs. "R32"
1k 1pcs. "R1"
1k5 1pcs. "R39"
2k2 1pcs. "LED"
4k7 5pcs. "R11 R45 R47 R51 R52"
10k 14pcs. "R3 R5 R7 R13 R14 R15 R16 R20 R21 R22 R23 R30 R40 R41"
22k 2pcs. "R10 R25"
27k 1pcs. "R29"
33k 4pcs. "R34 R35 R49 R50"
47k 7pcs. "R4 R6 R12 R24 R26 R28 R31"
56k 1pcs. "R18"
68k 1pcs. "R42"
82k 1pcs. "R9"
100k 4pcs. "R17 R33 R38 R46"
150k 1pcs. "R43"
180k 1pcs. "R36"
220k 3pcs. "R8 R37 R48"
330k 1pcs. "R19"
470k 2pcs. "R2 R44"
1M 2pcs. "R0 R27"

Trimpots:

20k 1pcs. "RV1"
25k 1pcs. "RV2"
1M 1pcs. "RV7"

Potentiometers:

B50k 2pcs. "RV5 RV6"
C50k 1pcs. "RV3"
C250k 1pcs. "RV4"

Capacitors:

8p2 1pcs. "C31"
47p 1pcs. "C30"
100p 2pcs. "C4 C22"
150p 2pcs. "C9 C19"
220p 1pcs. "C5"
330p 1pcs. "C16"
1n 1pcs. "C18"
3n9 1pcs. "C14"
6n8 2pcs. "C3 C23"
8n2 1pcs. "C15"
10n 1pcs. "C26"
12n 1pcs. "C8"
33n 2pcs. "C10 C13"
47n 4pcs. "C1 C6 C7 C21"
220n 2pcs. "C17 C20"

Electrolytic capacitors:

1u 4pcs. "C2 C11 C12 C24"
22u 1pcs. "C32"
33u 3pcs. "C25 C27 C28"
47u 2pcs. "C29 C34"
100u 1pcs. "C33"

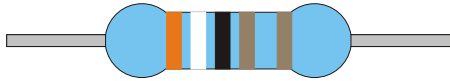
Semiconductors:

2N5087 1pcs. "Q7"
2N5088 6pcs. "Q1 Q2 Q3 Q4 Q5 Q6"
4558 2pcs. "U1 U2"
MN3207 1pcs. "U3"
MN3102 1pcs. "U4"
78L05 1pcs. "U6"
TL062 1pcs. "U5"
1N4148 4pcs. "D1 D2 D4 D5"
ZENER12V 1pcs. "D3"
LED 1pcs.

Other:

Footswitch 3PDT 1pcs.
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:

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

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