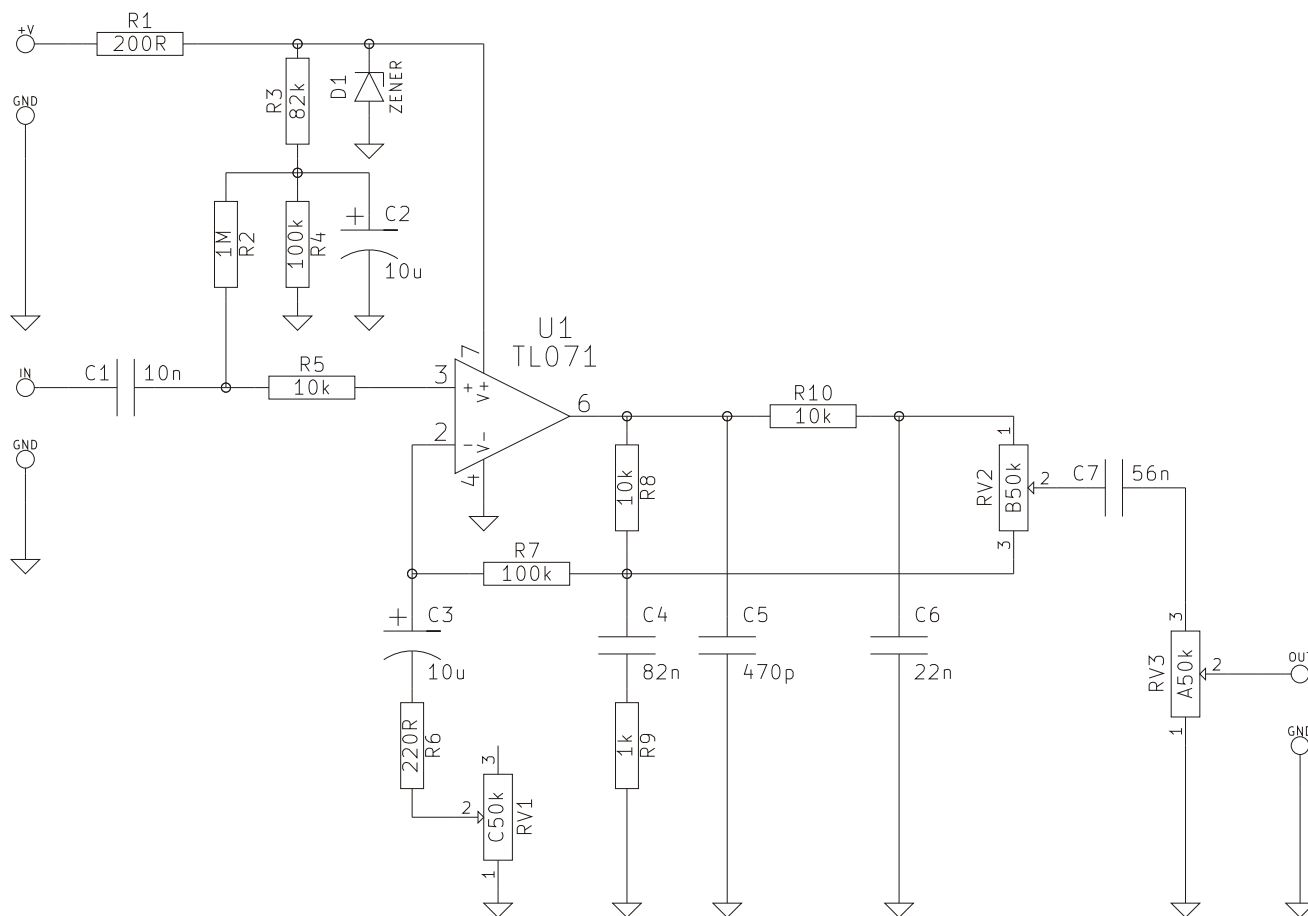


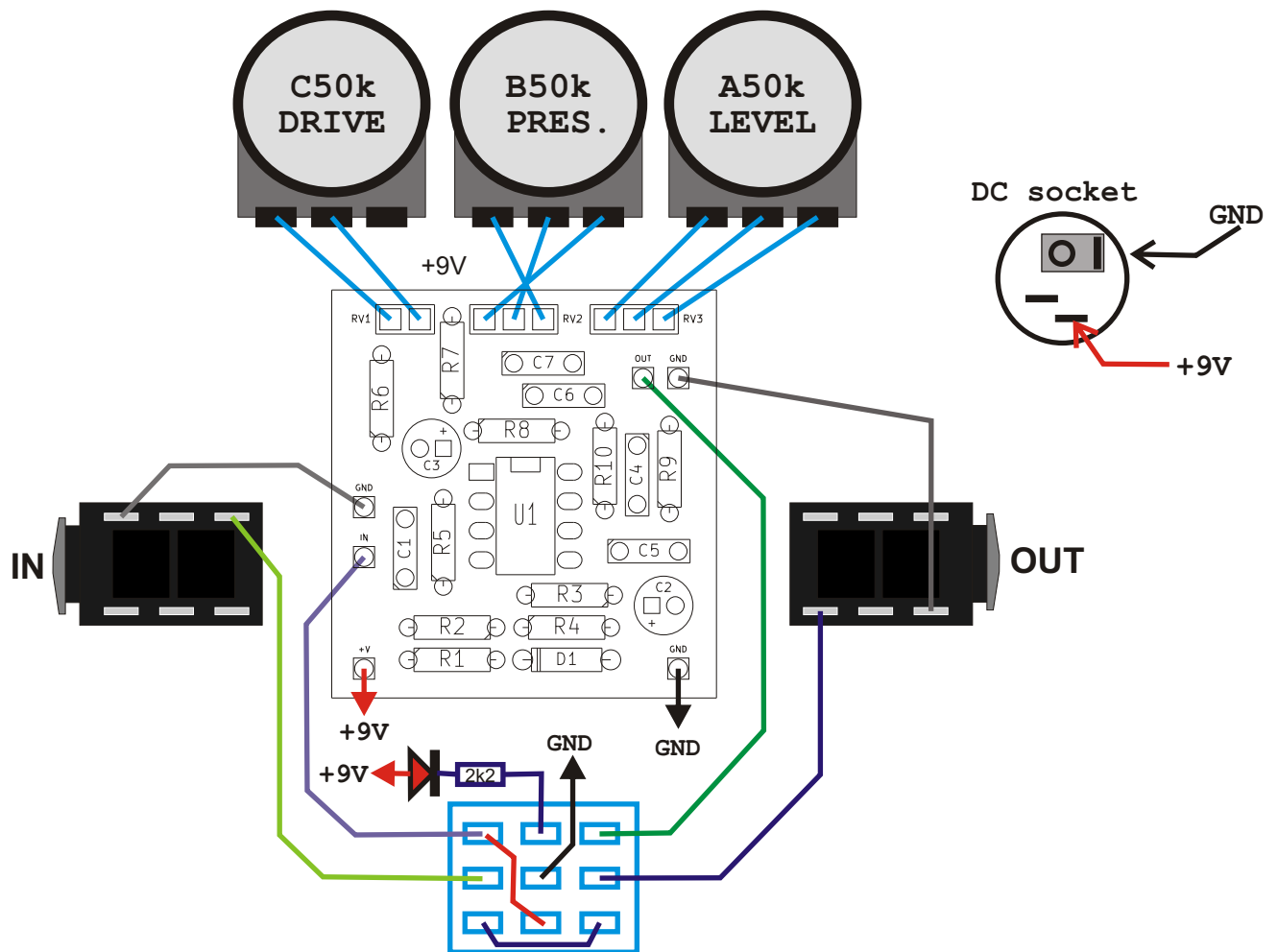
31.10.2019



The diagram illustrates a circuit board layout for a 741 op-amp. The central component is the 741 op-amp (U1), a large rectangle with 14 pins. It is surrounded by various passive components: resistors R1 through R10, capacitors C1 through C7, and a diode D1. The circuit includes two input voltage dividers (RV1, RV2) and two output voltage dividers (RV3, RV4). The power supply is connected to +V and GND. The layout is shown with component footprints and their electrical symbols.

R1 200R	C1 10n
R2 1M	C2 10u
R3 82k	C3 10u
R4 100k	C4 82n
R5 10k	C5 470p
R6 220R	C6 22n
R7 100k	C7 56n
R8 10k	
R9 1k	D1 8V2 ZENER
R10 10k	U1 T1071
RV1 C50k	
RV2 B50k	
RV3 A50k	

Wiring (bottom view):



Use metal enclosure connected to ground.

Power supply: 9V DC

Bill of materials:

Resistors:

200R 1pcs. "R1"
 220R 1pcs. "R6"
 1k 1pcs. "R9"
 2k2 1pcs. "LED"
 10k 3pcs. "R5 R8 R10"
 82k 1pcs. "R3"
 100k 2pcs. "R4 R7"
 1M 1pcs. "R2"

Potentiometers:

C50k 1pcs. "RV1"
 B50k 1pcs. "RV2"
 A50k 1pcs. "RV3"

Other:

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

Capacitors:

470p 1pcs. "C5"
 10n 1pcs. "C1"
 22n 1pcs. "C6"
 56n 1pcs. "C7"
 82n 1pcs. "C4"

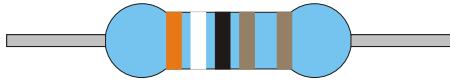
Electrolytic capacitors:

10u 2pcs. "C2 C3"

Semiconductors:

ZENER 8V2 1pcs. "D1"
 TL071 1pcs. "U1"
 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:

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

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