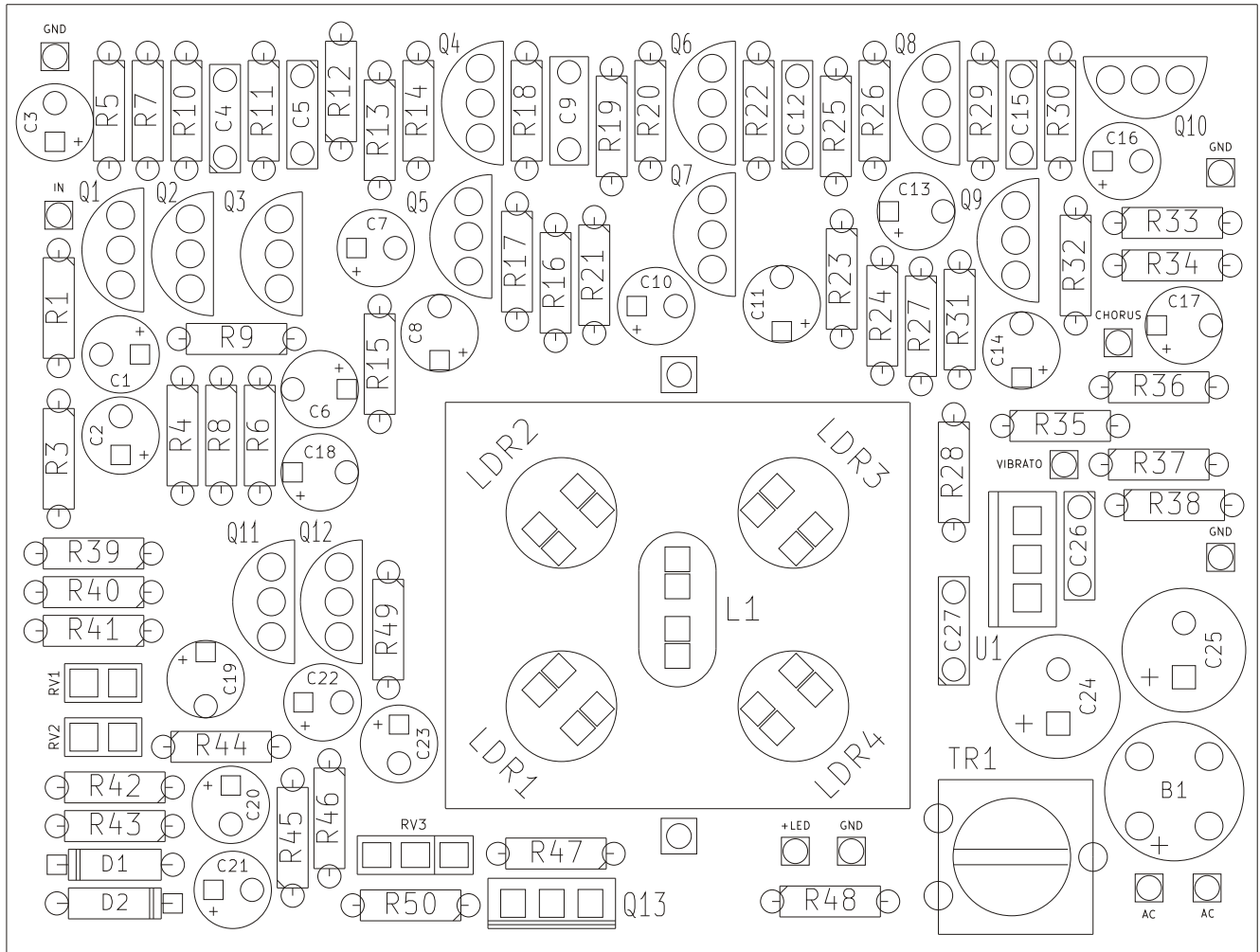
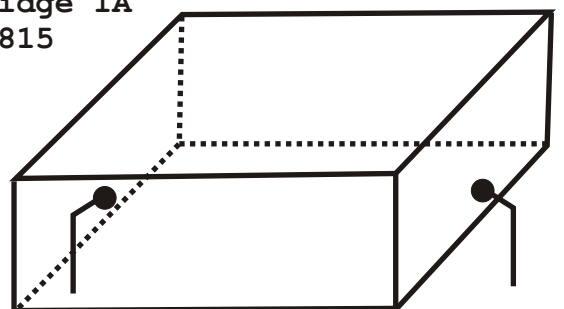


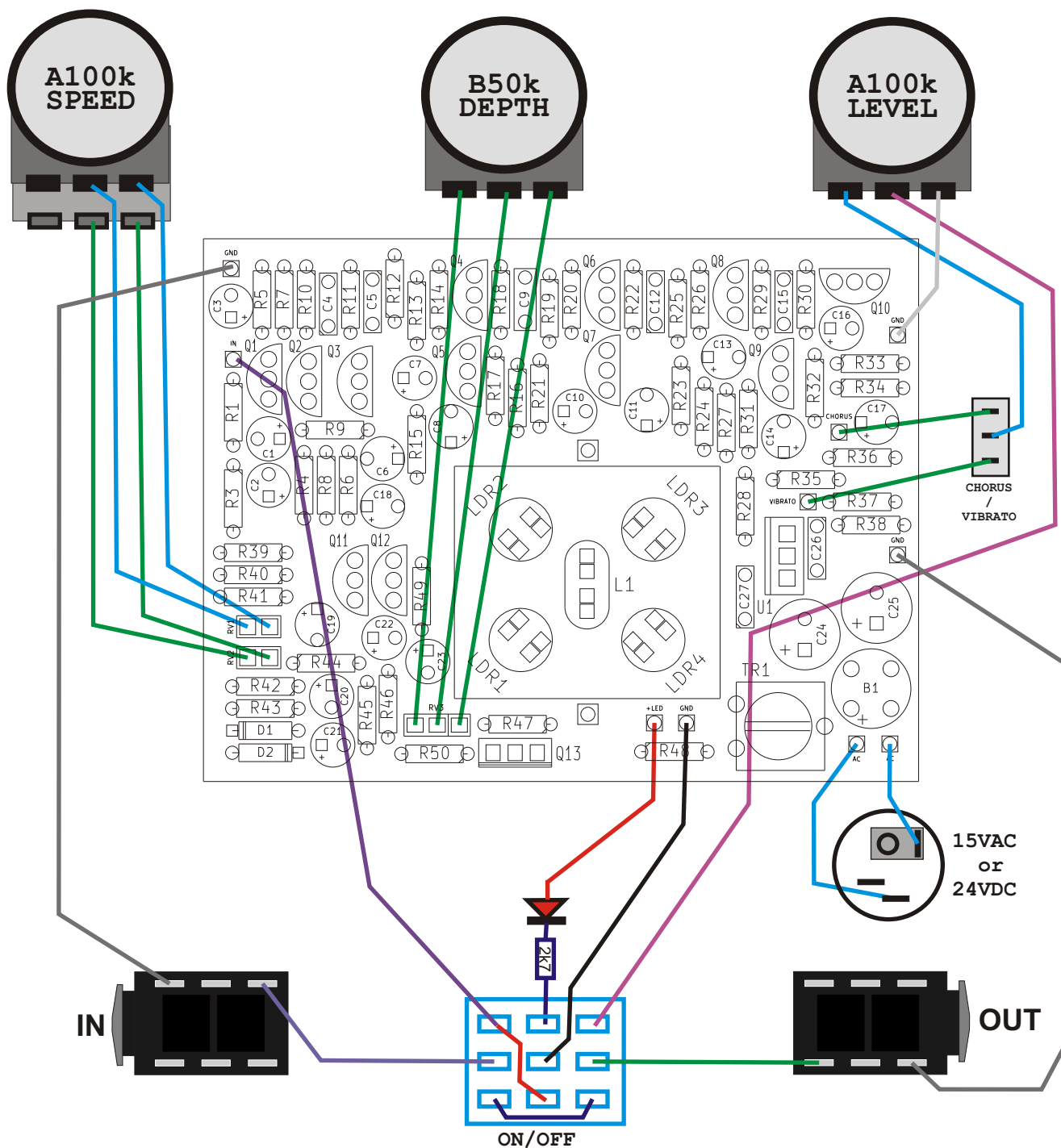
PCB parts placement diagram:



R1	1k	R26	100k	C1	1u	Q1	5088	RV1	1/2	A100k
R3	47k	R27	4k7	C2	1u	Q2	5088	RV2	1/2	A100k
R4	1M2	R28	4k7	C3	1u	Q3	5088	RV3	B50k	
R5	100k	R29	4k7	C4	330p	Q4	5088	TR1	100R	
R6	6k8	R30	68k	C5	15n	Q5	5088	L1	light bulb	
R7	1M2	R31	4k7	C6	1u	Q6	5088		12v 40-80mA	
R8	1k2	R32	100k	C7	1u	Q7	5088	LDR1	5659	
R9	3k6	R33	47k	C8	1u	Q8	5088	LDR2	5659	
R10	47k	R34	22k	C9	220n	Q9	5088	LDR3	5659	
R11	4k7	R35	100k	C10	1u	Q10	5088	LDR4	5659	
R12	47k	R36	100k	C11	1u	Q11	5088			
R13	100k	R37	47k	C12	470p	Q12	5088			
R14	100k	R38	220k	C13	1u	Q13	BD681			
R15	4k7	R39	3k3	C14	1u	D1	4148			
R16	4k7	R40	2M2	C15	4n7	D2	4148			
R17	4k7	R41	4k7	C16	1u	B1	Bridge 1A			
R18	4k7	R42	4k7	C17	1u	U1	7815			
R19	100k	R43	4k7	C18	1u					
R20	100k	R44	220k	C19	1u					
R21	47k	R45	220k	C20	1u					
R22	4k7	R46	4k7	C21	1u					
R23	4k7	R47	100k	C22	10u					
R24	47k	R48	10R	C23	10u					
R25	100k	R49	4k7	C24	470u/25V					
		R50	47k	C25	470u/25V					
				C26	100n					
				C27	100n					



Wiring (bottom view):



Power supply: 15V AC > 200mA or better (for less hum) 24V DC regulated.
 Make light reflecting can from pcb solder side inside.
 Set trimpot TR1 (in dark room) to get light bulb barely flash with
 depth pot on 9'o clock.
 Use metal enclosure connected to ground.

Bill of materials:

Resistors:

10R 1pcs. "R48"
1k 1pcs. "R1"
1k2 1pcs. "R8"
2k7 1pcs. "LED"
3k3 1pcs. "R39"
3k6 1pcs. "R9"
4k7 16pcs. "R11 R15 R16 R17
R18 R22 R23 R27
R28 R29 R31 R41
R42 R43 R46 R49"
6k8 1pcs. "R6"
22k 1pcs. "R34"
47k 8pcs. "R3 R10 R12 R21
R24 R33 R37 R50"
68k 1pcs. "R30"
100k 11pcs. "R5 R13 R14 R19
R20 R25 R26 R32
R35 R36 R47"
220k 3pcs. "R38 R44 R45"
1M2 2pcs. "R4 R7"
2M2 1pcs. "R40"

Potentiometers:

2xA100k 1pcs.
A100k 1pcs.
B50k 1pcs.
100R Trimpot 1pcs.

Other:

Light bulb 12v 40-80mA 1pcs.
Photoresistor 5659 4pcs.
Knobs 3pcs.
Jack socket 2pcs.
DC socket 5.5/2.1 1pcs.
Footswitch 3PDT 1pcs.
Switch MTS102 1pcs.

Capacitors:

330p 1pcs. "C4"
470p 1pcs. "C12"
4n7 1pcs. "C15"
15n 1pcs. "C5"
100n 2pcs. "C26 C27"
220n 1pcs. "C9"

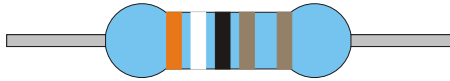
Electrolytic capacitors:

1u 16pcs. "C1 C2 C3 C6 C7 C8
C10 C11 C13 C14 C16
C17 C18 C19 C20 C21"
10u 2pcs. "C22 C23"
470u/25V 2pcs. "C24 C25"

Semiconductors:

1N4148 2pcs.
2N5088 12pcs.
BD681 1pcs.
Mostek 1A 1pcs.
LED 1pcs.
7815 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:

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

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