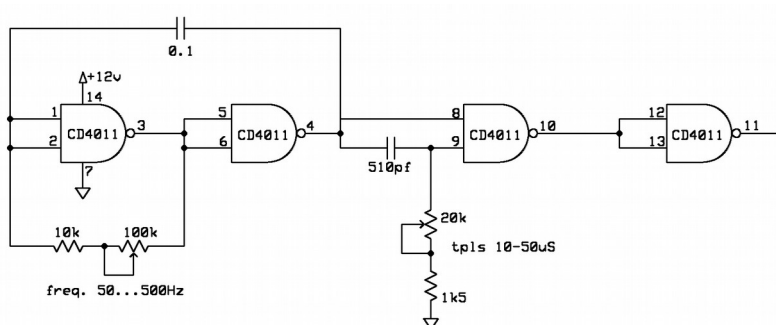
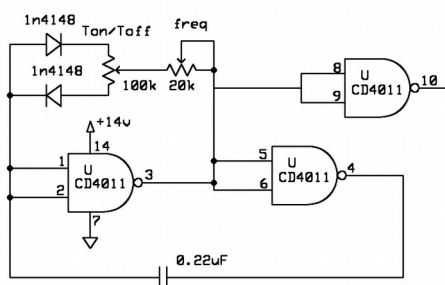


## Table of Contents

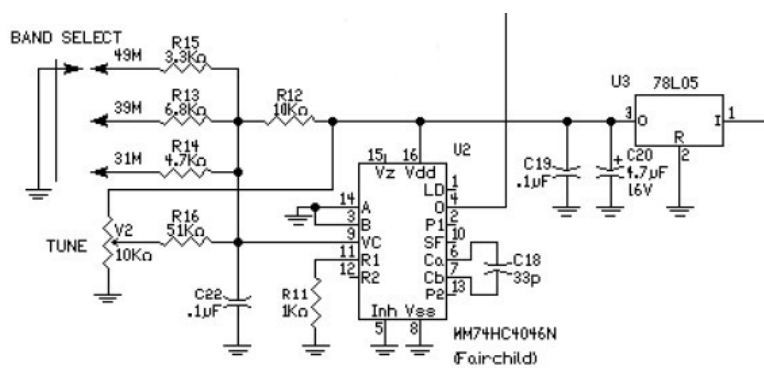
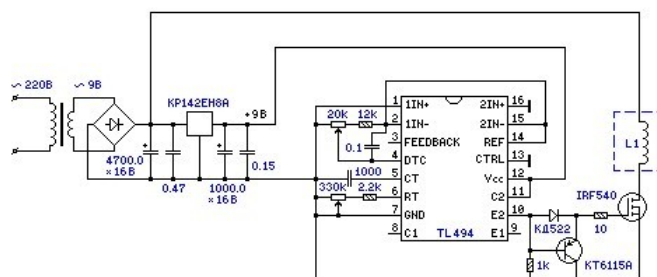
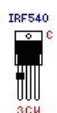
|                                 |    |
|---------------------------------|----|
| Pulse generators.....           | 2  |
| Sin generators.....             | 4  |
| Phase shift / analog delay..... | 5  |
| Tre and saw-tooth.....          | 5  |
| PWM.....                        | 6  |
| Noise.....                      | 7  |
| Auto gen.....                   | 8  |
| MOSFET drivers.....             | 9  |
| Triac driver.....               | 9  |
| Push-Pull.....                  | 10 |
| Half-bridge.....                | 11 |
| Full bridge.....                | 12 |
| Zero crossing detectors.....    | 13 |
| Current source.....             | 14 |
| Step-up.....                    | 15 |
| Invert.....                     | 16 |
| Step-down.....                  | 17 |
| DC-DC.....                      | 17 |
| PLL.....                        | 19 |

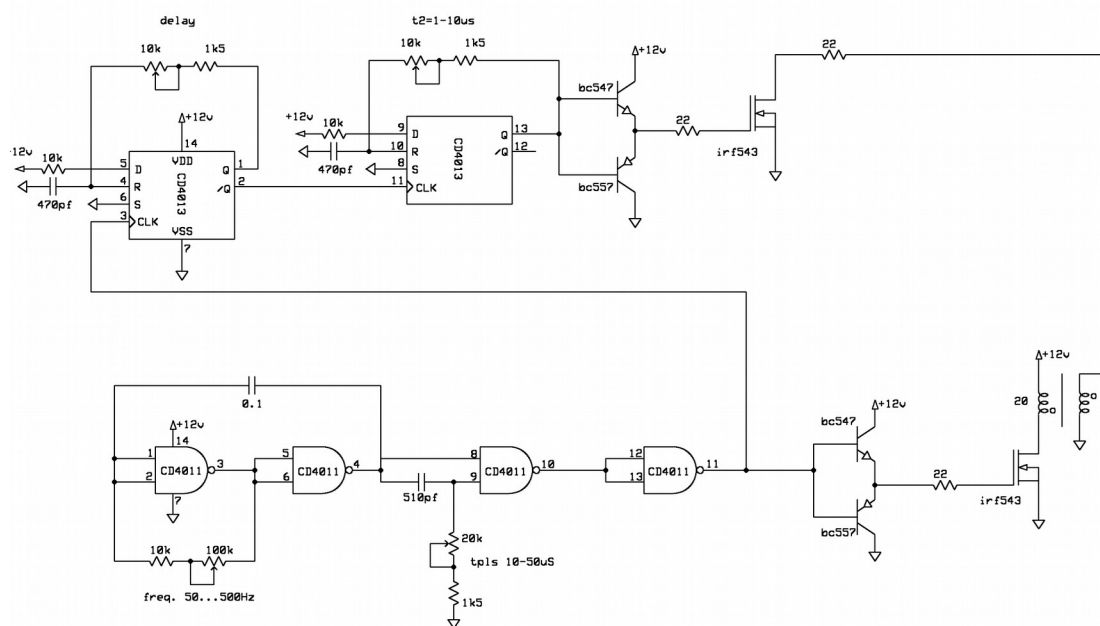
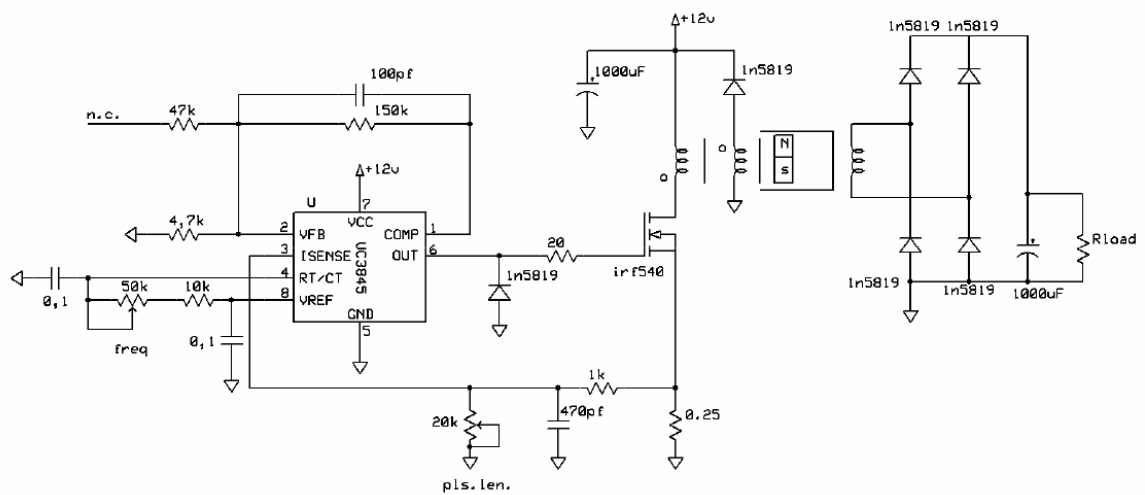
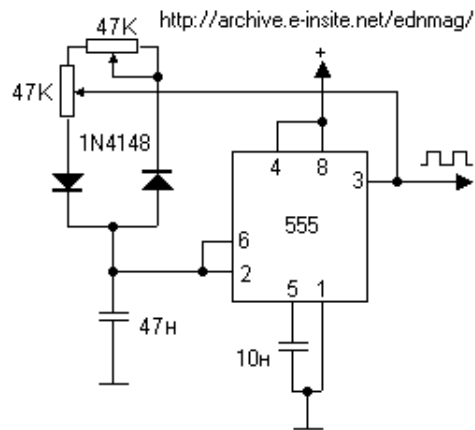
## Pulse generators



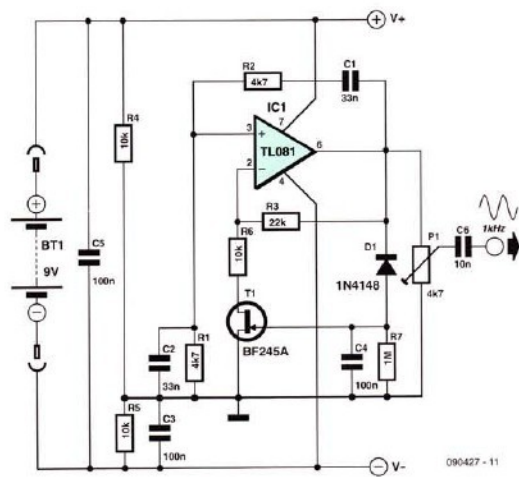
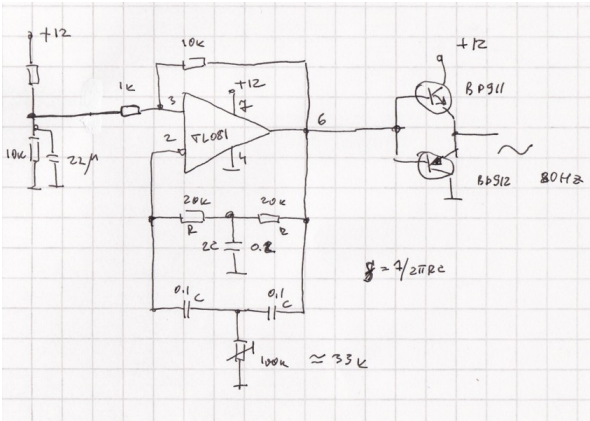
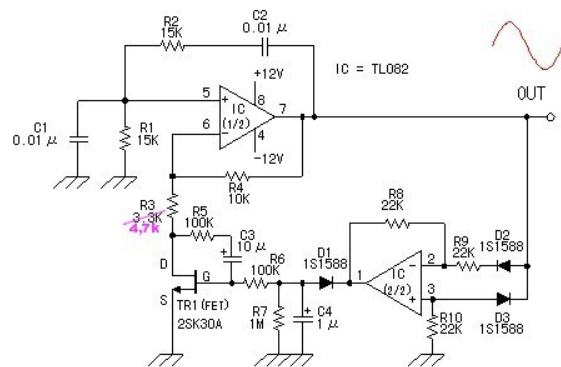
**TL494**  
WWW.MATRI-X.RU

www.MATRI-X.BU

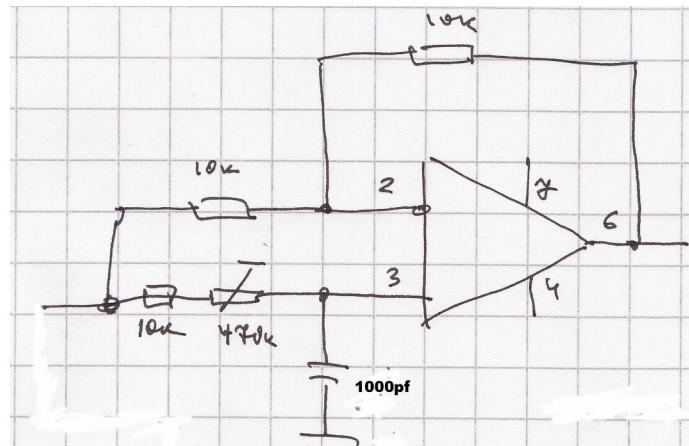




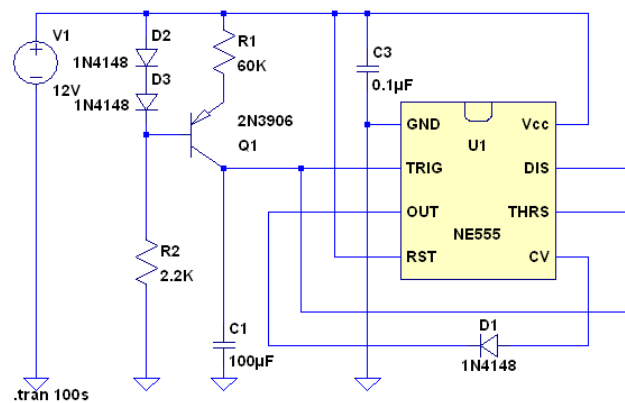
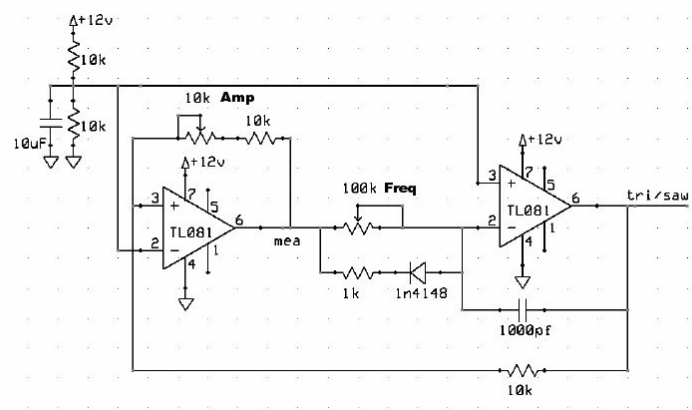
# Sin generators



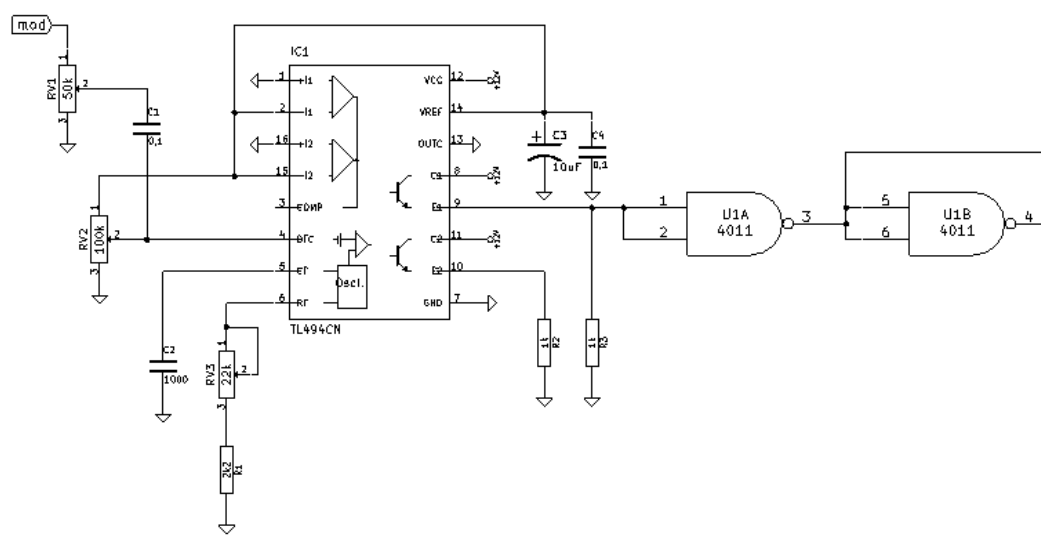
## Phase shift / analog delay



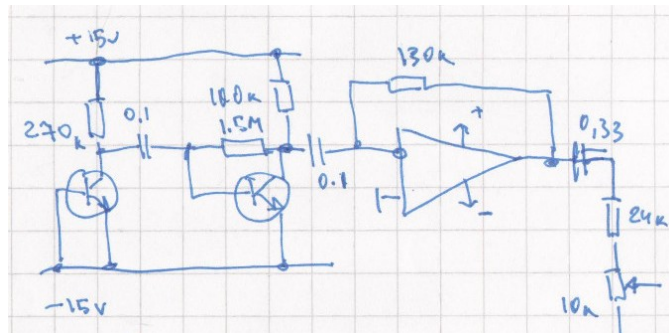
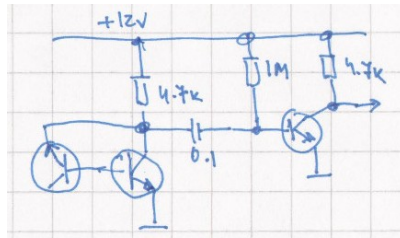
## Tre and saw-tooth



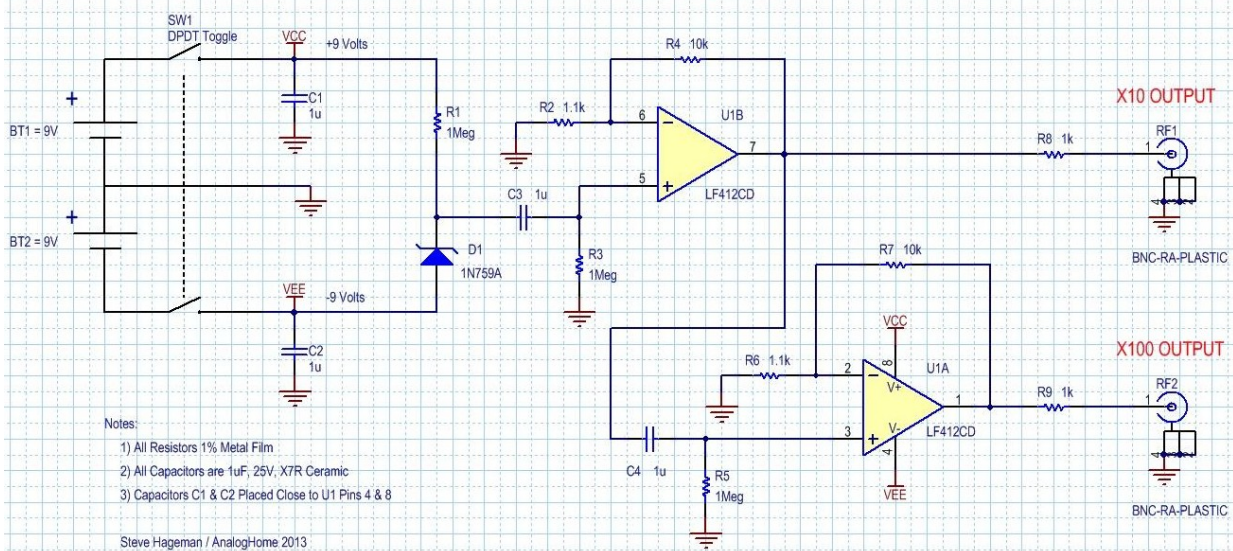
# PWM



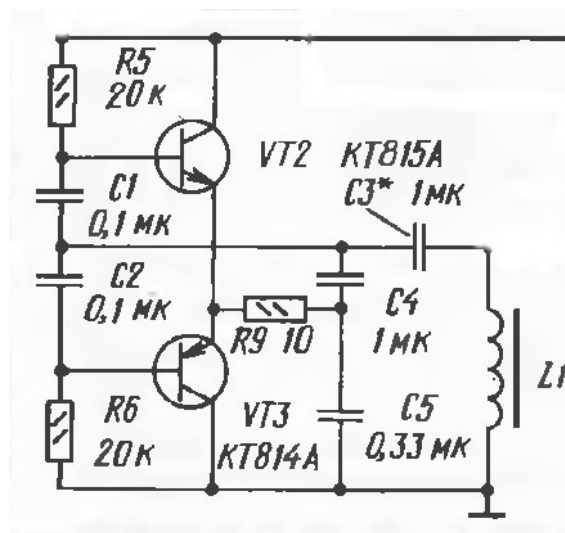
# Noise



## Low Frequency White Noise Generator



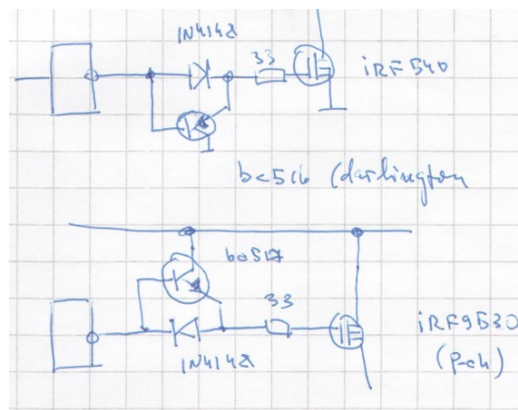
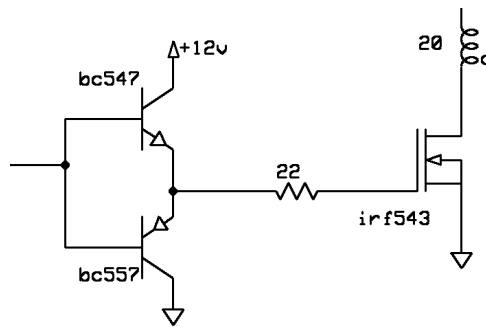
## Auto gen



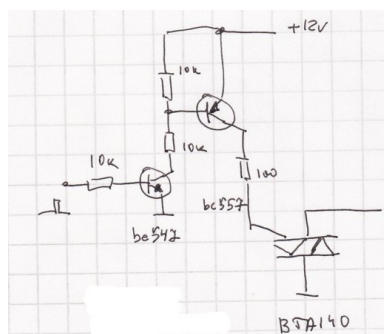
C3 0.01uF  
C4 0.1uF  
C5 0.033uF



## MOSFET drivers



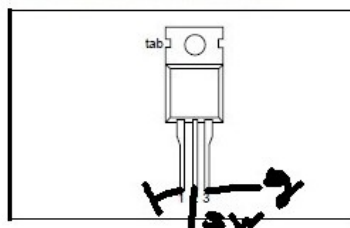
## Triac driver



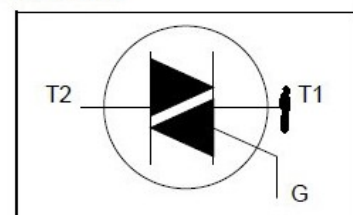
### PINNING - TO220AB

| PIN | DESCRIPTION     |
|-----|-----------------|
| 1   | main terminal 1 |
| 2   | main terminal 2 |
| 3   | gate            |
| tab | main terminal 2 |

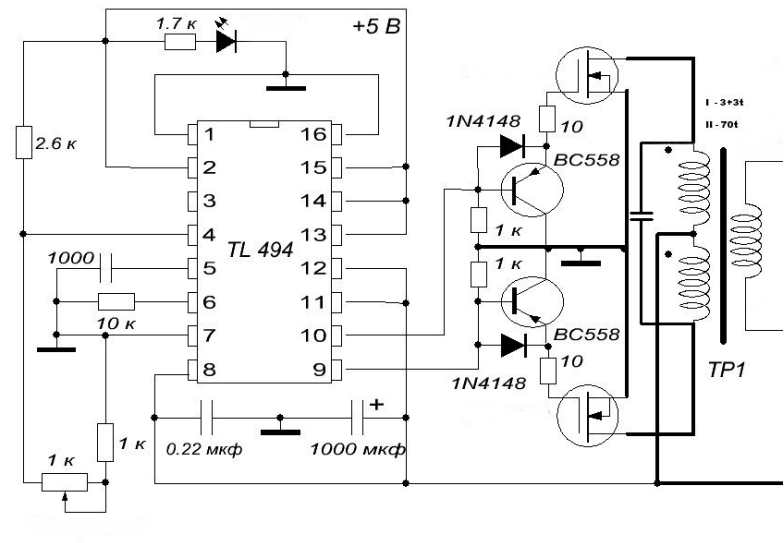
### PIN CONFIGURATION



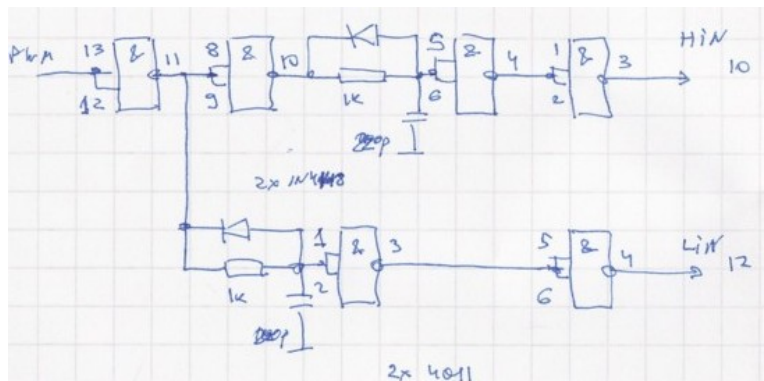
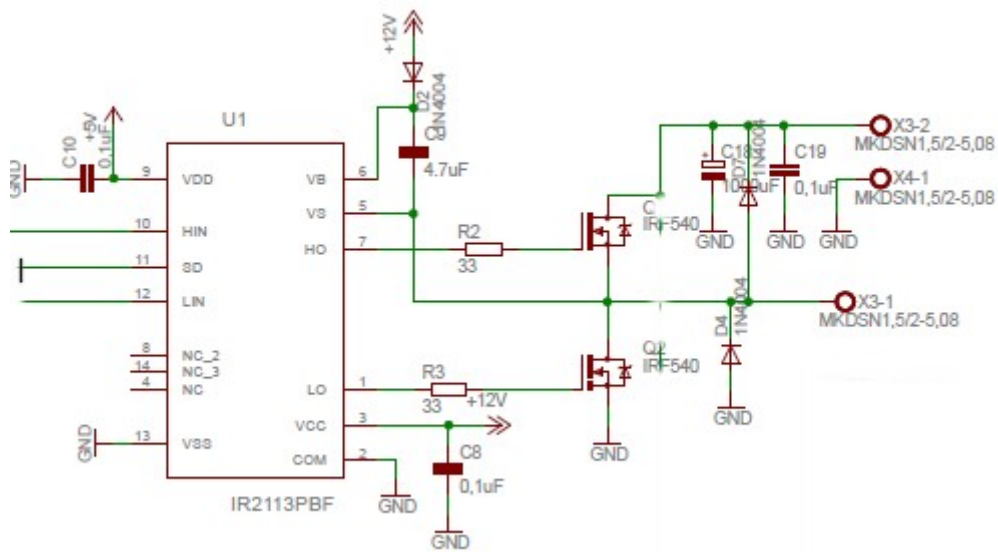
### SYMBOL



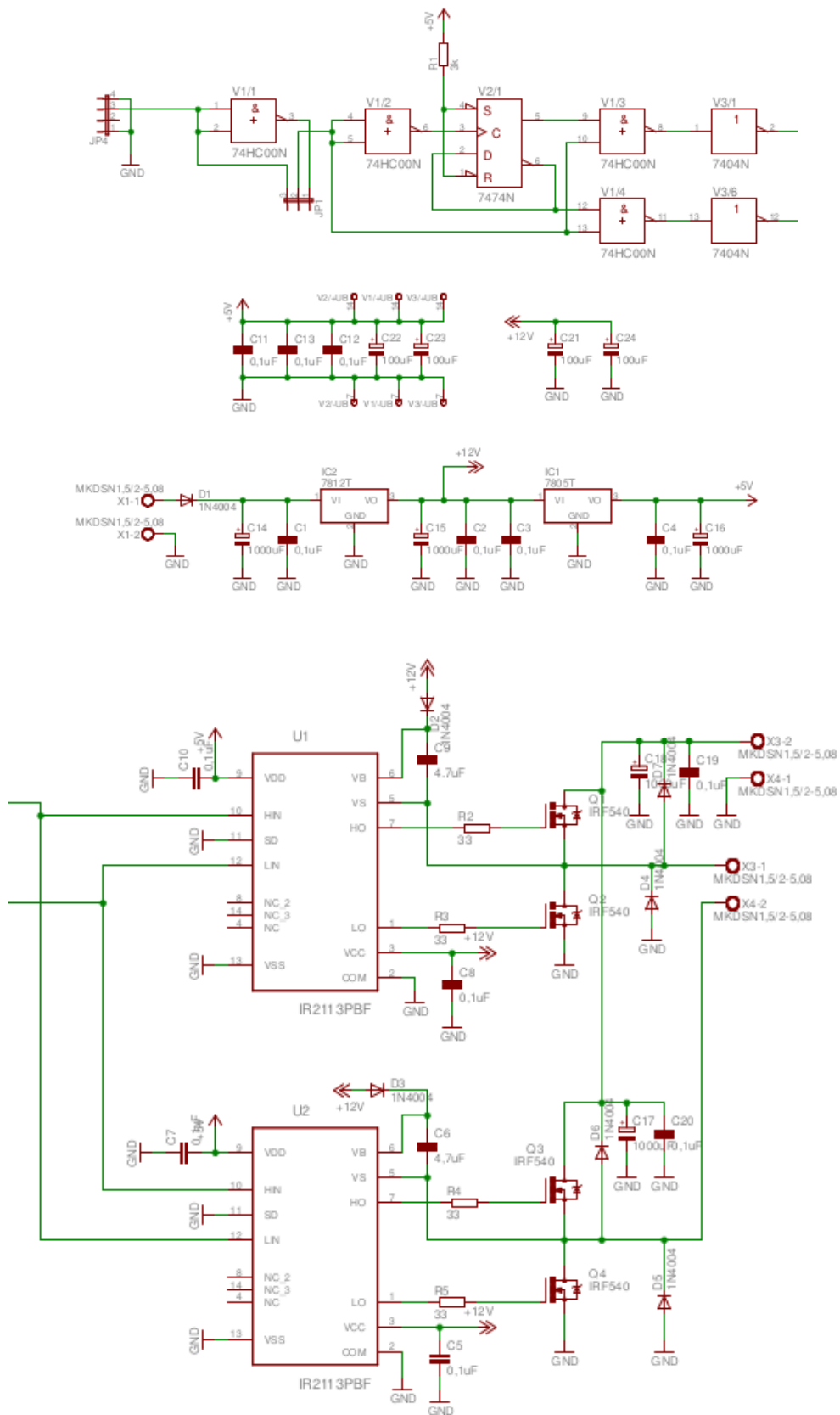
# Push-Pull



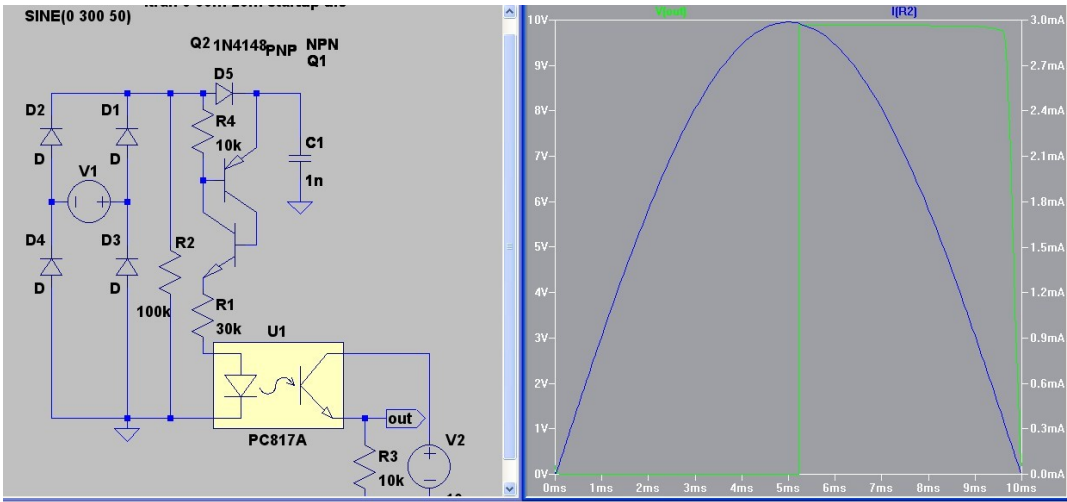
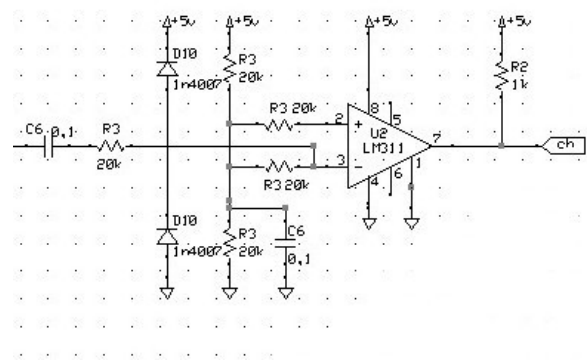
# Half-bridge



# Full bridge

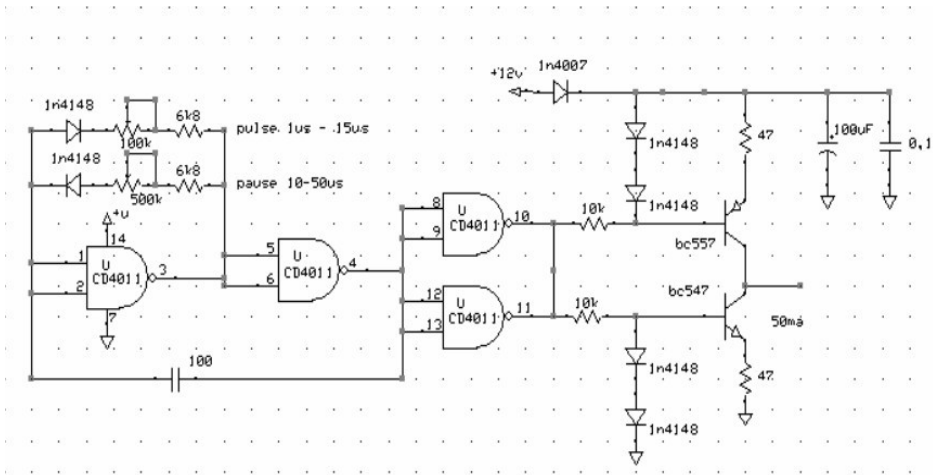
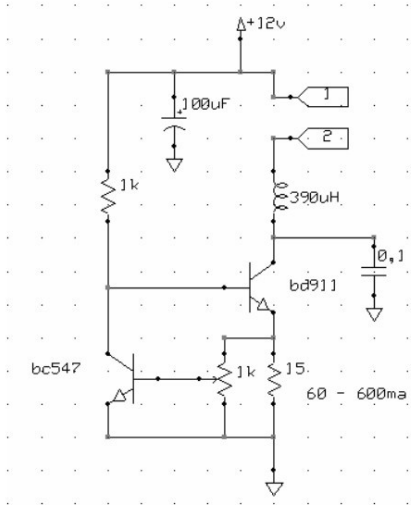


# Zero crossing detectors

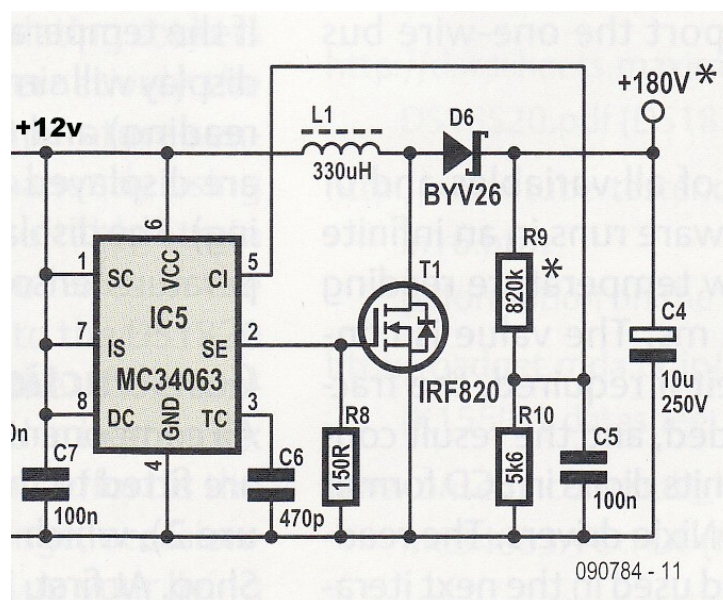
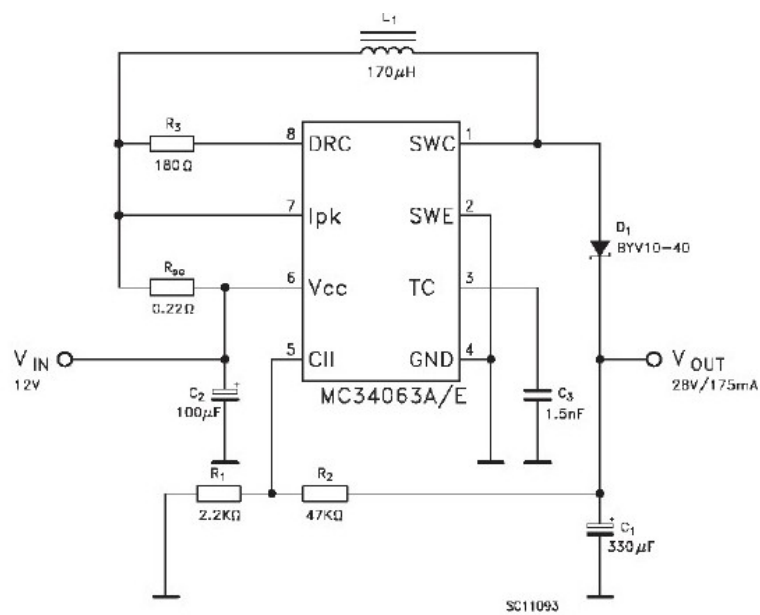


# Current source

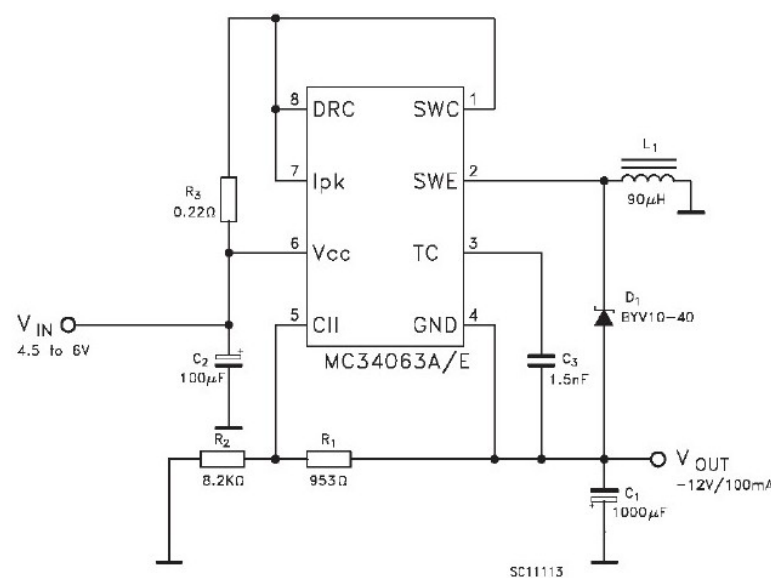
current source



# Step-up

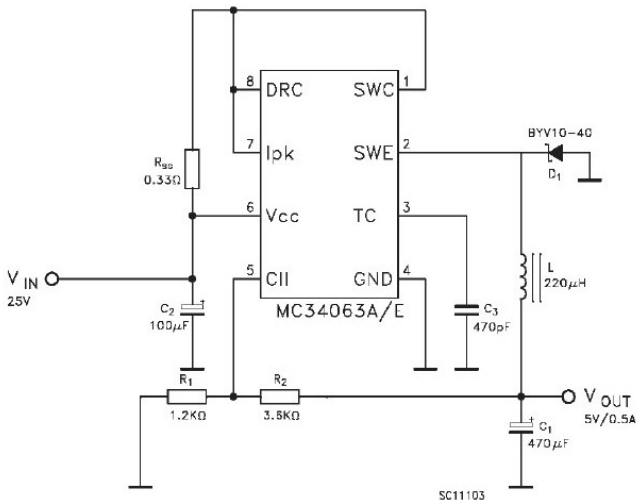


# Invert

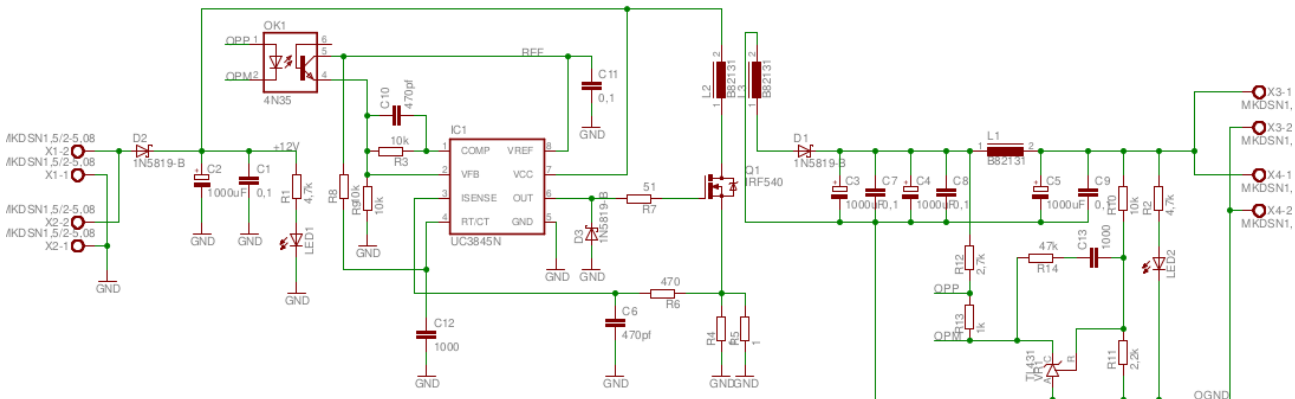




## Step-down



## DC-DC





# PLL

