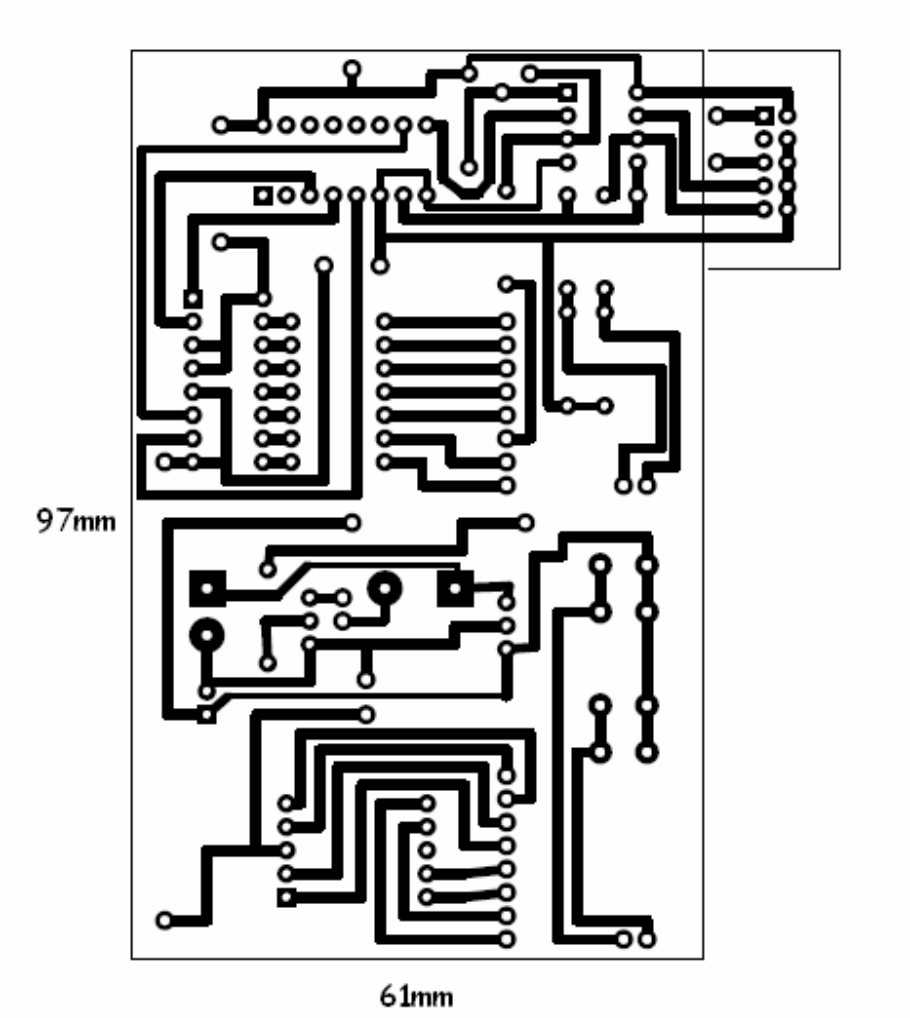
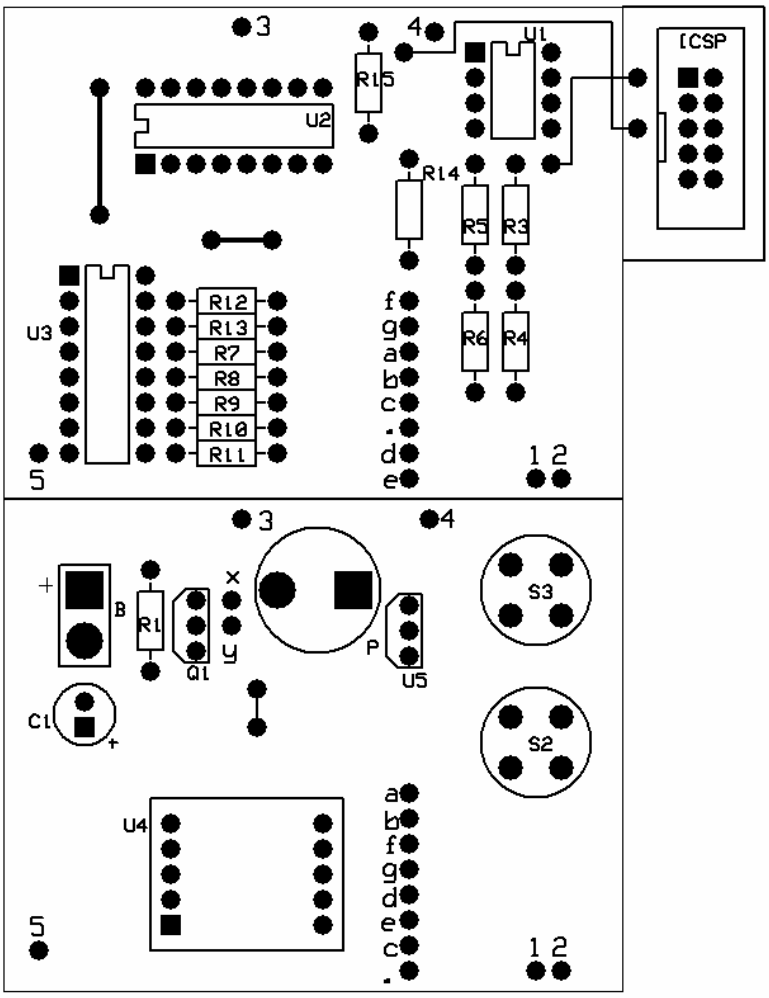
DIY Digital Metronome 1.0

PCB



(Needs to be printed to scale)

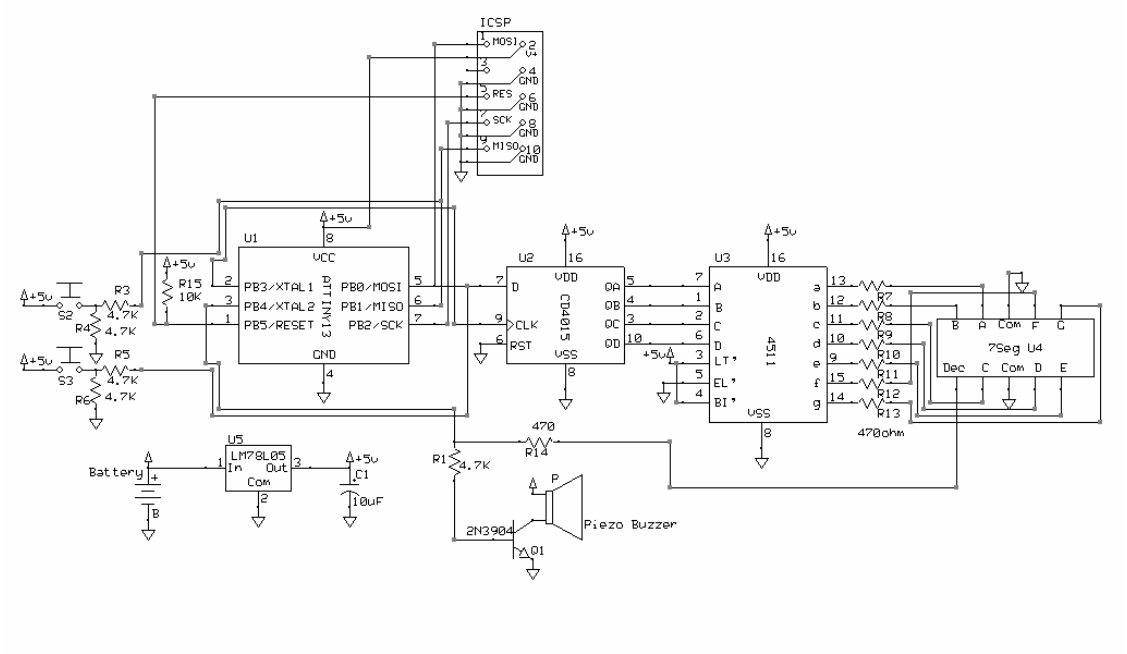
Layout



Parts List:	
B	Battery (9V/12V etc)
C1	10uF
ICSP	10-pin Header
P	Piezo Buzzer
Q1	2N3904
R1	4.7K
R3	4.7K
R4	4.7K
R5	4.7K
R6	4.7K
R7	470
R8	470
R9	470
R10	470
R11	470
R12	470
R13	470
R14	470
R15	10K
S2	Pushbutton
S3	Pushbutton
U1	ATTINY13
U2	CD4015
U3	4511
U4	7Seg
U5	LM78L05

Notes:
For volume control, connect a 50K Log pot to points **x** and **y**. Otherwise short **x** and **y**.
Board is designed to be cut in the middle, and one board placed above the other.
Once the chip has been programmed, the piece of board with the ICSP connector can be removed if you wish.
U4 is a common cathode 7-segment LED display.
The battery should match the Piezo buzzer you are using. I.e. if you are using a buzzer that needs 12V, then that is the battery voltage you should use. As long as the battery is above about 6V, the circuit should run OK.

Schematic



Program

The .hex program file for the ATTiny13 can be downloaded from:
http://www.geocities.com/race_driver205/metro.x
(rename the file to “metro.hex” when you have downloaded it)
The C program code is available here:
http://www.geocities.com/race_driver205/metro.c