

# AMPEREX TUBE TYPE HF-200

## **R.F. Power Amplifier and Oscillator Class B Audio Amplifier or Modulator**

The HF-200 is another of the highly proficient high frequency generators of original Amperex design and development. The outstanding features of low voltage, high current and a high ratio of transconductance to interelectrode capacitance are also properties of this tube.

### GENERAL CHARACTERISTICS

#### RADIATION COOLED TRIODE

##### ELECTRICAL

Filament . . . . .	Thoriated Tungsten
Voltage . . . . .	10 to 11 volts
Current . . . . .	4 amperes
Amplification Factor . . . . .	18
Transconductance (grid to plate) $I_p = 150$ ma . . . . .	5000 micromhos
Direct Interelectrode Capacitances	
Grid to Plate . . . . .	6.9 $\mu\text{mf}$
Grid to Filament . . . . .	6.2 $\mu\text{mf}$
Plate to Filament . . . . .	1.2 $\mu\text{mf}$
Frequency for Maximum Ratings . . . . .	30 megacycles

##### MECHANICAL

Overall Dimensions	
Length . . . . .	10 $\frac{1}{4}$ inches
Maximum Radius . . . . .	2 $\frac{7}{8}$ inches
Mounting Position—Vertical . . . . . Base up or down	
Horizontal . . . . .	Plane of electrodes vertical
Net Weight (approx.) . . . . .	10 $\frac{1}{2}$ ounces
Shipping Weight (approx.) (one tube) . . . . .	4 pounds

# HF-200

## MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

### Audio Frequency Power Amplifier or Modulator—Class B

	Maximum Rating		Typical Operation	
	per Tube	Two Tubes		
A.C. Filament Voltage	....	10	10	10
D.C. Plate Voltage	2500	2000	2500	2500
D.C. Grid Voltage	....	-100	-130	-130
Load Resistance (per Tube) (ohms)	....	2800	4000	4000
Effective Load Resistance (Plate to Plate) (ohms)	....	11200	16000	16000
Zero Signal D.C. Plate Current (ma)	....	60	60	60
Peak A.F. Grid to Grid Voltage	....	420	410	460
Max. Signal D.C. Plate Current (ma)	200	380	320	360
Max. Signal Plate Input (watts)	450	....	....	....
Plate Dissipation (watts)	160	....	....	....
Max. Signal Driving Power (Approx.) (watts)	....	9	2.5	8
Max. Signal Plate Power Output (Approx.) (watts)	....	500	500	600

### R.F. Power Amplifier—Class B—Telephony

(Carrier conditions for use with modulation factors up to 1.0)

	Maximum Rating		Typical Operation	
	per Tube	One Tube		
A.C. Filament Voltage	....	10.5	10.5	
D.C. Plate Voltage	2500	2000	2500	
D.C. Grid Voltage	....	-110	-140	
Peak R.F. Grid Voltage	....	125	130	
D.C. Plate Current (ma)	150	110	90	
Plate Input (watts)	250	220	225	
D.C. Grid Current (Approx.) (ma)	....	.5	0	
R.F. Grid Current (amps)	10	....	....	
Plate Dissipation (watts)	150	140	145	
Driving Power (Approx.) at Peak of Modulation (watts)	....	6	4	
Plate Power Output (Approx.) (watts)	....	80	80	
F.C.C. Broadcast Rating (watts)	50	....	....	
(Nearest Classification for Final Stage Use)				

### R.F. Power Amplifier—Class C—Telegraphy

	Maximum Rating		Typical Operation	
	per Tube	One Tube		
A.C. Filament Voltage	....	10.5	10.5	
D.C. Plate Voltage	2500	2000	2500	
D.C. Grid Voltage	-500	-250	-300	
Peak R.F. Grid Voltage	....	410	455	

D.C. Plate Current (ma)	200	200	200
Plate Input (watts)	500	400	500
D.C. Grid Current (Approx.) (ma)	50	23	18
R.F. Grid Current (amps)	12	....	....
Plate Dissipation (watts)	150	100	120
Driving Power (Approx.) (watts)	....	9	8
Plate Power Output (Approx.) (watts)	....	300	380
Frequency Limit for Above Operation (mc)	20	....	....

### Plate Modulated R.F. Power Amplifier—Class C—Telephony

(Carrier conditions for use with modulation factors of 1.0)

	Maximum Rating		Typical Operation	
	per Tube	One Tube		
A.C. Filament Voltage	....	11.0	10.5	
D.C. Plate Voltage	2000	1750	2000	
D.C. Grid Voltage	-500	....	....	
Total Bias	....	-300	-350	
Fixed Bias	....	-75	-100	
Grid Resistor (ohms)	....	7500	12500	
Peak R.F. Grid Voltage (per Tube)	....	475	500	
D.C. Plate Current (ma)	200	200	160	
Plate Input (watts)	400	350	320	
D.C. Grid Current (Approx.) (ma)	50	30	20	
R.F. Grid Current (amps)	10	....	....	
Plate Dissipation (watts)	120	80	70	
Driving Power (Approx.) (watts)	....	14	9	
Plate Power Output (Approx.) (watts)	....	270	250	
Frequency Limit for Above Operation (mc)	30	....	....	
F.C.C. Broadcast Rating (watts)	125	....	....	
(Nearest Classification for Final Stage Use)				

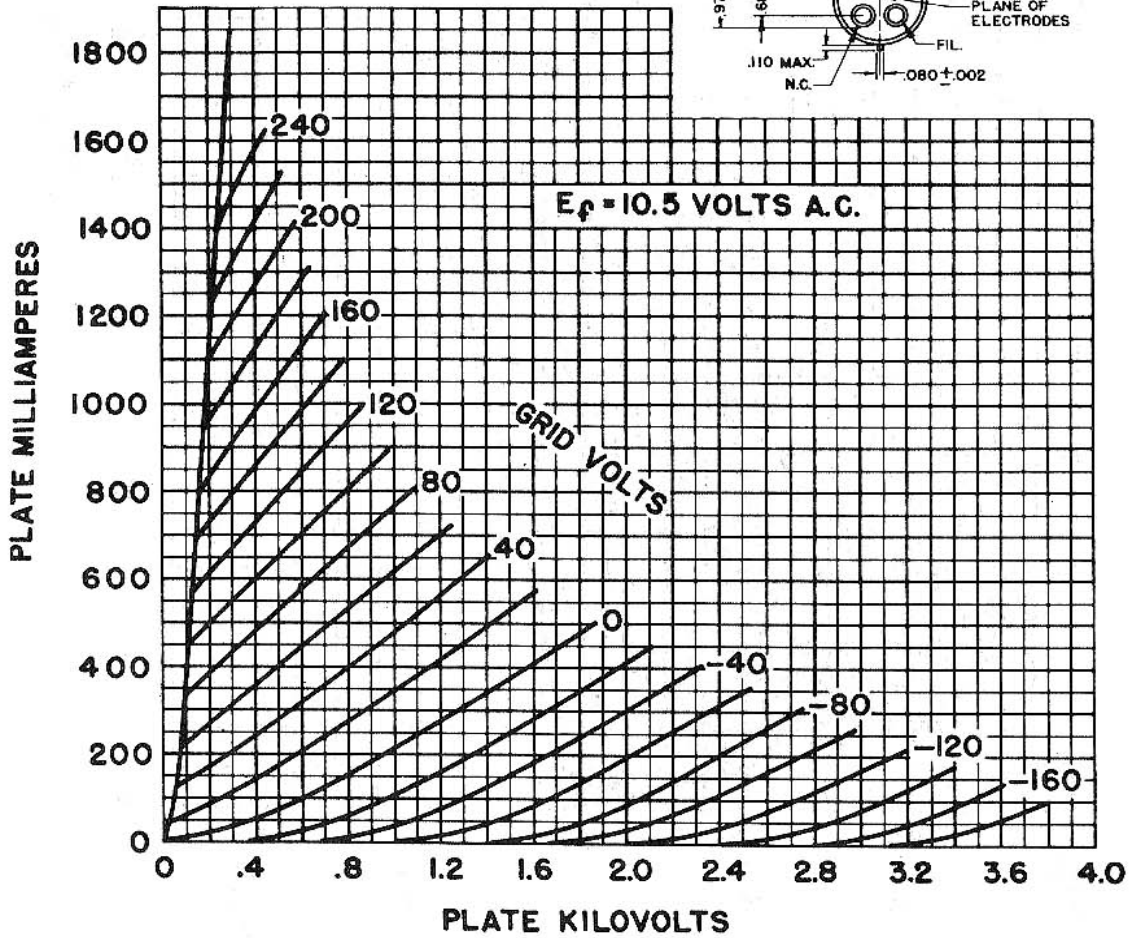
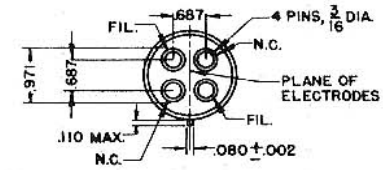
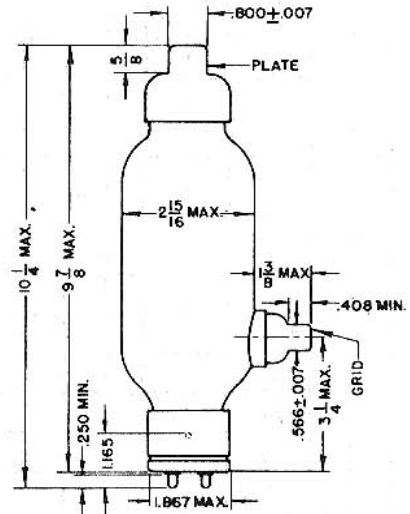
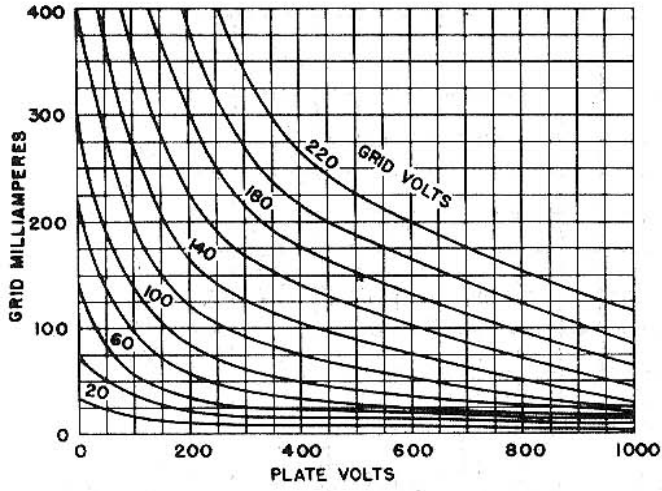
### Self-Excited High Frequency Oscillator or Power Amplifier—Class C

Maximum Ratings for Operations at	20 mc.		50 mc.	
D.C. Plate Voltage	2500	2000		
Modulated D.C. Plate Voltage	2000	1700		
A.C. Plate Voltage	3000	2500		
D.C. Plate Current (ma)	200	200		
D.C. Grid Bias Voltage	500	350		
D.C. Grid Current (ma)	50	40		
Plate Dissipation (watts)	150	150		

Typical Operation (2 Tubes in TNT Push-Pull Circuit)

Frequency	20 mc.		50 mc.	
A.C. Plate Voltage	2800	2400		
D.C. Plate Current	380 ma	340 ma		
Power Output to Load	650 watts	450 watts		

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