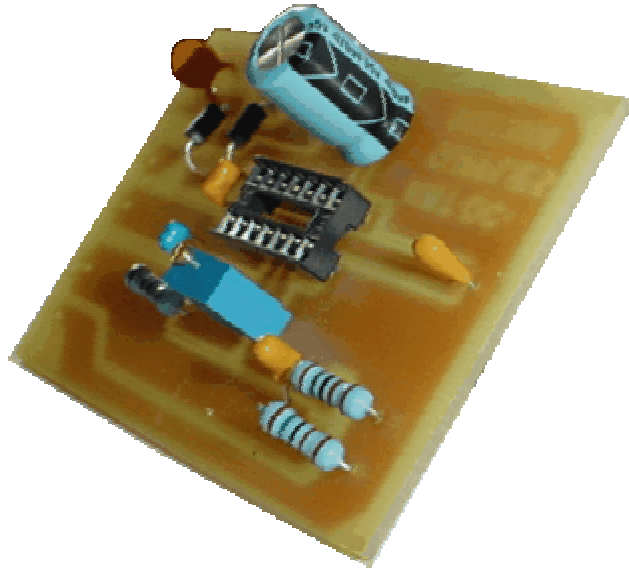


KBT-DC-SUPPLIES 07252005

Assembly Instruction Manual



Prepared for:

PJ2T
Thomas F. Kravec, W8TK
1282 McCoy Rd.
Columbus, OH. 43220

Prepared by:

Garrey, KB7KBT

Kb7kbt@kbt-dc-supplies.com

<http://www.kbt-dc-supplies.com/>

KBT-DC-SUPPLIES 07252005

Parts List

**Because we get the parts a lot cheaper, these resistors will need to have their values checked because the color codes are sometimes wrong.
The values do not have to be exact, just close.**

R0 1.8K

R1 1.5K

R2 2.7K

R3 5K pot

C1 1.2 or 1.5 tantalum cap

C2 1.2 or 1.5 tantalum cap

C3 250 – 450 microfarad electrolytic cap

C4001 mf ceramic disc cap

C501 mf ceramic disc cap

C6 220-pf Mylar cap

D1 1N4001 – 1N4004 silicone rectifier diode

D2 1N4001 – 1N4004 silicone rectifier diode

IC1 UA723CN or equiv.

IC1 Socket

Please watch the polarity of the electrolytic cap and the tantalum caps. The positive leg of the tantalum caps is usually longer for easier identification. Some have a + on their side at the positive leg.

Please watch that the 14-pin IC socket is inserted into the kbt-dc-supplies 02272006 in the correct direction paying particular attention to the orientation of pin number one.

Please make sure that the main filter capacitor to the power supply and the 470mf on the PCB are drained. If they are not, it will destroy the 723 upon insertion.

AC – One side of the transformer secondary

AC – The other side of the secondary of the transformer

Vo – goes to the driver transistors base pin

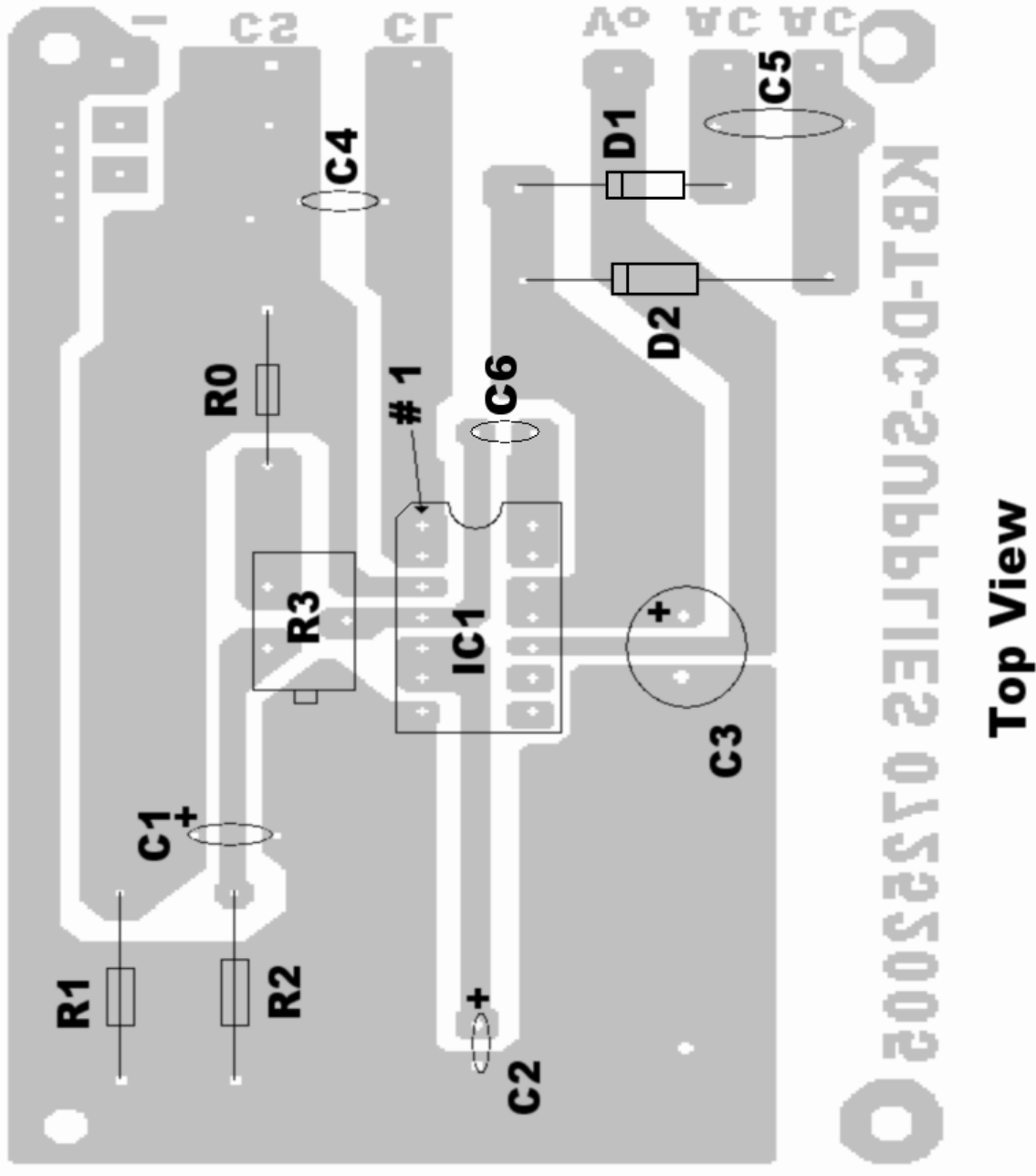
CL – goes BEFORE the current limiting array

CS – goes AFTER the current limiting array

Neg or – goes to the negative of the main filter capacitor

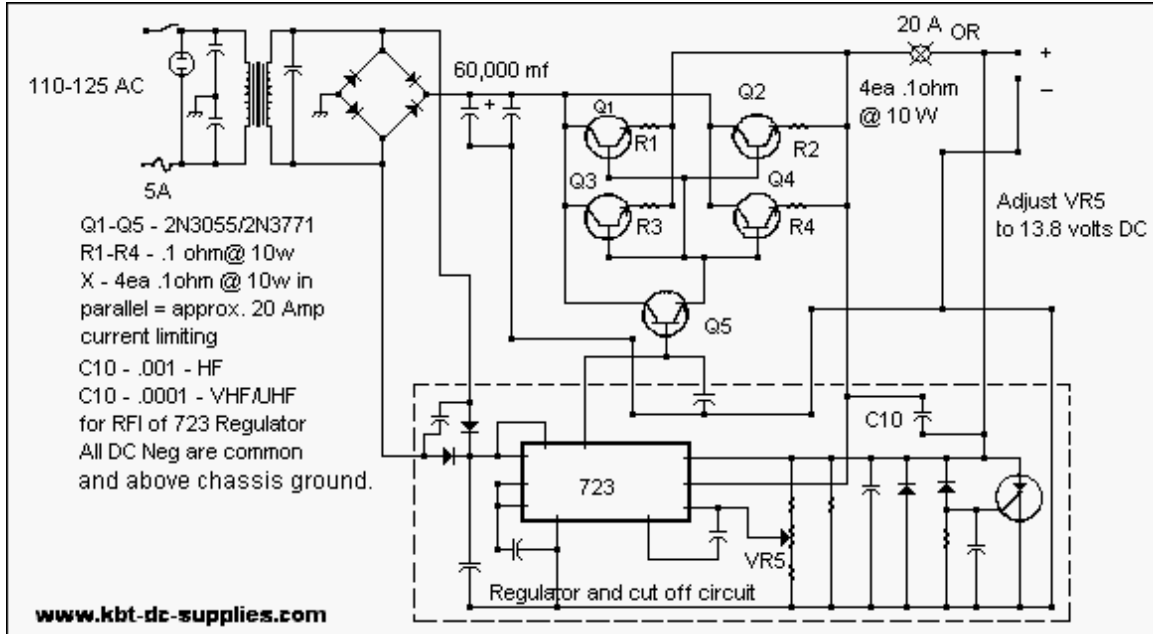
Please try to keep the voltage to the AC/AC to no less than 5 volts more than you want to regulate. And no more than 30 volts maximum.

Sometimes it may be necessary to use only half of the transformer secondary by using only one of the AC connection points on the PCB and the other would therefore be connected to the negative of the supply. This is only recommended when the voltages are up over 30 volts. The 723 manufactures boast of the IC being safe up to 37 volts. However, that leaves no room if a spike was to get through to that point.

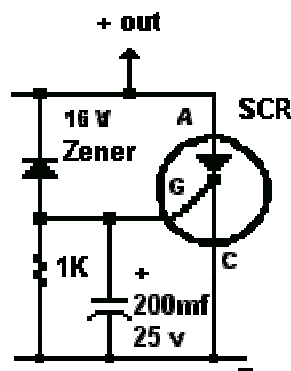


Top View

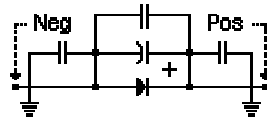
This is the suggested power supply schematic layout that works well with the KBT-DC-Supplies PCB.



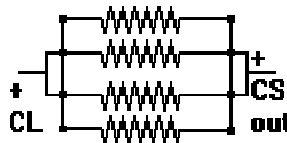
This is the suggested Crow Bar circuit or over voltage prevention circuit. The SCR in this circuit needs to be a value that can hold the total amount of current that the supply can produce at ground long enough to blow the input fuse. The input fuse should be no more than the final output current divided by 4. Example: If you were building a 20 amp maximum supply, then the fuse would be no more than 5 amps. The Zener diode can be as much as 16 volts.



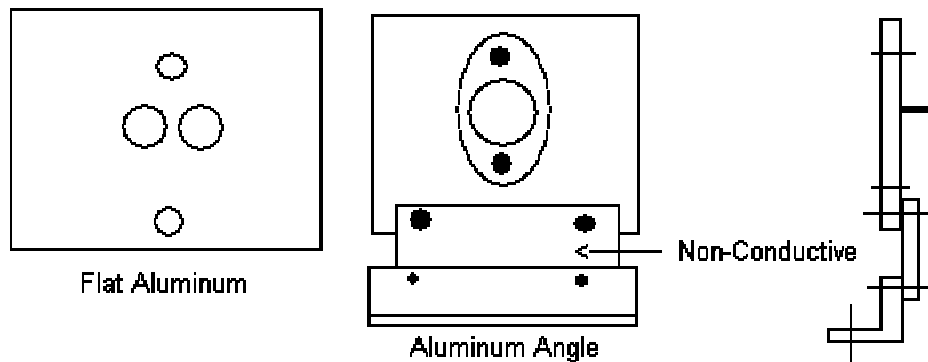
This is the suggested circuit that is to be installed on the output binding posts. This helps stop transients from getting back into the supply and hindering regulation. The caps are .01mf (point zero one). The diode can be 1N4001 to 1N4004. The electrolytic capacitor can be from 200mf to 400mf at 25 volts or more. I use the later.

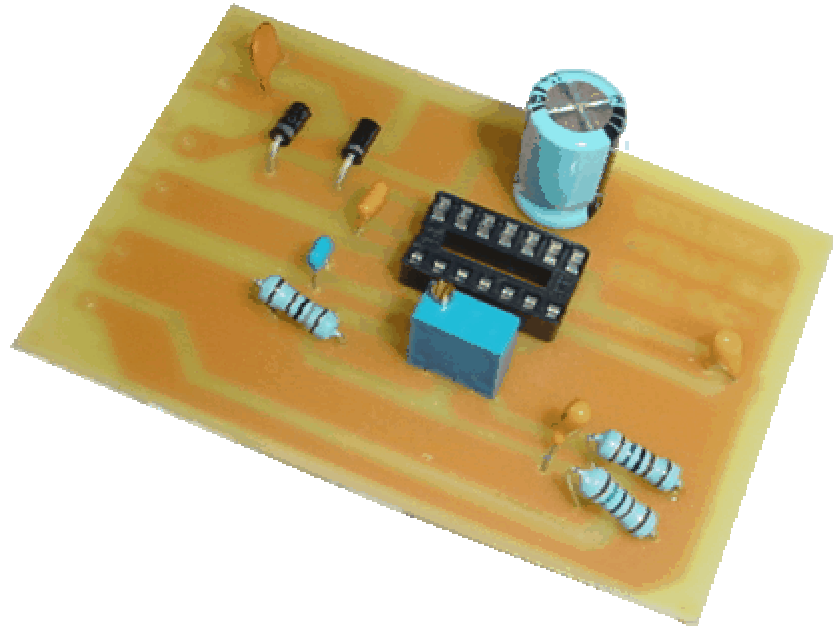


This is the suggested circuit that is to be installed in the positive output line just before the positive output binding post. Each of these resistors is good for approx. 6.5 amps current limit. Their values are .1 ohm at 10 watts. That's point one ohm at ten watts. The right side positive out, binding post is the point of CS or current sense connection.

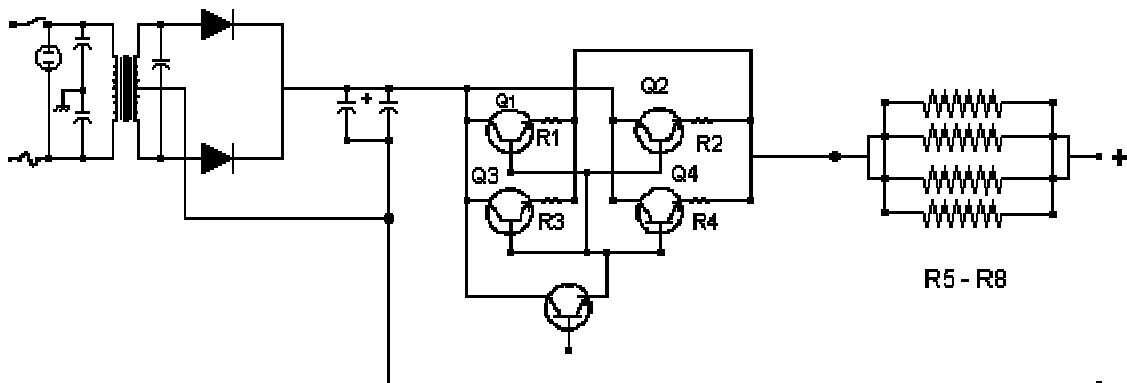
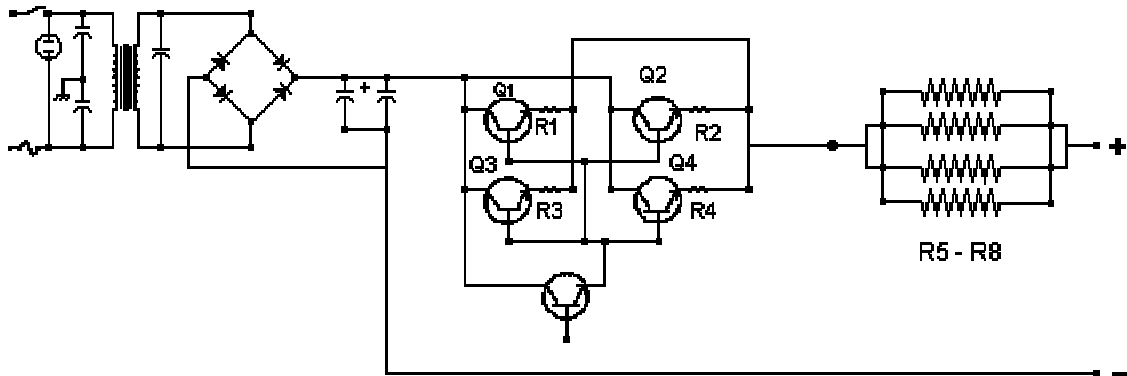


Here is one suggested method of mounting the 2N3055 drive transistor. This device needs to be kept isolated from the chassis and AC grounding.

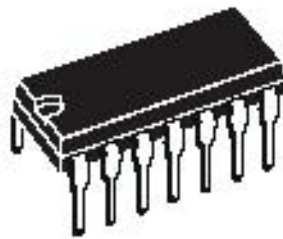
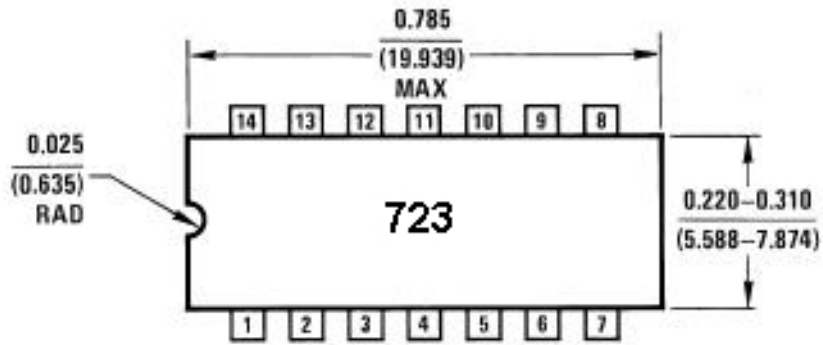




Here are two examples of supporting circuitry.



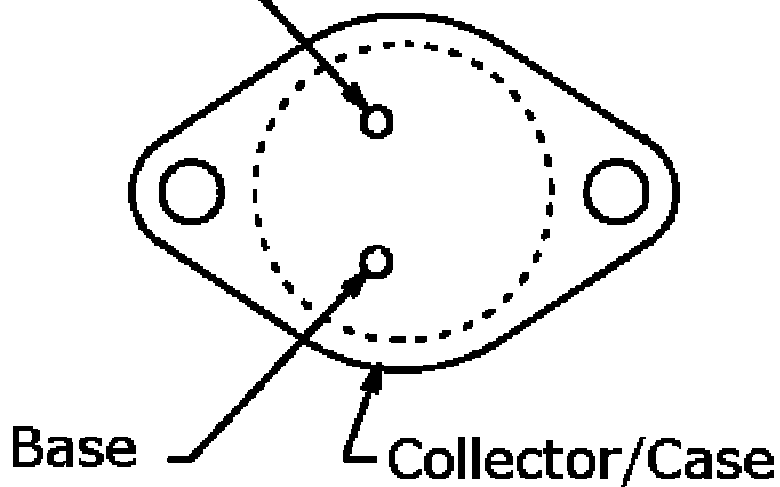
If you need more current just continue on with more pass transistors and add more resistors to the current limiting array.



723
DIP-14

Emitter

2N3055/2N3771
NPN TO-3 style



KBT-DC-Supplies Voltage regulator boards (6)
Garrey F. Morford, KB7KBT
16555 Shekinah Ct.
Cottonwood, Ca. 96022

Sold to:
Thomas F. Kravec, W8TK
1282 McCoy Rd.
Columbus, OH. 43220

White and Green – AC – AC - wires connect to the AC reference from the secondary. The best way to do this is to connect to only one side of the transformer and to the center tapped wire. This way you still have a true reference but lower than the full secondary therefore saving a high voltage spike to the 723 from full transformer secondary.

Red – Vo – Voltage out connects to the base pin of your drive transistor that drives the pass transistor configuration.

Orange – CL – current limit connects just before the current limiting array of resistors.

Blue – Cs – current sense connects just after the current limiting array of resistors.

Black – Negative Connects to the negative of the main filter capacitor(s).