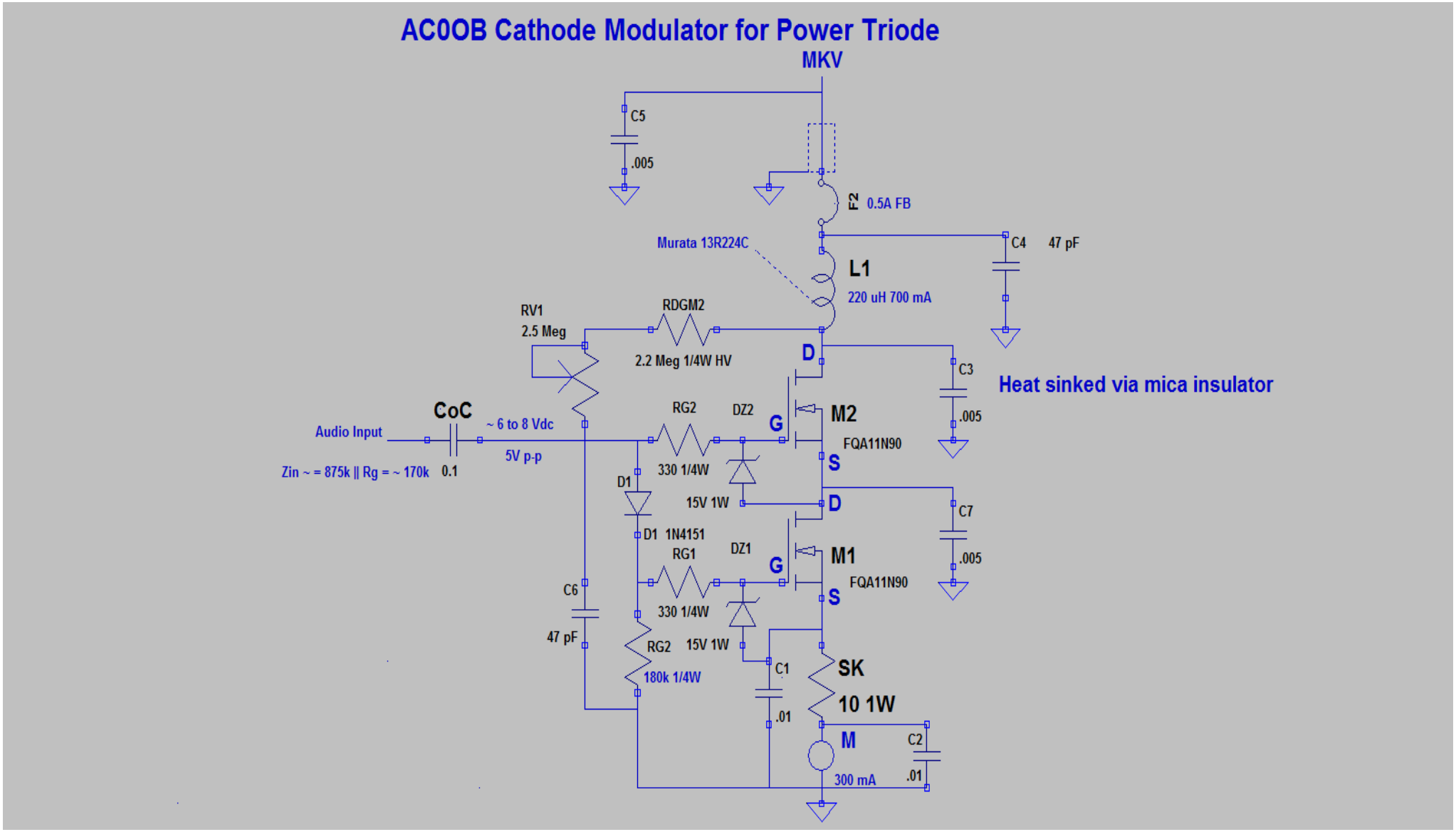
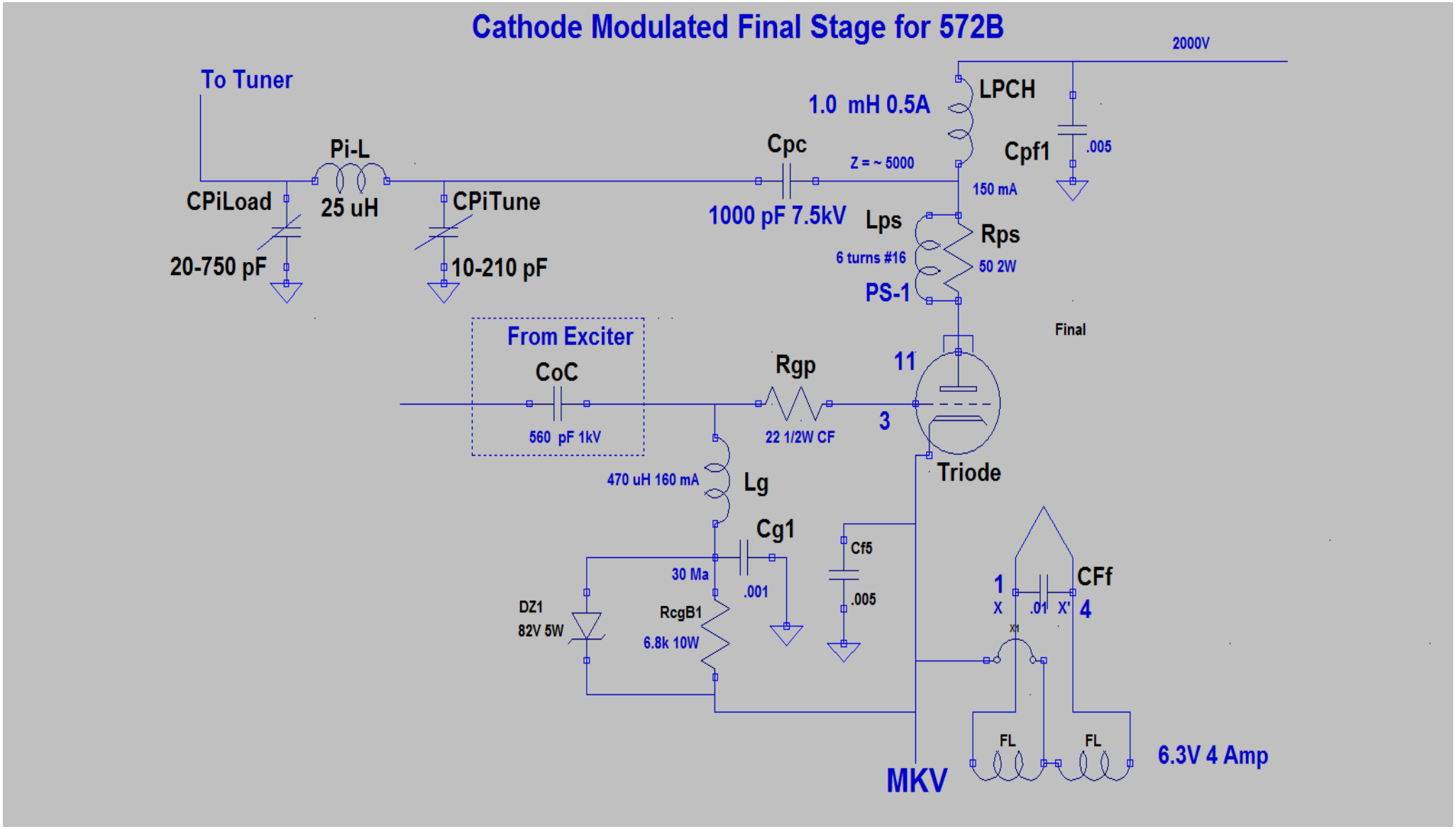

AC0OB Cathode Modulator for Power Triode
MKV
C5
.005
F2
0.5A FB
Murata 13R224C
C4
47 pF
L1
220 uH 700 mA
RV1
2.5 Meg
RDGM2
2.2 Meg 1/4W HV
D
C3
.005
Heat sinked via mica insulator
CoC
~ 6 to 8 Vdc
5V p-p
Audio Input
Zin ~ = 875k || Rg = ~ 170k
0.1
RG2
DZ2
G
M2
FQA11N90
S
330 1/4W
15V 1W
D1
D1 1N4151
D
C7
.005
RG1
DZ1
G
M1
FQA11N90
S
C6
47 pF
330 1/4W
RG2
180k 1/4W
15V 1W
C1
.01
SK
10 1W
M
300 mA
C2
.01


Cathode Modulated Final Stage for 572B
2000V
To Tuner
LPCH
1.0 mH 0.5A
Cpf1
.005
Pi-L
Cpc
Z = ~ 5000
CPiLoad
25 uH
CPiTune
150 mA
1000 pF 7.5kV
Lps
Rps
6 turns #16
50 2W
20-750 pF
10-210 pF
PS-1
Final
From Exciter
CoC
Rgp
11
560 pF 1kV
22 1/2W CF
3
Triode
470 uH 160 mA
Lg
Cg1
Cf5
30 Ma
.001
.005
CFf
1
X
.01
X'
4
DZ1
82V 5W
RcgB1
6.8k 10W
FL
FL
6.3V 4 Amp
MKV

Here for the 572B the MOSFET is varying the series current through the final much as does plate modulation. As it does the cathode voltage varies as well. But here the cathode and grid are tied together so the grid and cathode are at the same DC potential (which varies with modulation) wrt ground, minus the grid-leak bias developed.

Grid bias is developed by the RF signal via the coupling cap from the exciter through the 6.8k resistor where grid current flows from the cathode to grid and back through the 6.8k. The grid current flows grid to cathode via the 6.8K and up through the tube to grid in a circular fashion. In case the RF drive fails, the 82V zener supplies an 82V protective bias.

Screen supply for a tetrode is the same as for any other tetrode. Since plate current and hence screen current tends to want to vary the only stipulation here is we must stabilize the screen voltage with an electrolytic cap to store charge when the screen voltage wants to drop. I.e, the electrolytic cap acts as a voltage holdup cap.

CM is not new technology. I am just using a power MOSFET as the modulator since the resistance across the MOSFET is low and results in a higher modulation percentage and more power output than does a tube-based transmitter at the same PS voltage. In addition it takes very little audio input p-p voltage to modulate the MOSFET. And since none of the modulation signal goes through large modulation circuit inductors the audio can go to 10kHz or more without a hitch.

The grid sees the same variable DC as does the cathode, minus the grid-leak bias. In a CM system one also needs some way to supply a protective bias in case RF drive fails which is why I included a zener.