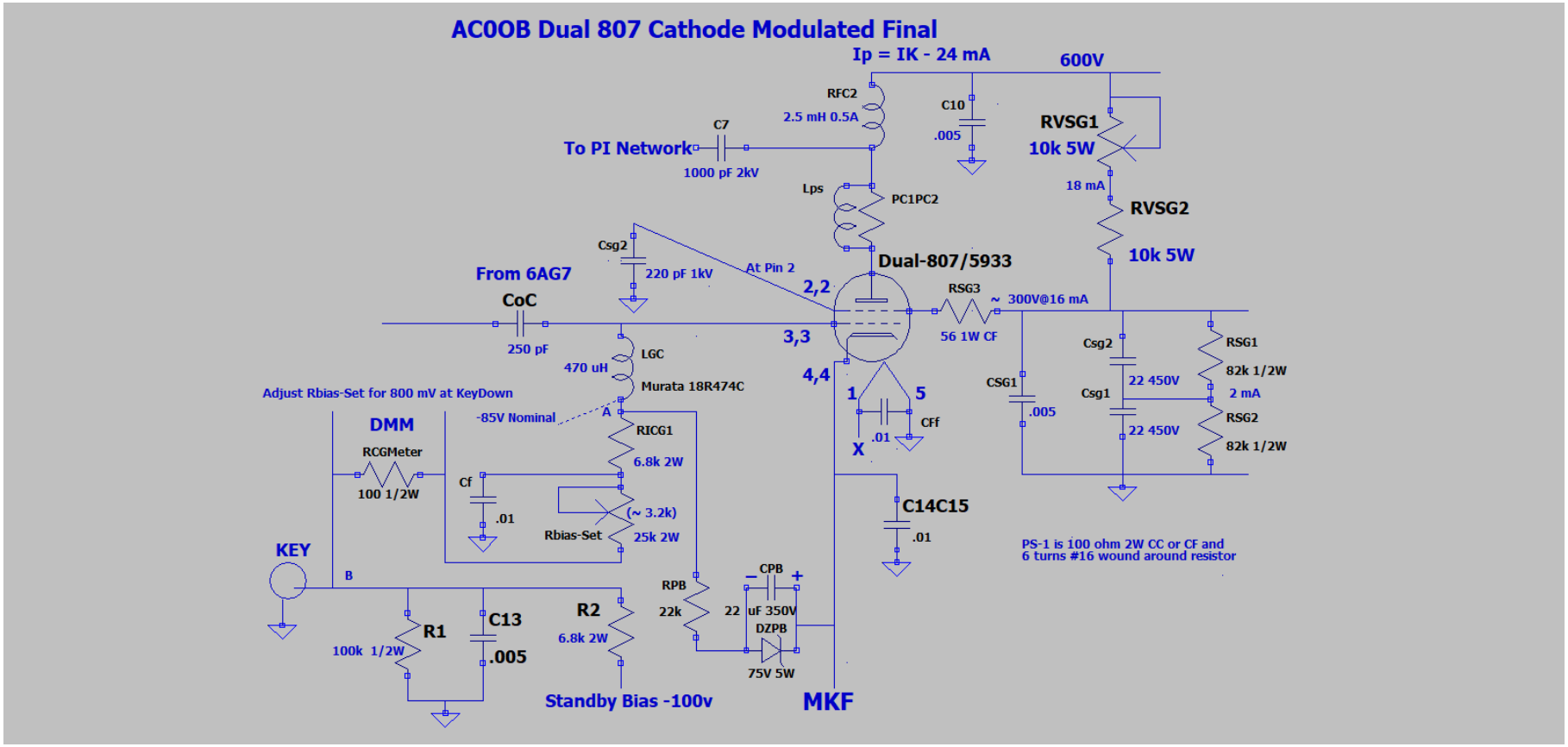
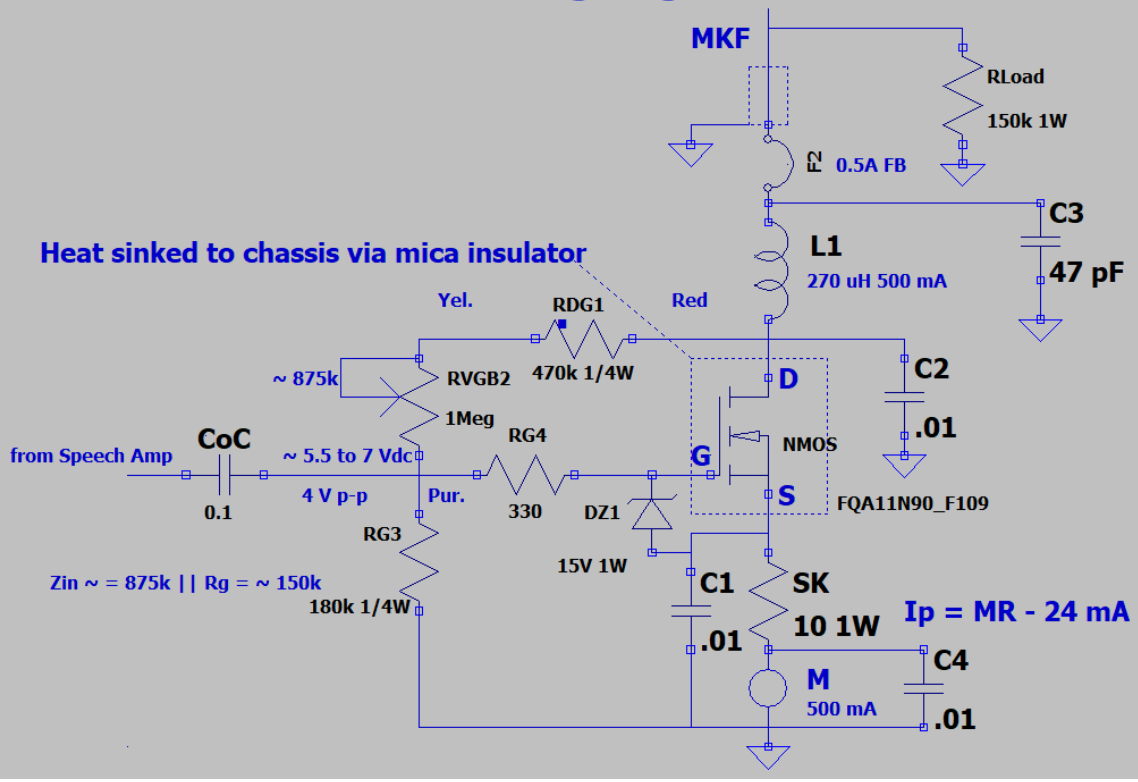

AC0OB Dual 807 Cathode Modulated Final
Ip = IK - 24 mA
600V
RFC2
2.5 mH 0.5A
C10
.005
RVSG1
10k 5W
C7
To PI Network
1000 pF 2kV
18 mA
Lps
PC1PC2
RVSG2
10k 5W
Csg2
220 pF 1kV
At Pin 2
Dual-807/5933
From 6AG7
CoC
2,2
RSG3
~ 300V@16 mA
250 pF
3,3
56 1W CF
LGC
470 uH
4,4
Csg2
RSG1
Murata 18R474C
1
5
22 450V
82k 1/2W
Adjust Rbias-Set for 800 mV at KeyDown
-85V Nominal
A
CSG1
Csg1
2 mA
DMM
RICG1
CFf
.005
22 450V
RSG2
RCGMeter
6.8k 2W
.01
X
82k 1/2W
100 1/2W
Cf
(~ 3.2k)
C14C15
.01
Rbias-Set
25k 2W
PS-1 is 100 ohm 2W CC or CF and
6 turns #16 wound around resistor
KEY
CPB
B
RPB
R2
22k
22 uF 350V
R1
C13
DZPB
6.8k 2W
100k 1/2W
.005
75V 5W
Standby Bias -100v
MKF

Cathode Modulator for Dual 807 using Single Mosfet Modulator



Theory:

Operating control grid bias comes primarily from the exciter's RF drive via grid-leak bias.

The short explanation is this. The Mosfet has a very low RDS or Drain-to-Source resistance at high audio level peaks so the cathode of the finals are near ground at this time.

At the other end, when there are audio valleys, the RDS is high allowing the final cathodes to go to approximately 0.35XVp for dual 807's. The high positive cathode potential represents a very low grid bias voltage. In some situations, the combination grid leak bias + the cathode potential can exceed the control grids' negative voltage spec. The "PB" components influence the total control grid voltage at the "valleys" to insure that the control grid's negative voltage spec isn't exceeded.

The power supply furnishes KeyUp bias which was a replacement/holdover from the Globe Chief 90 circuit. A such, there is at least -100 volts on the key circuit at Keyup. The 6.8k 2W resistor R2 does limit current at Keydown so as not to tax the Bias supply. This bias could also be used to cutoff exciter stages with proper dropping resistors.

In this updated design, Ip has been corrected and is Ip = IK - 24 mA. Screen grid current = 16 mA and control grid current = 8 mA. Since the metering is at the Mosfet Modulator's Source, actual Ip is less.

This circuit is good for 6146, 807 and similar type finals where the plate voltage doesn't exceed 900 volts. See the High Voltage Cascade dual Mosfet circuitfor a for higher voltage tubes. This is the one I will be using to modulate my new 4-400 transmitter. An updated circuit with extra voltage protection is also included below.

The level of voltage to which a particular cathode voltage circuit may rise is dependent on the tube gain, the number of tubes paralleled, and final loading and may vary between 0.25XVp and 0.4XVp, depending on the circuit

AC0OB FWVD HV Power Supply with Standby Bias