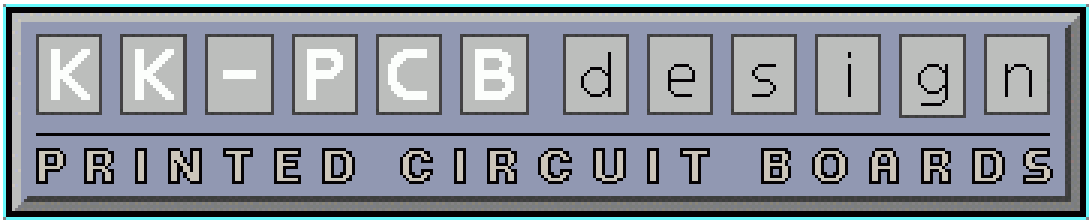

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PASS LABS CLONE

ALEPH-2

CLASS A AMPLIFIER

Important:

This is not an project for the novice.

But, anyone with experience of some electronics and with common sense should have no problems.

It is assumed that the buyer of the PCBs for this project have some experience with electronics, so we will not go in the details here.

This is a high performance amplifier, so do not omit or substitute any part on the PCB, unless you are fully qualified for this.

However, if there will be the problems with finding some parts, try to get help from qualified person for proper part substitution.

The most important thing in this project are the heatsinks.

They must be properly rated.

Do not connect amplifier to power supply until output devices are mounted on, and electric isolated from the heatsinks.

Use thermal silicone paste and mica isolators for mounting output devices.

Also, do not try to operate the amplifier if the heatsinks are not rated for the power that amplifier would dissipate:

(around 320 W per one channel-monoblock, so use heatsinks rated at 0,1 C/W or better – also per one channel-monoblock).

Do not use Aluminium L profile for mounting output devices.

Mount them on the bottom of the PCB, so that then all together, with the PCB, can be mounted directly on the heatsinks - the output devices should be between the heatsinks and the PCB, like sandwich.

If this is done, be shure that the heatsinks are properly rated for this operation.

In any case, the thermal switch (75 - 85 C) should be used.

If used only unbalanced input, it should be connected at U and the GND, and the unused, - IN, should be grounded (connected to the GND).

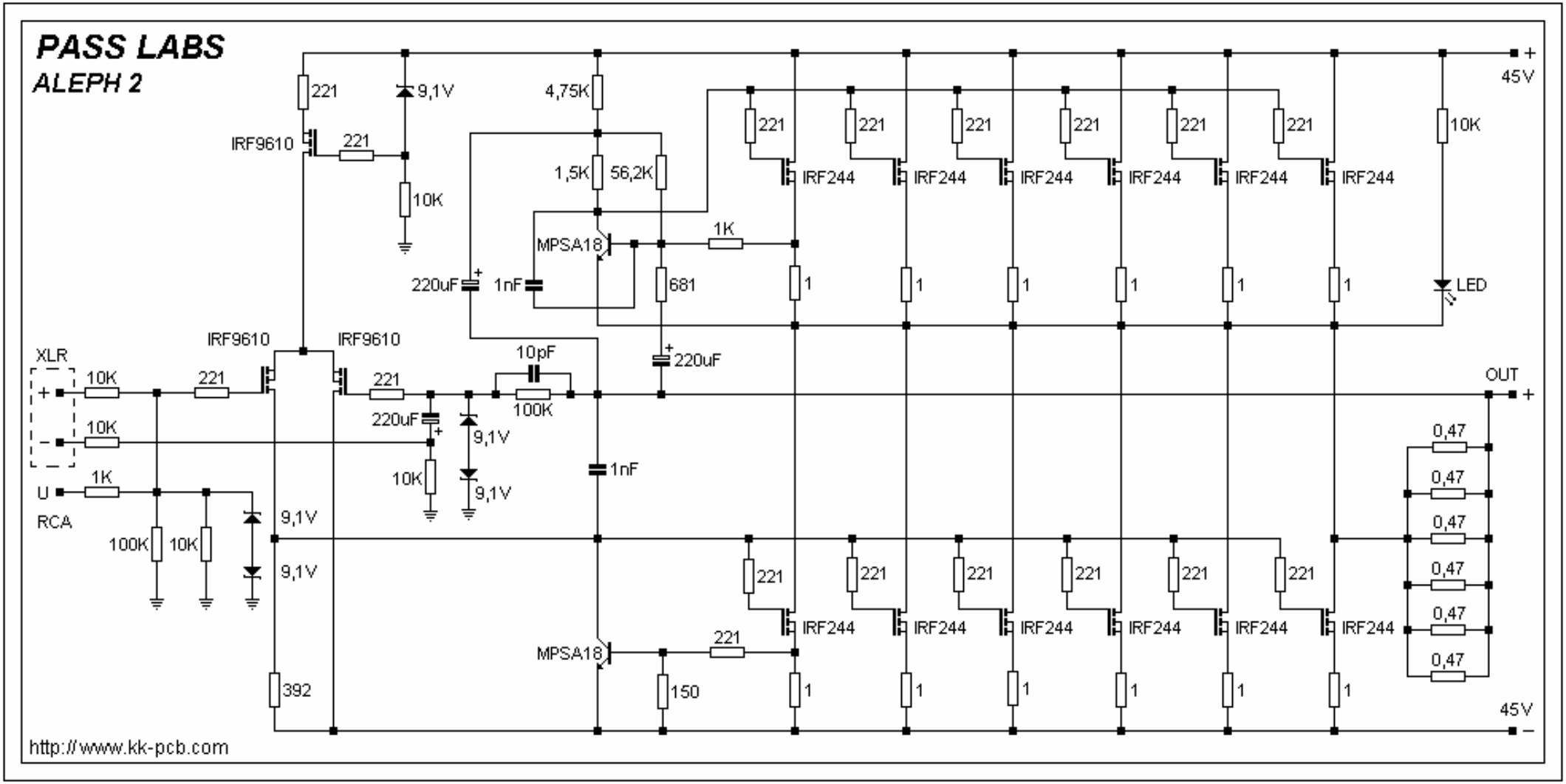
The fixing holes for the PCB are not drilled, so drill them to suit your design before you start with soldering the components.

When amplifier finished, try to remove excess of soldering flux from the bottom of the PCBs, if neccesary.

Be carefull, some solvents can remove the blue soldermask as well.

When testing the amplifier use the fuse in the series with the speaker, to avoid aditional damages if something wrongly constructed.

Happy listening and much warmer winters !


PASS LABS
ALEPH 2
221
9,1V
IRF9610
221
10K
4,75K
1,5K
56,2K
MPSA18
1K
220uF
1nF
681
220uF
221
IRF244
10K
+
45V
LED
XLR
10K
10K
IRF9610
IRF9610
221
221
10pF
100K
220uF
9,1V
9,1V
10K
1nF
OUT
+
1K
U
RCA
100K
10K
9,1V
9,1V
0,47
0,47
0,47
0,47
0,47
0,47
MPSA18
221
150
392
45V
−
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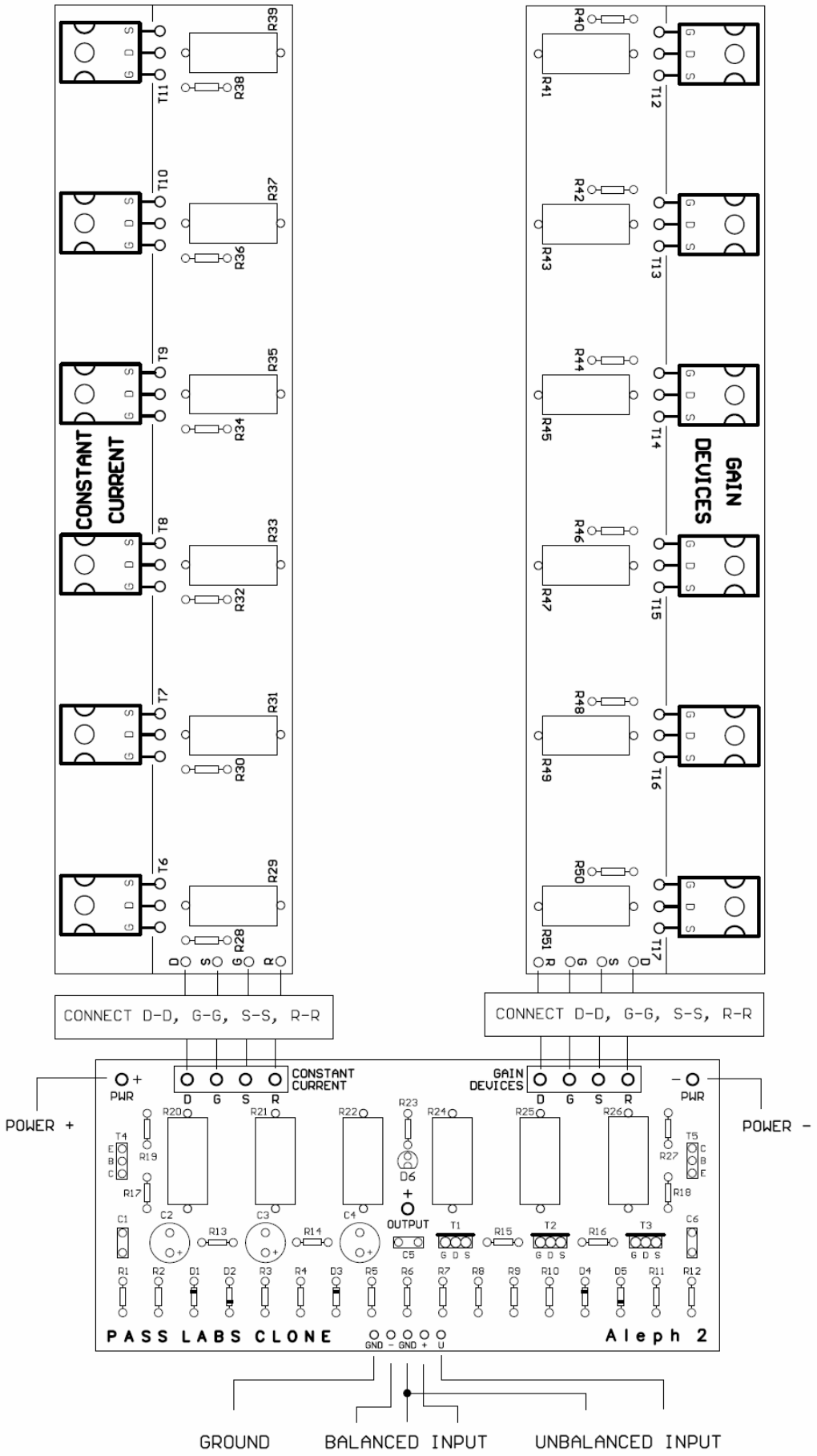

CONSTANT CURRENT
GAIN DEVICES
CONNECT D-D, G-G, S-S, R-R
CONNECT D-D, G-G, S-S, R-R
POWER +
POWER -
PWR
PWR
CONSTANT CURRENT
GAIN DEVICES
D G S R
D G S R
OUTPUT
PASS LABS CLONE
Aleph 2
GND - GND + U
GROUND
BALANCED INPUT
UNBALANCED INPUT

RESISTORS :

All resistors 0,25 W – 0,6 W metal-film , unless otherwise stated.

R1= 4,75 K
R2= 1,5 K
R3= 10 K
R4= 10 K
R5= 221 R
R6= 221 R
R7= 10 K
R8= 10 K
R9= 1 K
R10= 10 K
R11= 100 K
R12= 392 R
R13= 681 R
R14= 100 K
R15= 221 R
R16= 221 R
R17= 56,2 K
R18= 150 R
R19= 1 K
R20= 0,47 R / 3W-5W
R21= 0,47 R / 3W-5W
R22= 0,47 R / 3W-5W
R23= 10 K
R24= 0,47 R / 3W-5W
R25= 0,47 R / 3W-5W
R26= 0,47 R / 3W-5W
R27= 221 R
R28= 221 R
R29= 1 R / 3W-5W
R30= 221 R
R31= 1 R / 3W-5W
R32= 221 R
R33= 1 R / 3W-5W
R34= 221 R
R35= 1 R / 3W-5W
R36= 221 R
R37= 1 R / 3W-5W
R38= 221 R
R39= 1 R / 3W-5W
R40= 221 R
R41= 1 R / 3W-5W
R42= 221 R
R43= 1 R / 3W-5W
R44= 221 R
R45= 1 R / 3W-5W
R46= 221 R
R47= 1 R / 3W-5W
R48= 221 R
R49= 1 R / 3W-5W
R50= 221 R
R51= 1 R / 3W-5W

CAPACITORS :

C1= 1 nF / 100 V
C2= 220 uF / 35 V
C3= 220 uF / 35 V
C4= 220 uF / 35 V
C5= 10 pF
C6= 1 nF / 100 V

DIODES :

D1= Zener 9,1 V / 1W
D2= Zener 9,1 V / 1W
D3= Zener 9,1 V / 1W
D4= Zener 9,1 V / 1W
D5= Zener 9,1 V / 1W
D6= LED Blue 5 mm

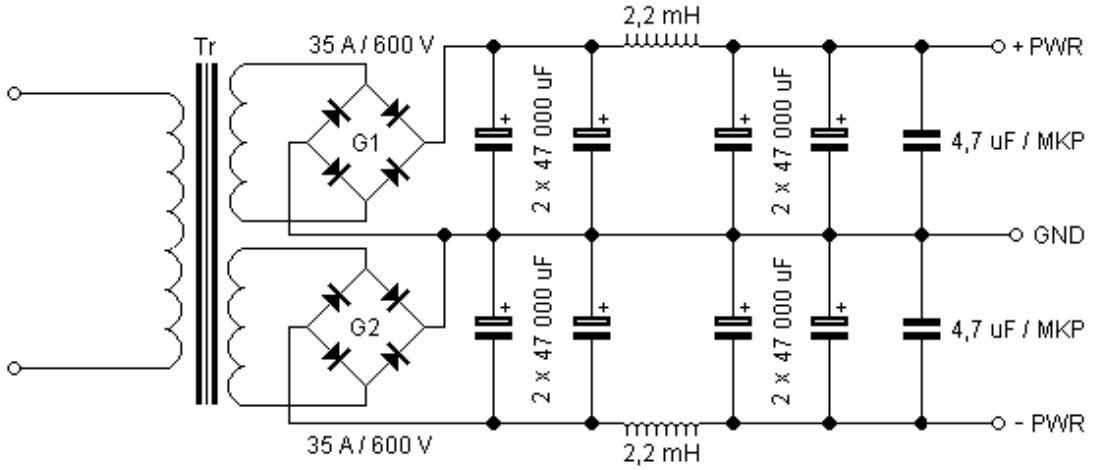
TRANSISTORS :

T1= IRF 9610
T2= IRF 9610
T3= IRF 9610
T4= MPSA 18 (BC 546 B)
T5= MPSA 18 (BC 546 B)
T6= IRFP 244 (IRFP 240)
T7= IRFP 244 (IRFP 240)
T8= IRFP 244 (IRFP 240)
T9= IRFP 244 (IRFP 240)
T10= IRFP 244 (IRFP 240)
T11= IRFP 244 (IRFP 240)
T12= IRFP 244 (IRFP 240)
T13= IRFP 244 (IRFP 240)
T14= IRFP 244 (IRFP 240)
T15= IRFP 244 (IRFP 240)
T16= IRFP 244 (IRFP 240)
T17= IRFP 244 (IRFP 240)

PASS LABS CLONE

ALEPH - 2 POWER SUPPLY

Tr = 2 x 37 V
600 VA - One channel-monoblock



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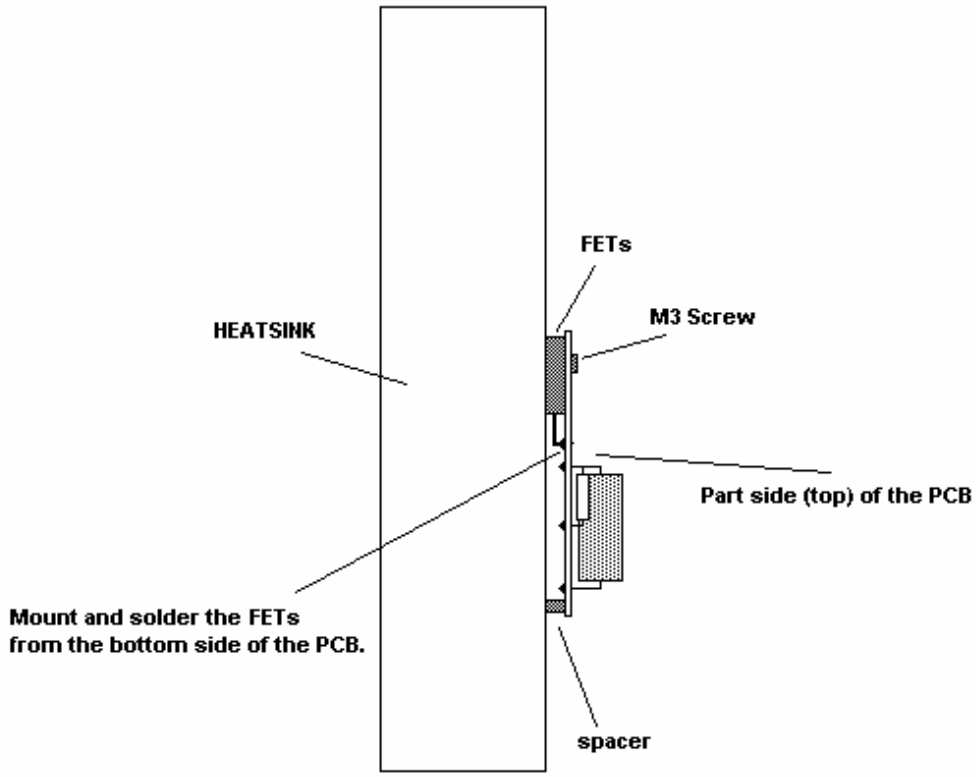
ALEPH - 2 FET MOUNTING



Use the mica isolators and silicon thermal paste when mounting the FETs.

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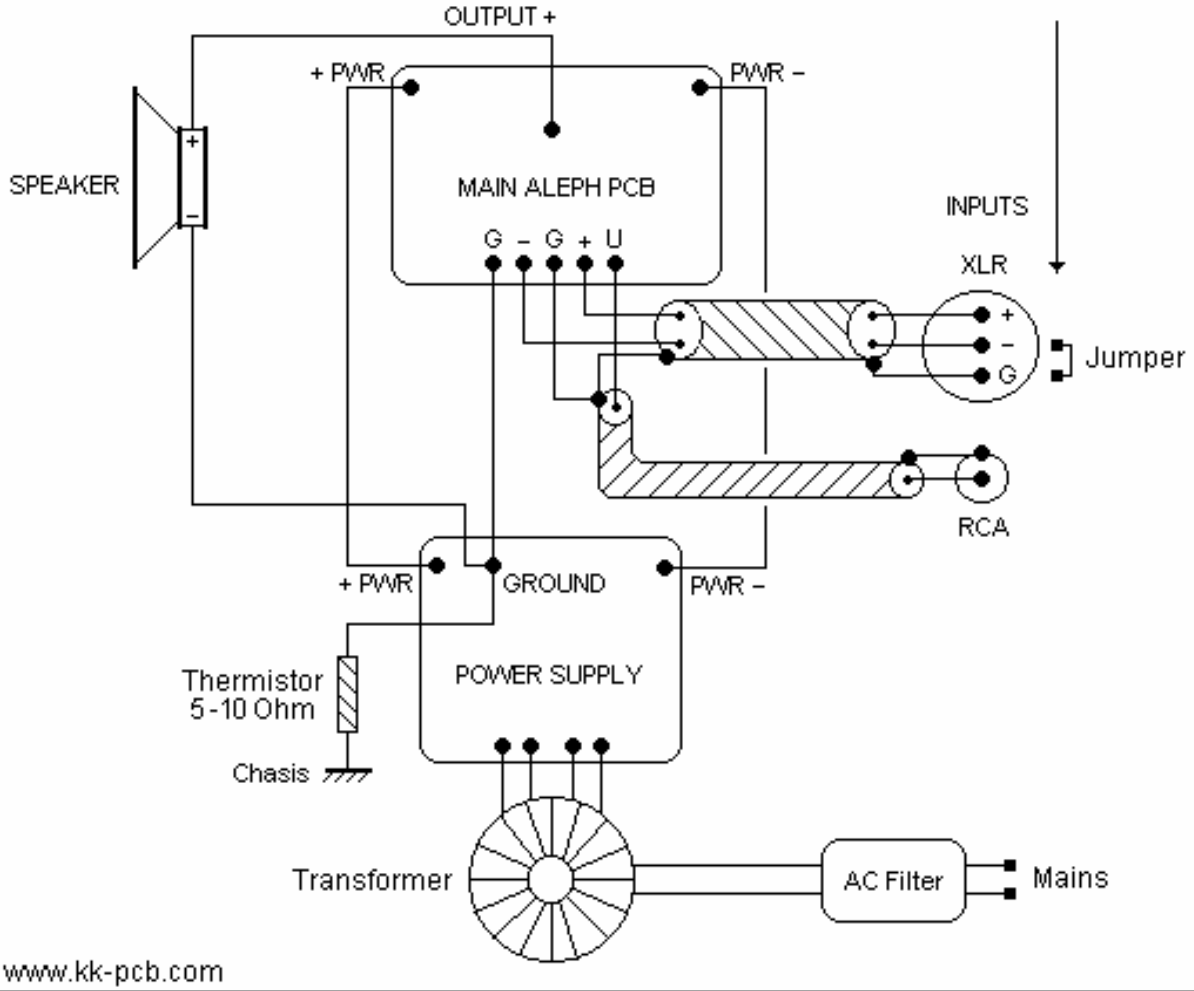
FET MOUNTING		
A		Rev.
DATE:		Sheet of:

PASS LABS CLONE
ALEPH CONNECTIONS

Place Jumper (between G and – on XLR)
only when RCA (unbalanced) input used.



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