

# AMPEREX TUBE TYPE HF-300

## AF Power Amplifier or Modulator RF Power Amplifier or Oscillator

The HF-300 has found favor with many broadcasters and transmitter designers as a substitute for the 204A. A study of the operational data will disclose its superiority, in many classes of service, to the latter tube. It also, like the HF-100 and HF-200, is an efficient high frequency generator and possesses the characteristic common to Amperex designed tubes, of a high ratio of transconductance to interelectrode capacitance.

### GENERAL CHARACTERISTICS

#### RADIATION COOLED TRIODE

##### ELECTRICAL

Filament . . . . .	Thoriated Tungsten	
Voltage . . . . .	11 volts	←
Current . . . . .	4 amperes	
Amplification Factor . . . . .	23	
Grid to Plate Transconductance, $I_p = 150$ ma . . . . .	5600 micromhos	
Direct Interelectrode Capacitances		
Grid to Plate . . . . .	7.0 $\mu\text{mf}$	
Grid to Filament . . . . .	6.0 $\mu\text{mf}$	
Plate to Filament . . . . .	1.0 $\mu\text{mf}$	
Frequency for Maximum Ratings . . . . .	20 megacycles	

##### MECHANICAL

Overall Dimensions		
Maximum Length . . . . .	10 $\frac{3}{8}$ inches	
Greatest Radius . . . . .	2 $\frac{7}{8}$ inches	
Base . . . . .	Standard Jumbo	
	4 Pin Bayonet	
Mounting Position—Vertical . . . . .	Base up or down	
Horizontal . . . . .	Plane of electrodes vertical	
Net Weight (approx.) . . . . .	11 ounces	
Shipping Weight (approx.) (one tube) . . . . .	5 pounds	

# HF-300

## MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

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

	Maximum Rating per Tube	Typical Operation Two Tubes Push-Pull		
		11	11	11
A.C. Filament Voltage	.....	11	11	11
D.C. Plate Voltage	3000	2000	2500	3000
D.C. Grid Voltage	.....	-72	-95	-115
Load Resistance (per Tube) (ohms)	.....	2400	3400	5000
Effective Load Resistance (plate to plate) (ohms)	.....	9600	13600	20000
Zero Signal Plate Current (ma)	.....	60	60	60
Peak A.F. Grid to Grid Voltage	.....	404	430	450
Max. Signal Plate Current (ma)	275	480	430	360
Max. Signal Plate Input (watts)	600	.....	.....	.....
Plate Dissipation (watts)	200	.....	.....	.....
Max. Signal Driving Power (approx.) (watts)	.....	14	13	13
Max. Signal Plate Power Output (watts)	.....	650	740	780

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

(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube		
		11	11	11
A.C. Filament Voltage	.....	11	11	11
D.C. Plate Voltage	2500	1500	2000	2500
D.C. Grid Voltage	.....	-60	-80	-100
Peak R.F. Grid Voltage	.....	130	125	120
D.C. Plate Current (ma)	200	185	150	120
Plate Input (watts)	320	278	300	300
D.C. Grid Current (approx.) (ma)	.....	5	2	0.5
R.F. Grid Current (amps)	10	.....	.....	.....
Plate Dissipation (watts)	200	186	195	195
Driving Power (at Modulation Peak) (watts)	.....	17	10	6
Plate Power Output (watts)	.....	92	105	105
F.C.C. Broadcast Rating (watts) (Nearest Classification for Final Stage Use)	75	.....	.....	.....

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

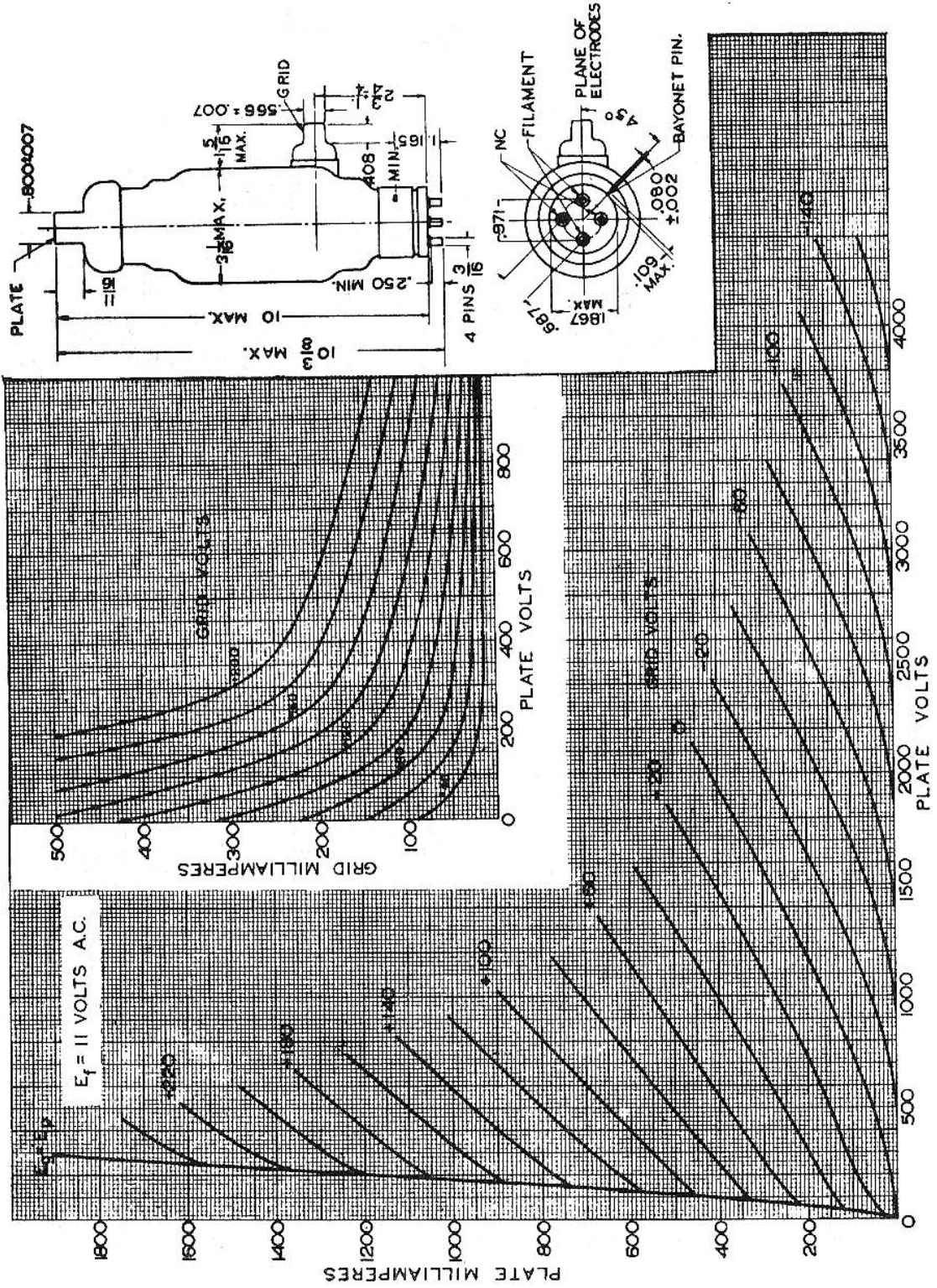
(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
		11	11
A.C. Filament Voltage	.....	11	11
D.C. Plate Voltage	2200	1500	2000
D.C. Grid Voltage	-500	-200	-300
Fixed Grid Bias (volts)	.....	-50	-84
Grid Resistor (ohms)	.....	2500	6000
Peak R.F. Grid Voltage	.....	400	490
D.C. Plate Current (ma)	275	275	250
Plate Input (watts)	600	413	500
D.C. Grid Current (ma)	60	60	36
R.F. Grid Current (amps)	10	.....	.....
Plate Dissipation (watts)	150	103	115
Driving Power (approx.) (watts)	.....	22	17
Plate Power Output (watts)	.....	310	385
Frequency Limit for Above Operation (mc)	20	40	30
F.C.C. Broadcast Rating (watts) (Nearest Classification for Final Stage Use)	250	.....	.....

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

	Maximum Rating per Tube	Typical Operation One Tube		
		11	11	11
A.C. Filament Voltage	.....	11	11	11
D.C. Plate Voltage	3000	3000	2500	2000
D.C. Grid Voltage	-500	-400	-300	-200
Peak R.F. Grid Voltage	.....	590	490	385
D.C. Plate Current (ma)	275	250	260	275
Plate Input (watts)	750	750	650	550
D.C. Grid Current (approx.) (ma)	60	38	36	36
R.F. Grid Current (amps)	12	.....	.....	.....
Plate Dissipation (watts)	200	150	130	140
Driving Power (approx.) (watts)	.....	16	17	13
Plate Power Output (watts)	.....	600	520	410
Frequency Limit for Above Operation (mc)	20	20	30	40

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