



The textbook Totem Pole amplifier. Very popular. This circuit seems to promise it all. Low distortion, low Z_o , high gain. It works by using a top triode as a current source and a cathode follower at the same time. Resistors R1 and R2 set up the bias voltage for the top triode.

Tube

Tube = 12AU7
 Number = 1
 μ = 17
 g_m = 2.2 ma/v
 r_p = 7700 ohm
 I_{max} = 25 ma
 V_{max} = 300 v
 W_{max} = 2.75 w
 C_{gp} = 1.5 pf

Circuit Setup

R_k = 100 ohm
 R_k bypassed
 R_{in} = 1 k
 R_L = 220 k
 R_a = 5.6 k
 Cap = 0.1 μ f
 I = 5.0ma
 V_{B+} = 220v

AC Results

Gain = 14.99	Gain dB = 23.5 dB
Phase = inverts	PSRR = -19.3 dB
Z_{input} = 354 k	Z_{output} = 878 ohm
F -3dB low = 7.21 hz	F -3dB high = > 1 mhz

DC Results

V_{tube} = 96 v	V_{Ra} = 28 v
V_{bias} = -1.99 v	V_{g2} = 122 v
V_{th} = 6.05 v	$V_{max out}$ = -30/+90.7 v
Plate Dis. = 480 mw	Total Dis. = 1.1 w
R_a Dis. = 140 mw	W_{Rk} = 3 mw

Calculated Part Values

R_k = 399 ohm	Cap R_k = 97 μ f
R_1 = 980 k	R_2 = 1.22 m