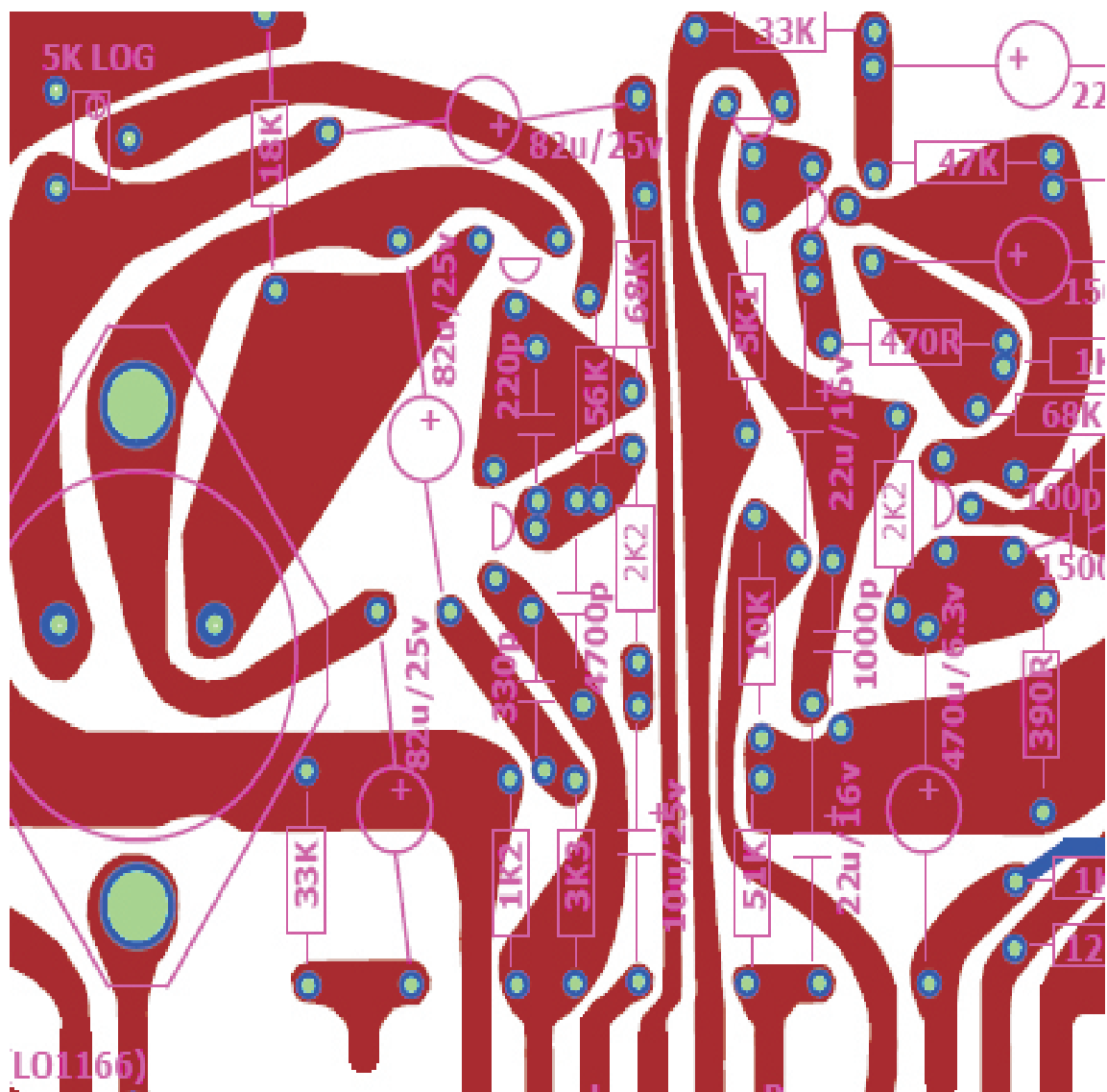


EZ1290 Assembly Guide

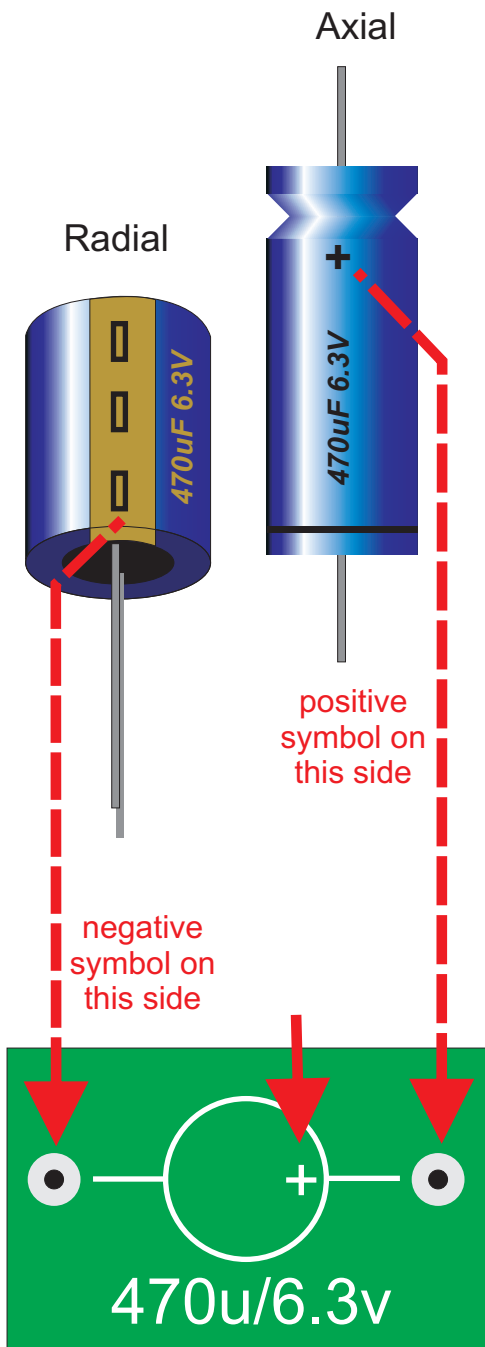


Capacitors

This picture shows the different types of capacitors used and how they are symbolized and mounted on the PCB.

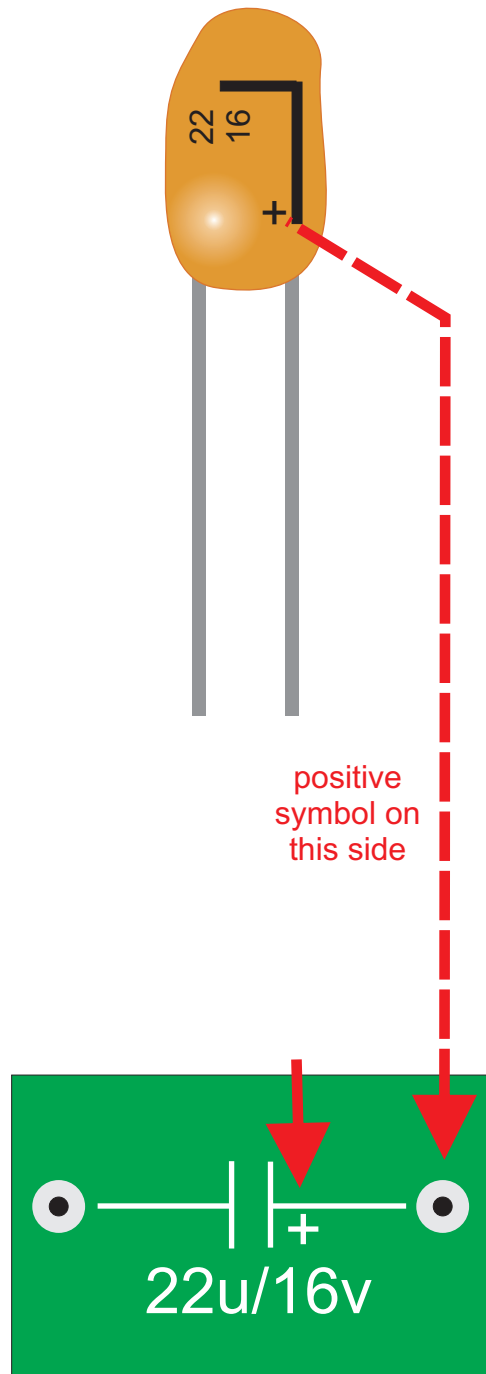
Don't mess this up or bad things will happen!!!

Electrolytic



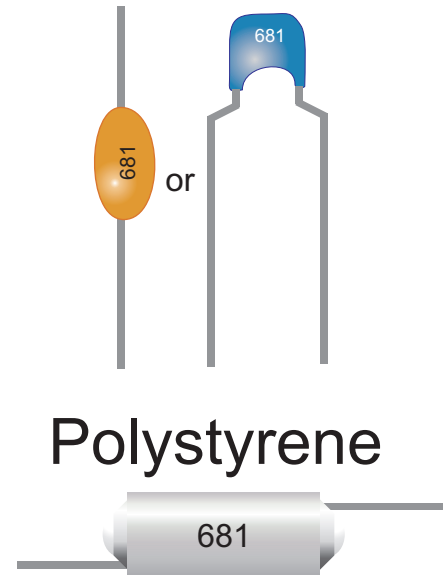
Electrolytic

Tantalum



Tantalum

Ceramic



Polystyrene

orientation doesn't matter

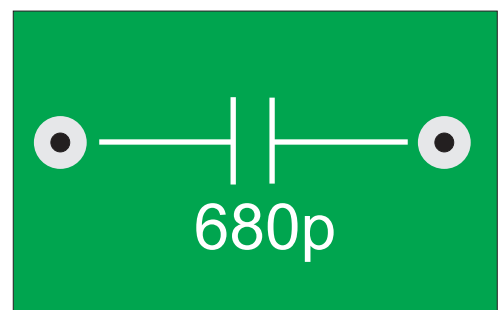
(values are read as following:

68pF=680

680pF=681

6800pF=682, etc.)

Be careful with applying too much heat to polystyrene caps! Use a Soldering Heat Sink Clip Tool (Radioshack part #276-1567) on the wire lead between the solder joint and capacitor body when soldering to prevent damage.

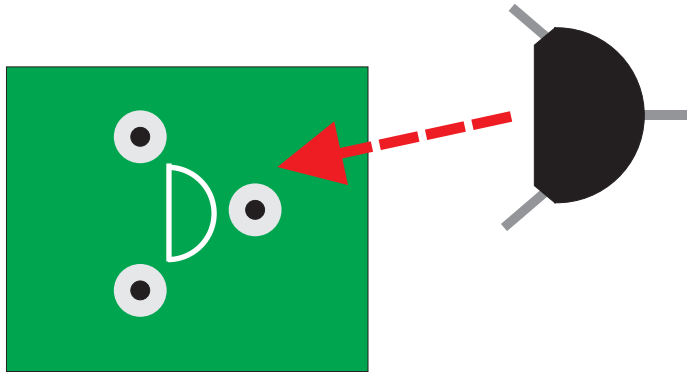


Ceramic or Polystyrene

Transistors

These are the different types of transistors used and how they are symbolized and mounted on the PCB.

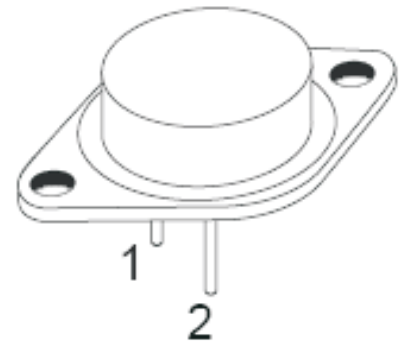
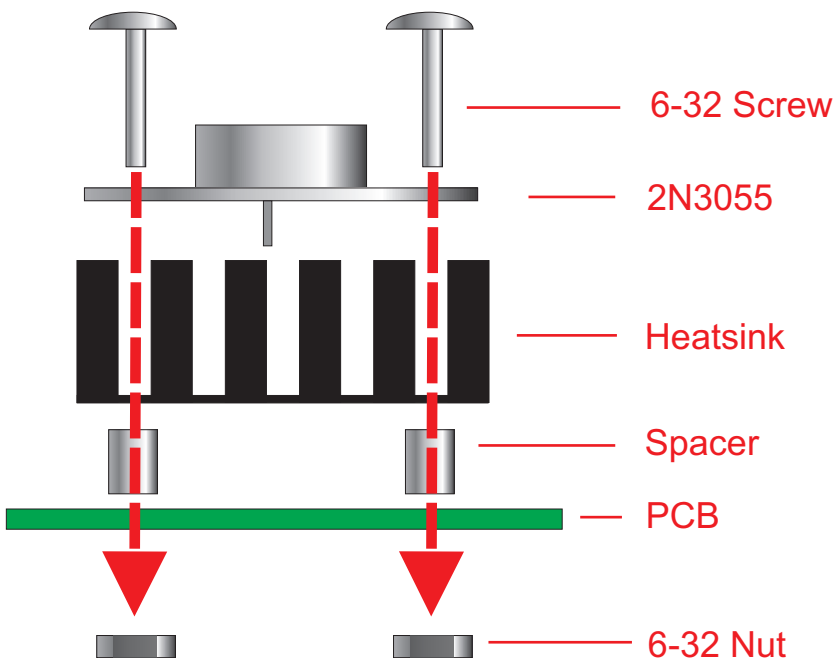
BC184C



line up the "D" shaped body of the BC184C with the "D" on the PCB
You may also want to use a *Heat Sink Clip Tool* while soldering these.



2N3055



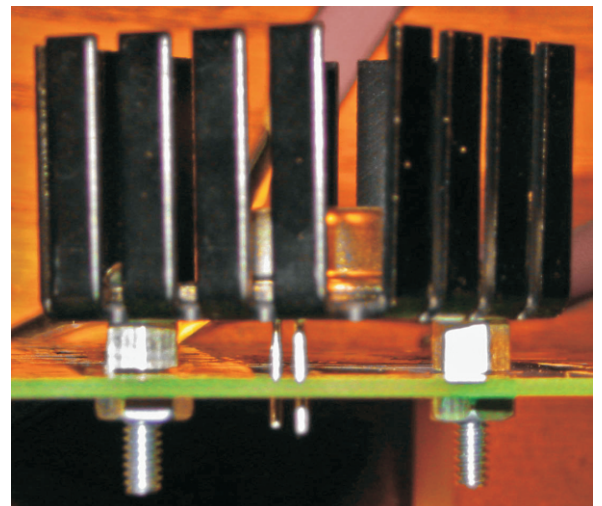
TO-3

Screw 2N3055 to the PCB **before** soldering to avoid putting strain on the solder pads.

The Spacer can be made by cutting a 3/8" 6-32 aluminum standoff in half.
Digikey Part # 2209K-ND. Standoff must be metal (conductive).



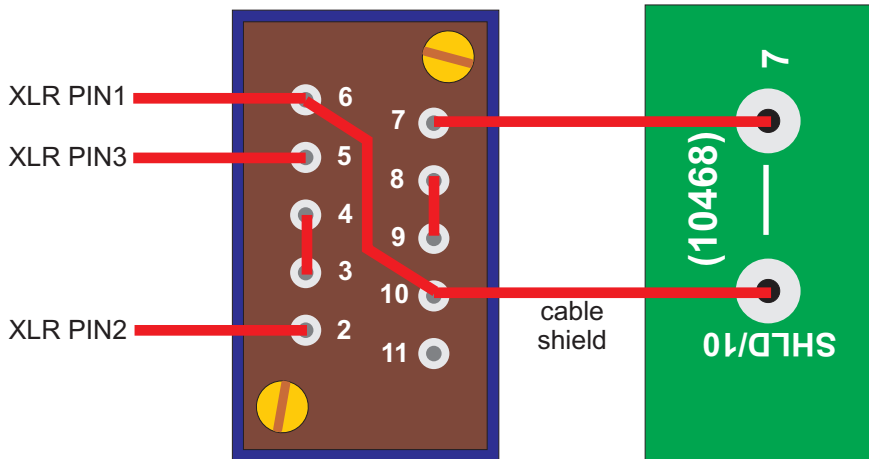
The 2N3055 can only be mounted one way.
If the holes don't line up, flip 180 degrees.



Transformers

There are two (mic input, line output) transformers; here's how to wire them to the EZ1290 PCB.

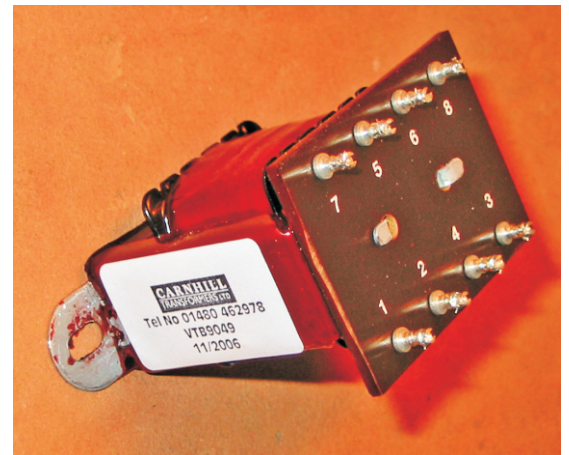
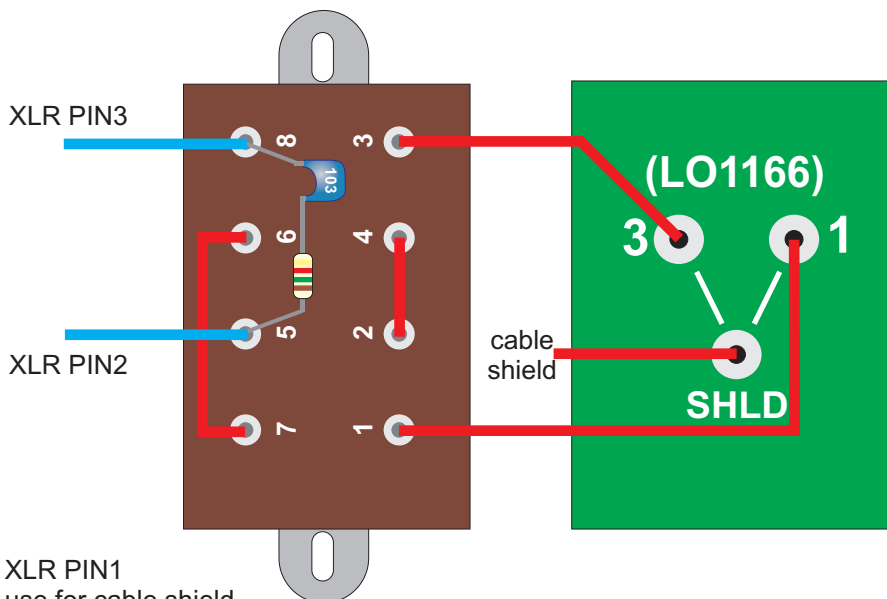
10468 (mic input - Carnhill VTB9045)



You'll want to use **shielded** wire from the PCB to the transformer, and the transformer to the XLR connector. I use shielded mic cable for this (Canare L-2B2AT) and run the PCB-->Pin 10 and Pin 6-->XLR Pin 1 through the "drain wire" (shield).

Also, note that drawing EH10023 calls for a 180pF capacitor between pin 7 and 10 on the transformer; this capacitor is on the EZ1290 PCB. :-)

LO1166 (line output - Carnhill VTB9049)



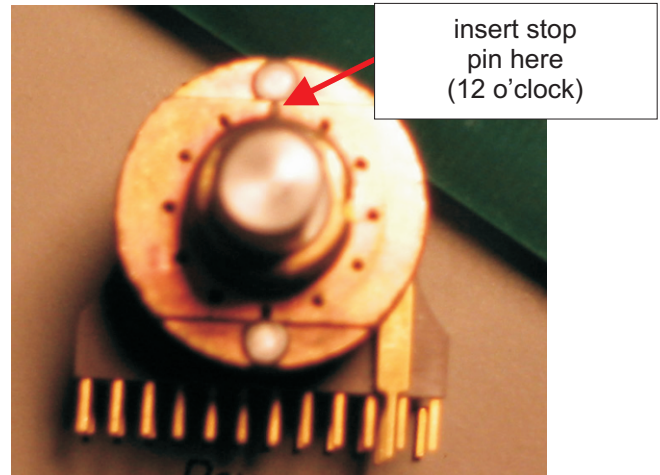
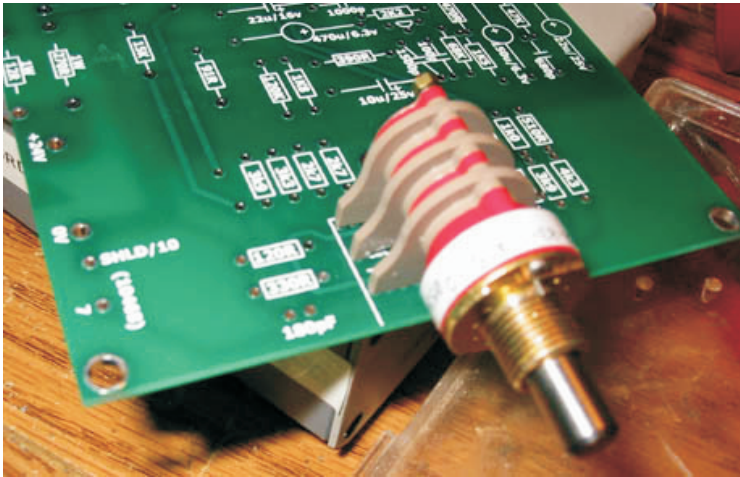
XLR PIN1
use for cable shield
only; leave dis-
connected otherwise

Please note the .01uF cap and 1K5 resistor connected between Pin 8 and 5

Rotary Switch

The rotary switch is a Grayhill 71BDF30-03-1-AJN

Here are some hints:



On the EZ1290 V2.0 boards the 71BDF30-03-1-AJN should drop right in, but you may have to push a few of the pins around with a small screwdriver in order for them to line up with the holes. I've had to do this with nearly all the switches. Not to worry; they've all gone in every time. :-)

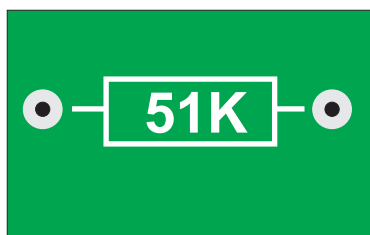
Use some fine .015" solder with a fresh (sharp) soldering tip. These pins are only .075" apart and it's easy to get a solder bridge between pins. Now's not the time to have shaky hands. Also, some of the pins on the middle row don't have solder pads; they are unused switch positions. Don't worry about adding solder to these pins.

I recommend inserting one stop pin at the 12 o'clock position. This will give you a stop between 75dB gain and 20dB gain. You can use the little sticker to cover the stop pin to prevent it from falling out.

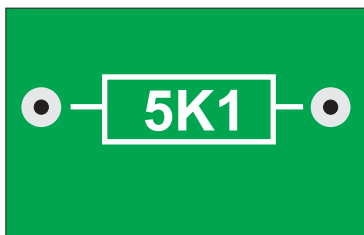
Resistors

There's not much to know about the resistors used for this project other than perhaps their notation. A 51000 Ohm resistor will be symbolized as "51K", a 5100 Ohm will read "5K1" and a 510 Ohm resistor will read as "510R". This to avoid confusion or perhaps add more confusion; whichever you prefer. :-)

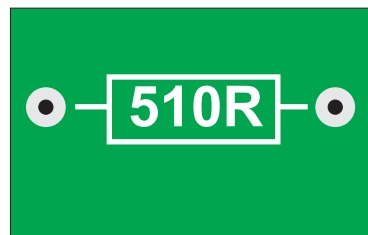
51000 Ohm Resistor



5100 Ohm Resistor



510 Ohm Resistor



BIAS

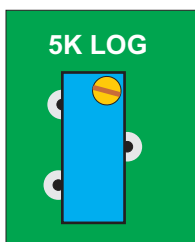
After you've hooked everything up you'll need to set the bias of the driver stage. Do this by setting the gain switch to full gain (75dB) and then running a 1K sine wave into the mic input until clipping.

(It's ok if you actually hear the mic pre at this point)

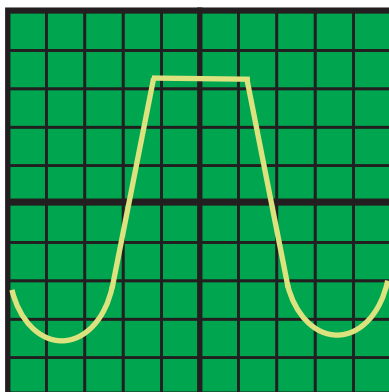
Look at the signal with an oscilloscope. More than likely the waveform is only clipping on one side.

Adjust the trimpot until clipping is equal on both sides of the waveform.

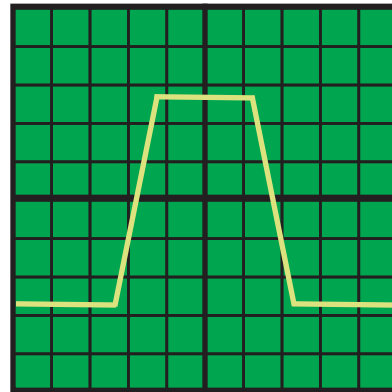
trimpot



unequal clipping



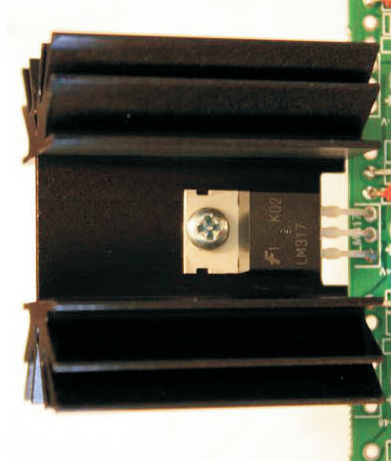
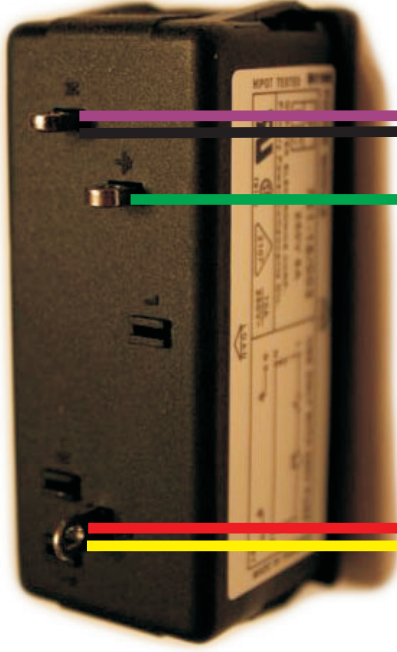
equal clipping



JLM ACDC Power Supply

**QUALTEK
761-18/003**

2.6" X 1.063" Panel Cutout

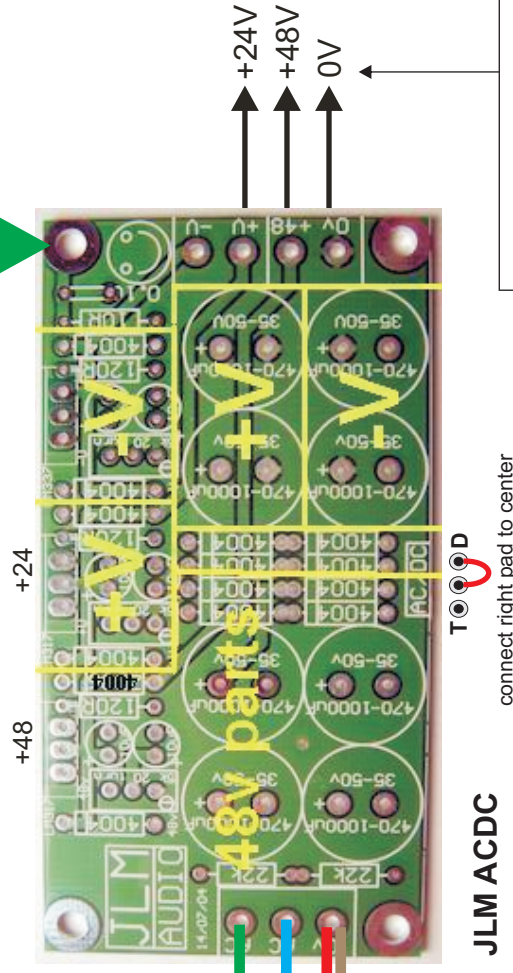


Be sure to properly heatsink the two LM317's. Use either the PSU case or a dedicated heatsink such as Digikey part# HS276-ND



**AMVECO
TE62085-ND**

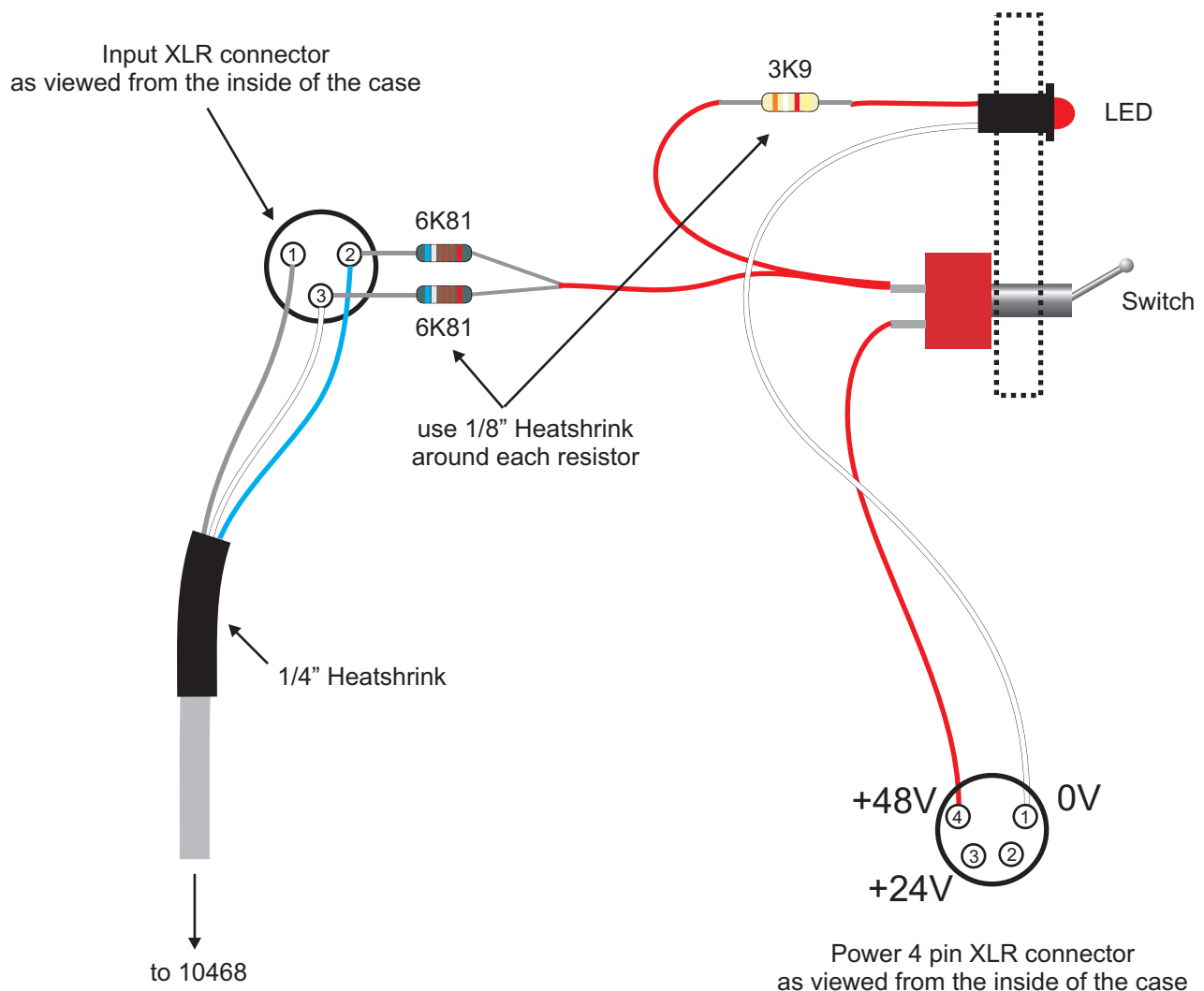
Shown wired for use in countries with 120V AC utility power.



All audio 0V should star from this 0V point. Do not connect 0V to case. If your grounding is correct you should measure 10ohm between rack case and 0V.

Phantom Power (48V)

Here's how you connect phantom power, the phantom power switch and indicator LED. You'll want to pay close attention to the values of the 6K81 resistors. It is preferable to manually pick two resistors that are closest to each other in resistance; use an Ohm Meter to verify.

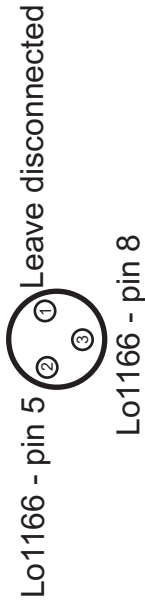


Miscellaneous Building Notes

Input XLR connector (to 10468)
as viewed from the inside of the case



Output XLR connector (from Lo1166)
as viewed from the inside of the case



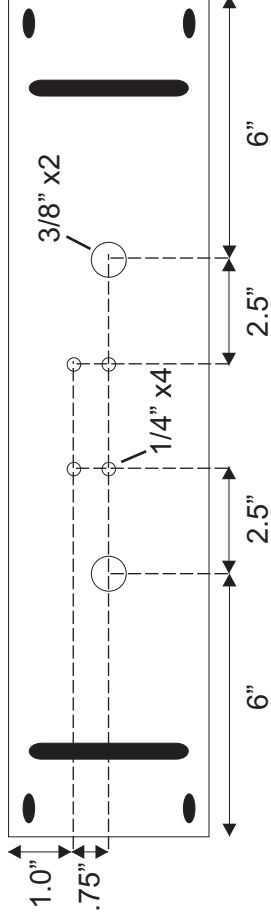
Power 4 pin XLR connector
as viewed from the inside of the case



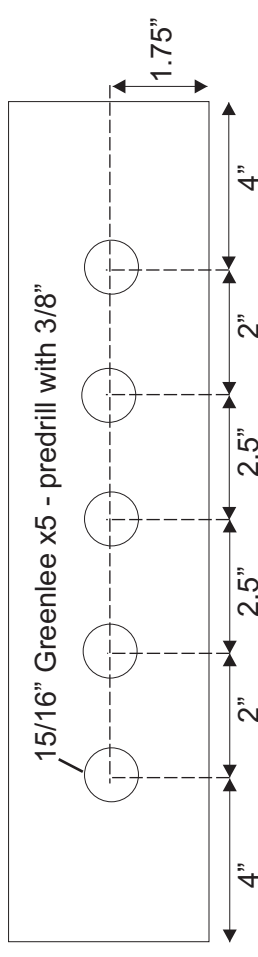
Also connect PSU chassis to rack case containing the EZ1290s.
Preferably, use 3 conductor, shielded 18 gauge and use the shield to connect both metal cases together

19" Rack (2U) Case Fabrication

Front Panel

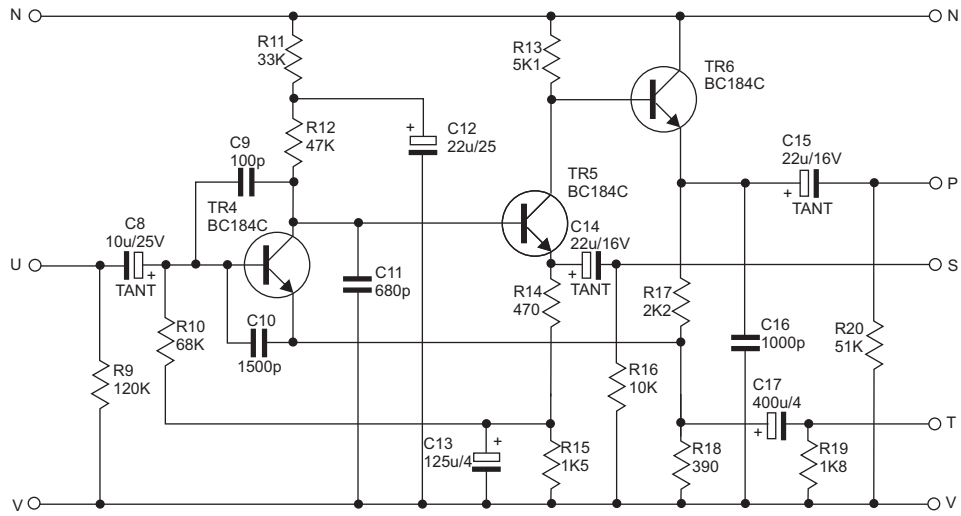


Back Panel

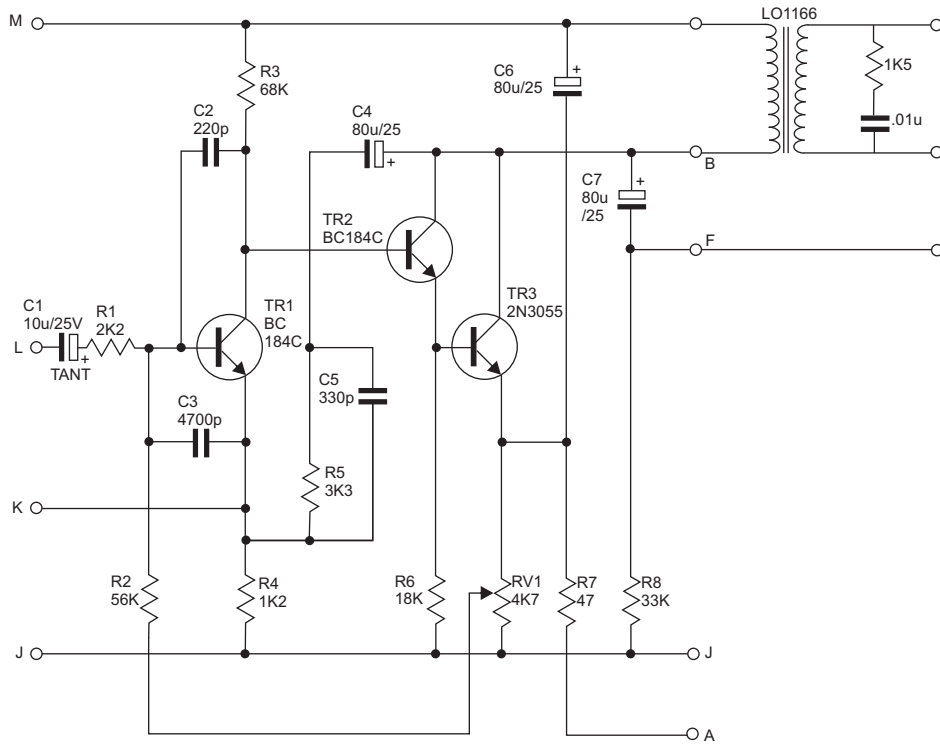




BA183NV



BA183AM



NOTE: BA183 / AV CONSISTS OF BA183AM + BA183NV