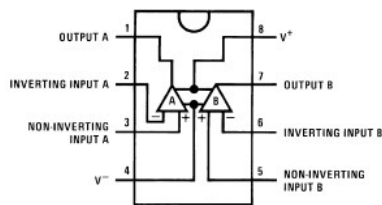


## Manual for the Digital Delay DD-800

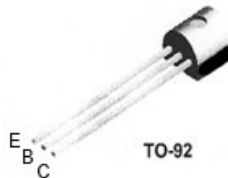
Page 1..3.....	Basics/ BOM
Page 4.....	Introduction
Page 5..6.....	Soldering the pcb
Page 7..8.....	External wirings
Page 9.....	Construction proposal, Tricks
Page 10.....	Appendix

### Connection of some important components

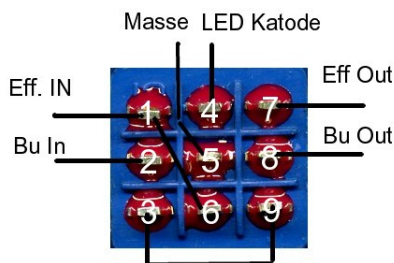
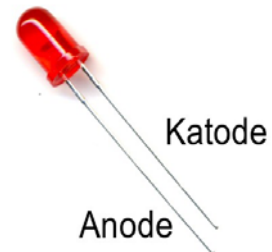


TL072

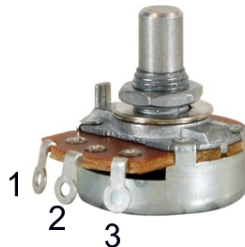
BC 549



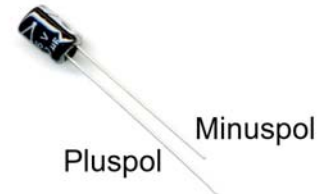
Leuchtdiode (LED)



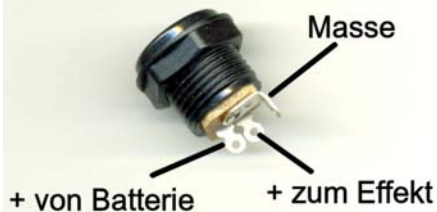
Standard Potentiometer



Elektrolytkondensator






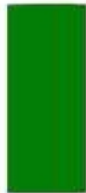






DC-Buchse isoliert



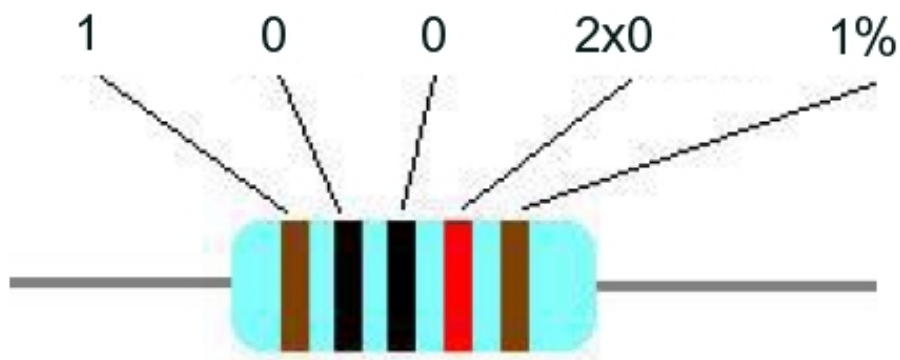
Color table for resistors MF207 FTE52 1% and a example

## Resistor color code

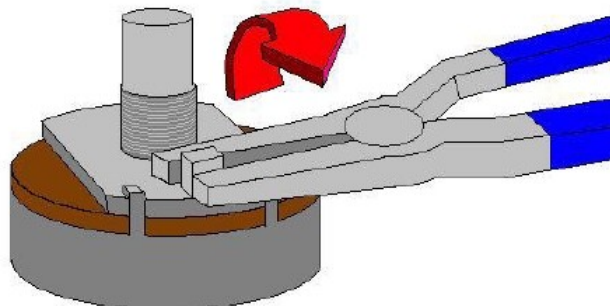
									
0	1	2	3	4	5	6	7	8	9

Example: Resistor MF207 10K 1%

Value: 10000 Ohm = 10KOhm



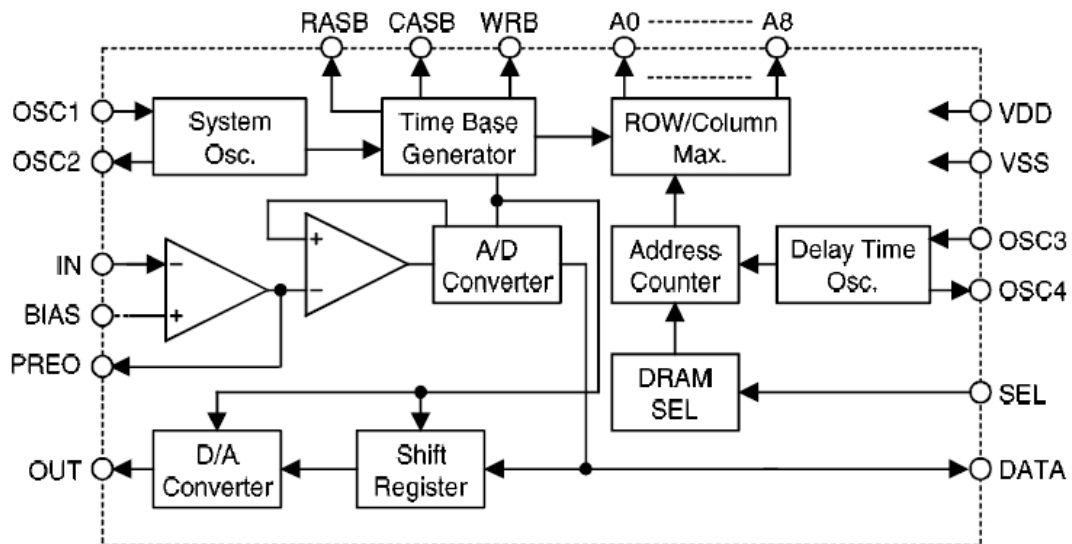
Breaking nose at the potentiometer  
Nase am Poti mit einer Flachzange abbrechen



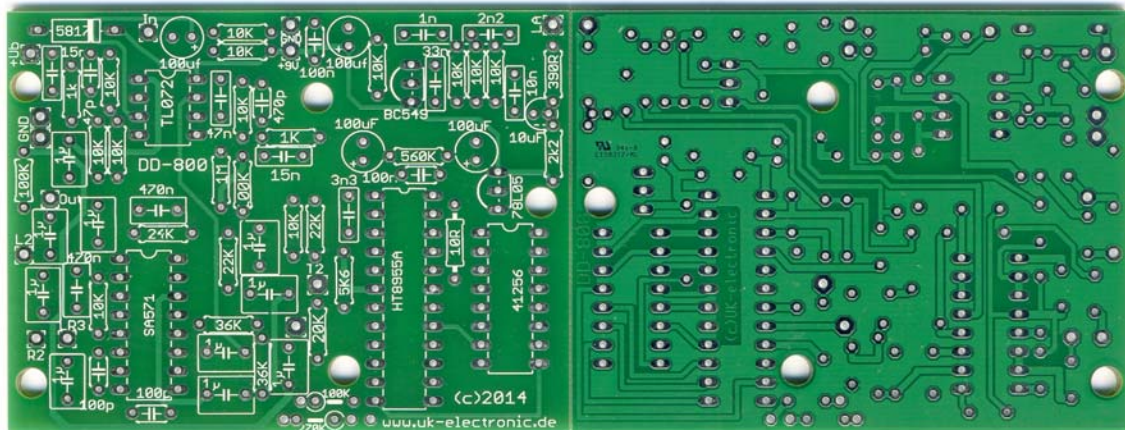
Bill of material	
Quantity	Description
1	Mono jack 6,3mm
1	Stereo jack 6,3mm
1	3PDT Switch
1	LED bezel for 3mm LED Chrome + LED red 3mm Low Current
2	Potentiometer 50K-B (linear)
1	Potentiometer 500K-B (linear)
3	Self adhesive spacer LP (15,9)
1	DC-jack 5.5/2.1mm isolated
1	IC HT8955 + Socket LC24/7.62
1	IC 41256/61256, 71256 e.g. DRAM 256Kx8 + 2 x Socket LC16
1	IC SA571 + Socket LC16
1	IC TL072 + Socket LC8
1	78L05, BC549C, Schottky Diode 5817 or 5818
1	Resistor 10R (brown/black/black/gold/brown)
1	Resistor 390R (orange/white/black/black/brown)
2	Resistor 1K (brown/black/black/brown/brown)
1	Resistor 2K2 (red/red/black/red/brown) – resistor LED
1	Resistor 5K6 (green/blue/black/red/brown)
12	Resistor 10K (brown/black/black/red/brown)
1	Resistor 20K (red/black/black/red/brown)
2	Resistor 22K (red/red/black/red/brown)
1	Resistor 24K (red/yellow/black/red/brown)
2	Resistor 36K (orange/blue/black/red/brown)
2	Resistor 100K (brown/black/black/orange/brown)
1	Resistor 560K (green/blue/black/orange/brown)
1	Resistor 1M (brown/black/black/yellow/brown)
1	Ceramic capacitor 47p (47)
2	Ceramic capacitor 100p (101)
1	Ceramic capacitor 470p (471)
1	MKT 1nF = 0.001µF = (102)
1	MKT 2,2nF = 0.0022µF (202)
1	MKT 3,3nF = 0.0033µF (332)
1	MKT 10nF = 0.01µF (103)
2	MKT 15nF = 0.015µF (153)
1	MKT 33nF = 0.033µF (333)
1	MKT 47nF = 0.047µF (473)
2	Multilayer Capacitor 100nF = 0.1µF (104)
2	MKT 0.47µF (473)
10	MKT 1µF (105)
1	Electrolytic cap RASM 10µF/25V - 35V
4	Electrolytic cap RASM 100µF/16V
1	Some coloured wire
1	PCB „DD-800“
1	Battery connector

## Short circuit description

The presented Delay is a digital delay same as the PT-80, but he which uses a RAM in which the NF-digitized signal is stored and after a certain time by a D / A converter output again. In contrast to the PT2399 with internal static RAM (44Kx8) are here 256Kx8 an external dynamic RAM used (Internally, the chip with 10-bit). This allows a much higher elongation time of about 0.8S be stored. Since the sampling frequency is about 25KHz also needs the memory content of DRAMs not refreshed not be refreshed periodically, which would require less than a clock speed of 16K.



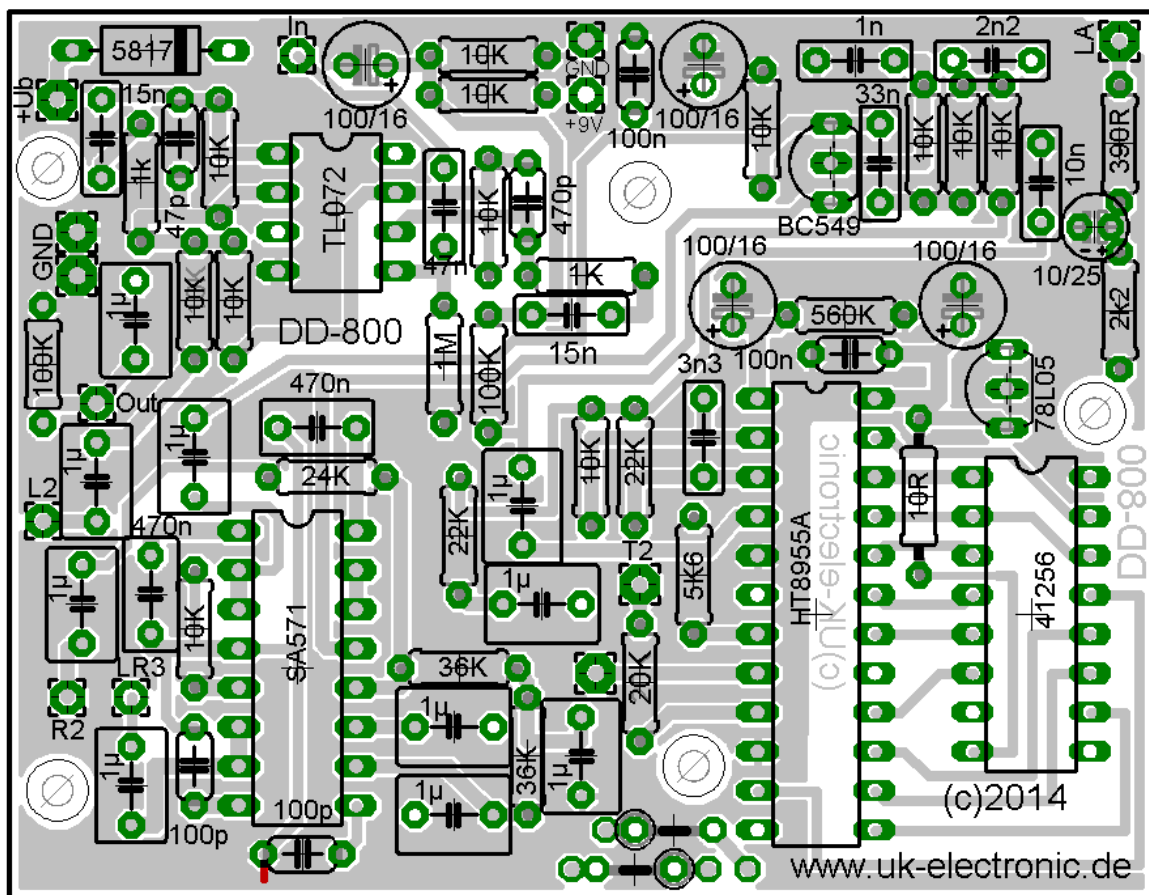
Picture of the PCB Top/Bottom



## Assembled printed circuit board

On the PCB there are unfortunately 2 errors which are easy to fix (cut at 47 nF) is made. And at the bottom 100pF capacitor turn it to the left leg and solder it firmly on the ground plane.

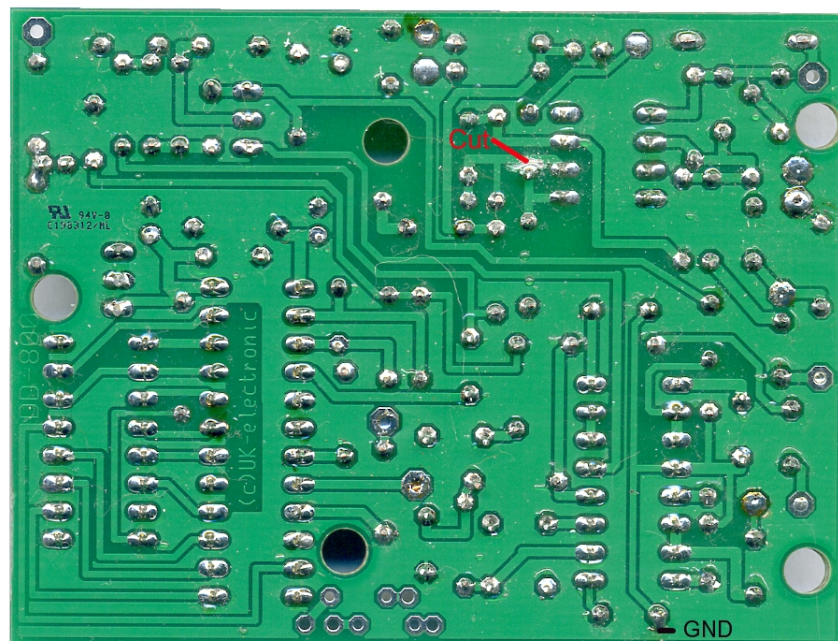
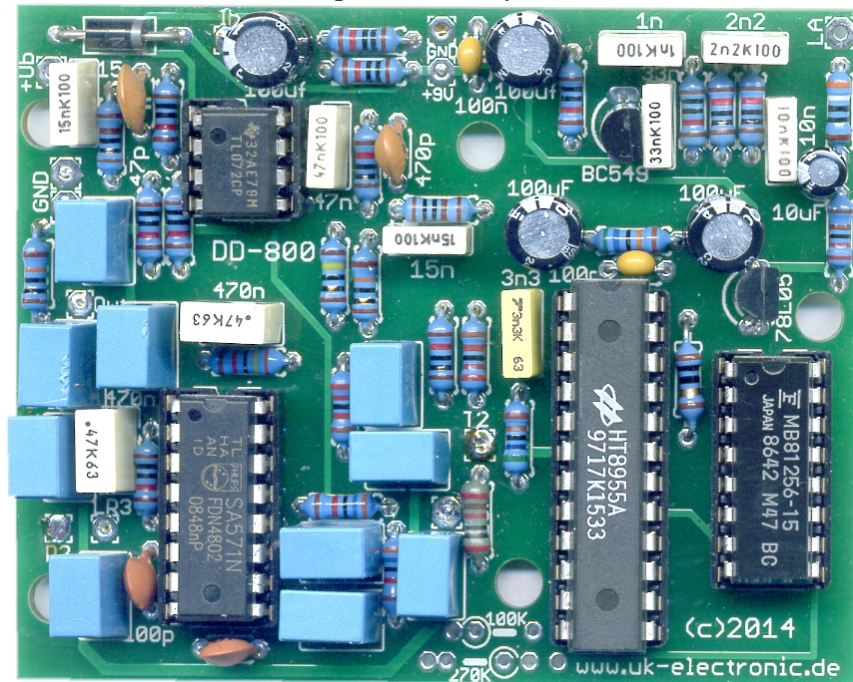
The PCB using the placement plan shown below stocked. For this we should start with the lowest components to be fitted, ie First, the resistors, diodes, capacitors, sockets and finally the voltage regulator and the transistor. Clean work, in particular the implementation of the solder joints should have top priority to generally be eliminated from the outset assembly and soldering defects. Since it is a through-hole two-sided board, you should work quietly and concentrated, with a later replaced by components for an untrained hobbyists can be quite adventurous and usually the PCB then is the victim.



## Löten/ soldering

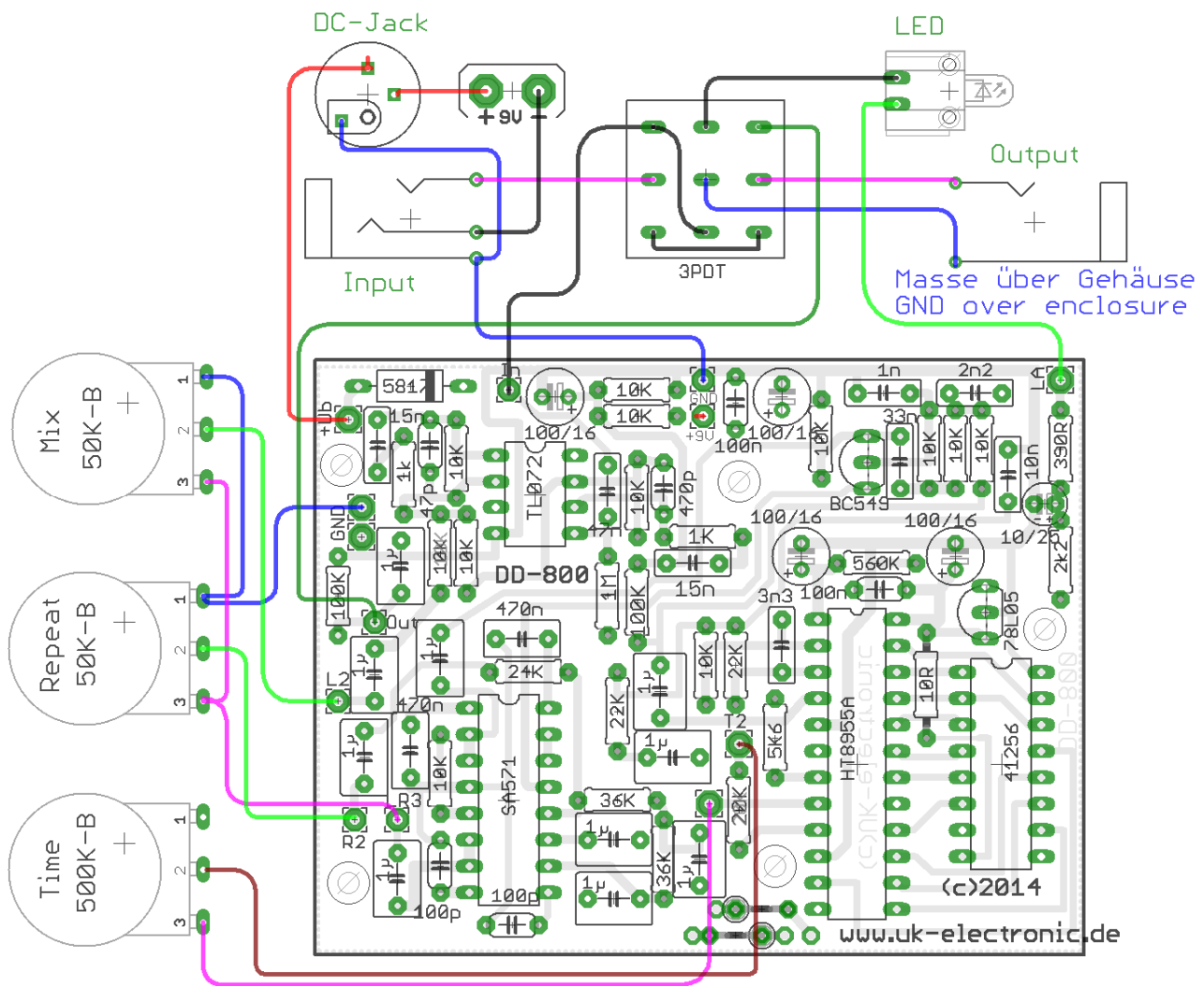


Complete assembly board



After the board is fully equipped carried the preparation of ready-drilled enclosure. There are also all sockets, potentiometers, switches and LEDs in enclosure. The most you can do everything already prewired in the enclosure, then only the relevant points must be soldered to the circuit board at the end.

## External wiring standard version



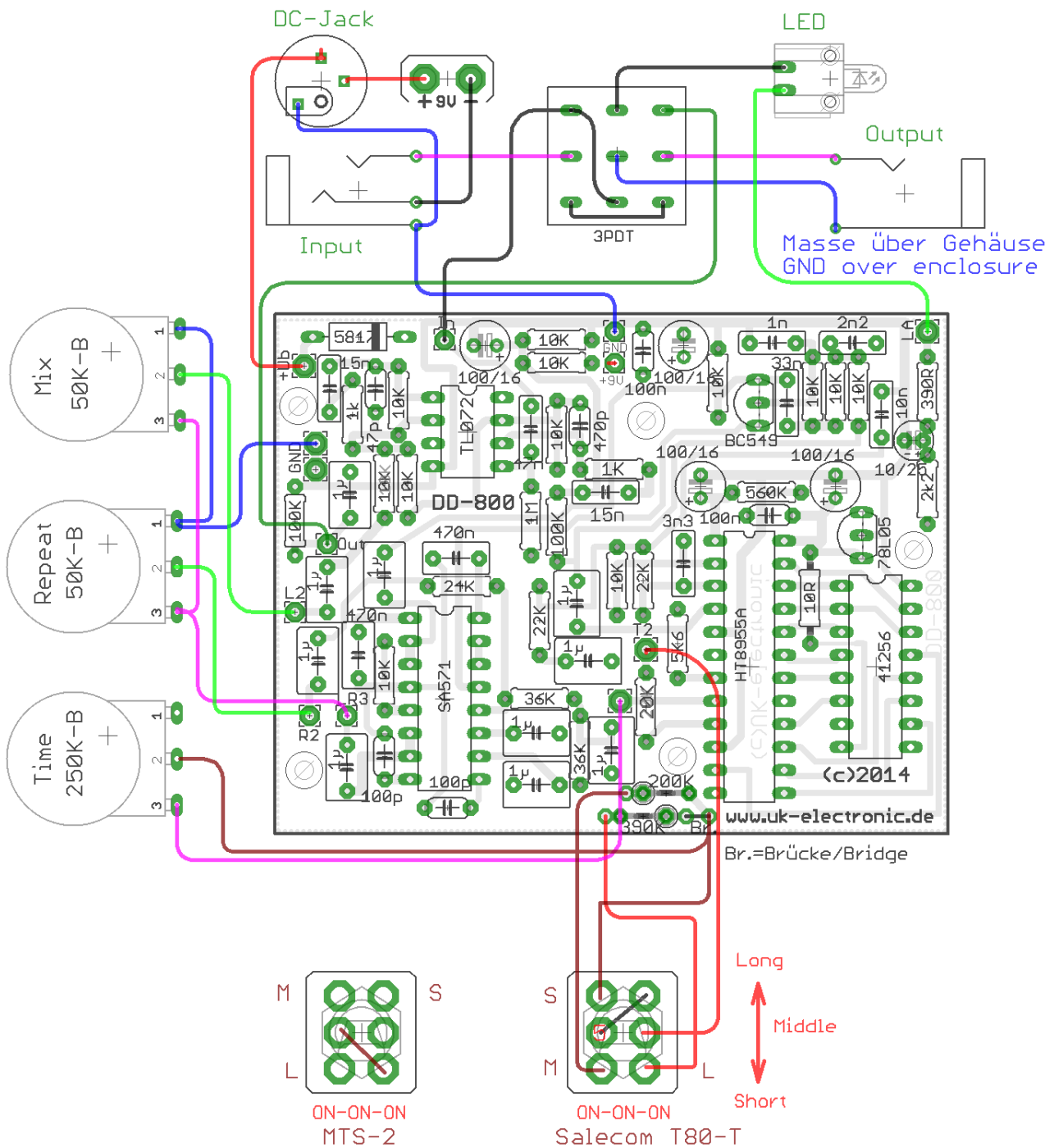
A further possibility is to divide the time potentiometer by means of external resistors, and a switch with the function ON-ON-ON. So you can then divide the delay time range in the areas of long, medium and short. To that end, the switch, the two additional resistors 200K and 390K with a potentiometer 250K-B be connected. The two resistors can be placed on the board with. (The silkscreen is here, however, 100K and 270K). The values were changed empirically.

The times are then approximately:

- Long 350 to 800ms
- Middle 200 to 450ms
- Short 30 to 250ms

**This is a option and not delivered with the kit.**

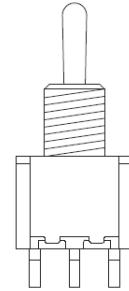
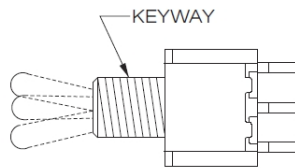
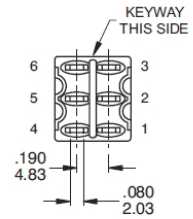
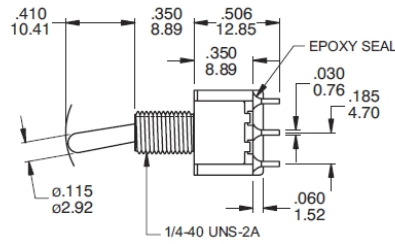
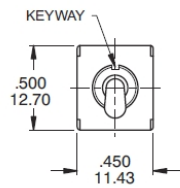
### Wiring for different delay times with a switch



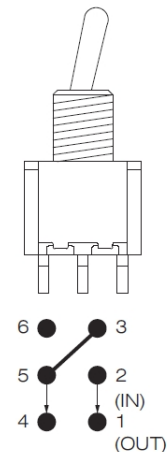
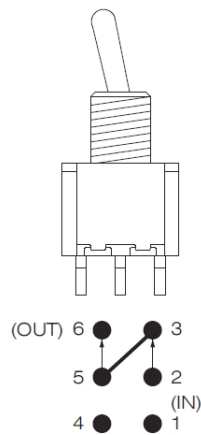
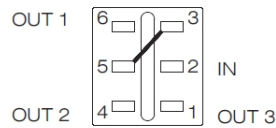
The attachment of the circuit board in the enclosure by means of the supplied self-adhesive spacer. Should again expect in the LF signal is a noise (coming from the clock of HT8955A), the PCB should be rotated during installation (HT8955A + DRAM) on the top left.



## DPDT



SINGLE POLE, 3 POSITION



The following drill diameter should be used:

Potentiometer : 7mm

Audio jacks : 9.3mm

3PDT-Switch: 12mm

DC-jack: 12mm

LED bezel, Toggle Switch: 6mm

As a enclosure the size 1590BB, GEH is 090 or greater used. However, with a little skill can be worn all in a enclosure 125B, when the board is simply isolated on the potentiometers. For this purpose, the board is easily installed wrong-headed.

With clean design and proper wiring, the effects device should work immediately. For any questions we are available at any time.

