



FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

POWER AMP. OCL 50W R1% CODE 660

LEVEL 3

This circuit is the main amplifier which using a circuit the end stage is always set to class AB.

Specification:

- Power supply : +35VDC and -35VDC max. / more then 3A.
- Frequency response : 10 to 100 KHz (± 1dB)
- Input sensitivity : 1Vrms. - Input impedance : 15KΩ
- Output power : 50Wrms class AB @ 4 or 8Ω
- Total harmonic distortion : 0.02%
- Dimension : 4.50 x 1.78 inches.

How it works:

Connect TR1 and TR2 as differential amplifying circuit. TR3 acts as predivider. TR8 and TR9 as drivers. TR10 and TR11 amplify output. TR4 limits current. TR5 and TR1 acts as set the bias for inert current. TR6 and TR7 prevent TR10 and TR11 from damage due for over current supply. This circuit is direct coupling designed except INPUT. Input signal will pass C1 to TR1 for amplifying with controlling by TR2. Amplifying ratio is R10 divided by R5. Signal will pass the collector to TR1 sent to TR3, signal from TR3 then will transfer to TR8 and TR10 for amplifying positive input signal while TR9 and TR11 amplify negative input signal. The amplified signal will finally be transferred toward speakers.

PCB assembly:

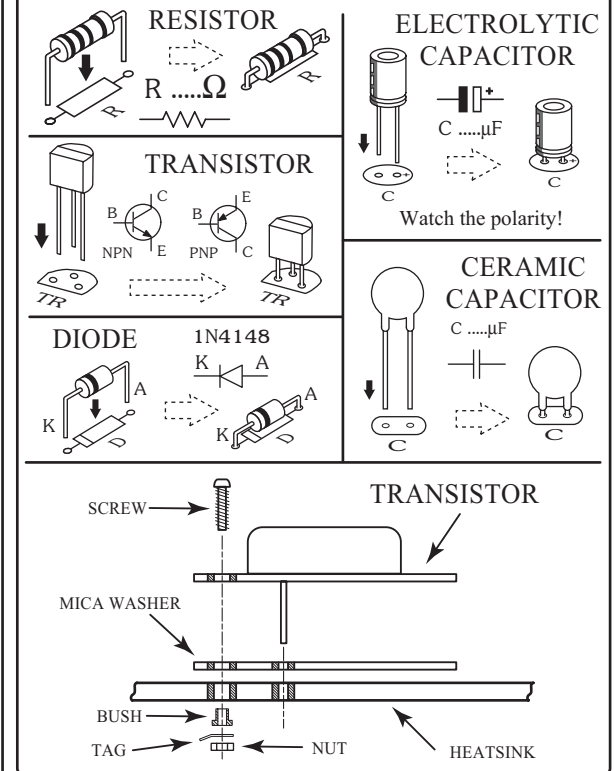
Shown in Figure 3 is the assembled PCB. Starting with the lowest height components first, taking care not to short any tracks or touch the edge connector with solder. Some tracks run under components, and care should be taken not to short out these tracks. If the pins will not enter the holes with ease, use a small drill to slightly enlarge the opening. All components with axial leads should be carefully bent to fit the position on the PCB and then soldered into place. Make sure that the electrolytic capacitors are inserted the correct way around. Some components are particularly sensitive to heat (ie: Transistors, IC's, diodes etc.) extra care must be taken to only apply the iron for as little time as possible, using a pair of pliers to grip the leads will help conduct heat away. Trim components leads with wire cutters to prevent excess lengths causing a short circuit. Now check that you really did mount them all the right way round!

Testing:

In the circuit used transformer 24-0-24 adaping to DC 35-0-35. Adjusting VR1 to the center, shorting input to ground and giving the supply. Stopping the supply if there is burst smelling. Measuring the voltage at SP, should lesser then 0.5 volt. Under normal condition, connect the speaker with SP and input signal, then increasing the signal and listening the feedback. In order to adjust inert current, stop supply, take off speaker and jump input to ground, take off the collector of TR

2N3055. Then measuring current by meter, positive pole connected at +35V and negative pole at the collector of TR. When finishing, give the supply to the circuit. Adjust current at VR1 till we can read 40mA current, then taking off supply generator and reinstalling. If it is 50W MONO circuit, it is needs transformer rate 3A. and super tone control mono.

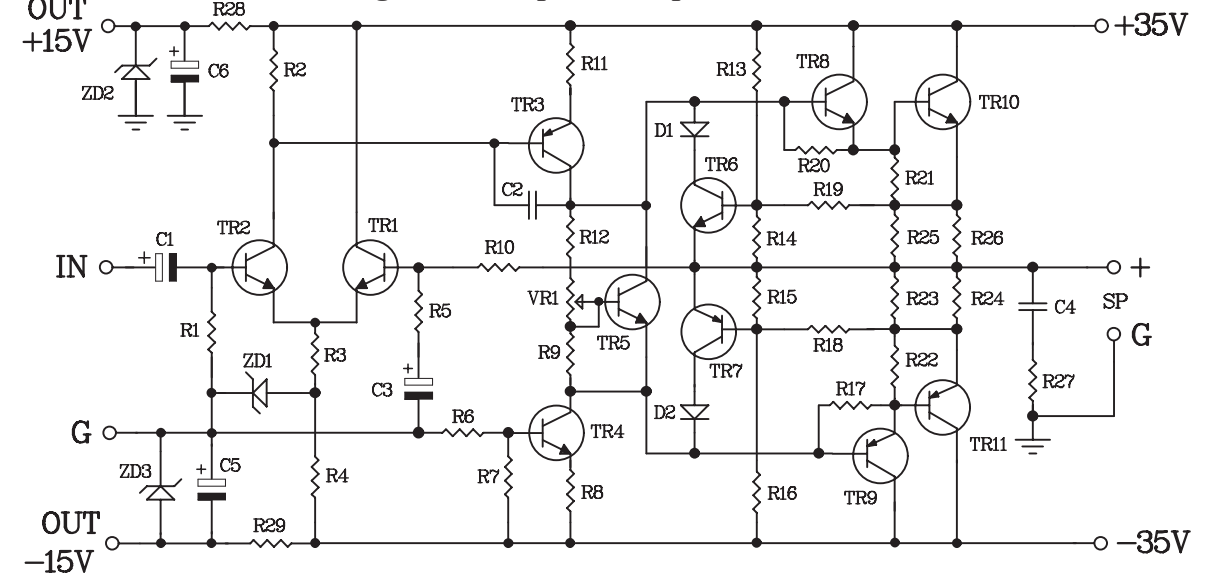
Figure 1. Installing the componants



Troubleshooting:

The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted in the wrong places. Make sure that all the polarised components have been soldered the right way round.

Figure 2. The power amp OCL 50W R1% circuit



SPEAKER

Figure 3. Connections

