

AMPEREX TUBE TYPE 212-F

Audio Frequency Power Amplifier or Modulator
Radio Frequency Power Amplifier or Modulator

GENERAL CHARACTERISTICS

RADIATION COOLED TRIODE

ELECTRICAL

Filament	Thoriated Tungsten
Voltage	14.0 volts (ac or dc)
Current	6.0 amperes
Average Characteristics: At plate voltage of 2000 Volts and grid bias of—132 Volts.	
Amplification Factor	16
Grid to Plate Transconductance	8000 micromhos
Plate Resistance	2000 ohms
Direct Interelectrode Capacitances	
Grid to Plate	19 $\mu\mu\text{f}$
Grid to Filament	11 $\mu\mu\text{f}$
Plate to Filament	7 $\mu\mu\text{f}$

MECHANICAL

Maximum Overall Dimensions	
Length	13 $\frac{5}{8}$ inches
Diameter	3 $\frac{5}{8}$ inches
Base	Standard Large 4-Pin
Mounting Position—Vertical	Base Down
Horizontal	Plane of electrodes vertical
Net Weight (approx.)	1 pound
Shipping Weight (approx.) (one tube)	7 pounds

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier and Modulator—Class A

	Maximum Rating per Tube	Typical Operation One Tube		
D.C. Filament Voltage	.....	14	14	14
D.C. Plate Voltage	3000	1250	1500	2000
D.C. Grid Voltage ¹	.....	—40	—57	—95
Peak A.F. Grid Voltage	.....	52	63	95
D.C. Plate Current (ma)	.....	180	170	130
Plate Input (watts)	300	225	255	260
Plate Dissipation (watts)	300	225	255	260
Load Resistance (ohms)	.....	3000	5000	8000
Power Output (watts)	.....	40	50	75
Distortion (% Second Harmonic)	.....	5	4	4

NOTE:

¹ With respect to negative filament terminal.

A.F. Amplifier or Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes		
D.C. Filament Voltage	.....	14	14	14
D.C. Plate Voltage	2000	1500	2000	2000
D.C. Grid Voltage	.....	—75	—110	—110
Load Resistance (ohms per tube)	.....	1475	2000	1900
Effective Load Resistance (plate to plate) (ohms)	.....	5900	8000	7600
Zero Signal Plate Current (ma)	.....	100	90	90
Peak A.F. Grid to Grid Voltage	.....	320	380	420
Max. Signal Plate Current (ma) ¹	350	530	520	600
Max. Signal Plate Input (watts)	700	800	1040	1200
Plate Dissipation (watts) ¹	275	300 ²	390 ²	360 ²
Minimum Grid Input Resistance (ohms)	.....	700	900	420
Max. Signal Driving Power (watts)	.....	6	5	12
Max. Signal Power Output (watts)	.....	500	650	840

NOTES:

¹ Averaged over any audio-frequency cycle of sine-wave form.

² Averaged over a maximum-signal cycle of sine-wave form.

R.F. Power Amplifier—Class B—Telephony

(Carrier conditions for use with a maximum modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube		
D.C. Filament Voltage	.....	14	14	14
D.C. Plate Voltage	2000	1500	1500	2000
D.C. Grid Voltage	.....	—70	—70	—105
Plate Load Resistance (ohms)	.....	2750	2050	3000
Peak R.F. Grid Voltage	.....	85	98	112
D.C. Plate Current (ma)	350	150	200	188

Plate Input (watts)	412	225	300	375
Plate Dissipation (watts)	275	150	200	245
D.C. Grid Current (ma)	.....	0.5	1.5	0.2
Driving Power (watts) ¹	.....	3	6	5
Plate Power Output (watts)	.....	75	100	130
Frequency Limit for Above Operation (mc)	1.5	3	3	1.5
F.C.C. Broadcast Rating (watts)	75	75	100	125

NOTE:

¹ At crest of a.f. cycle with modulation factor of 1.0.

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

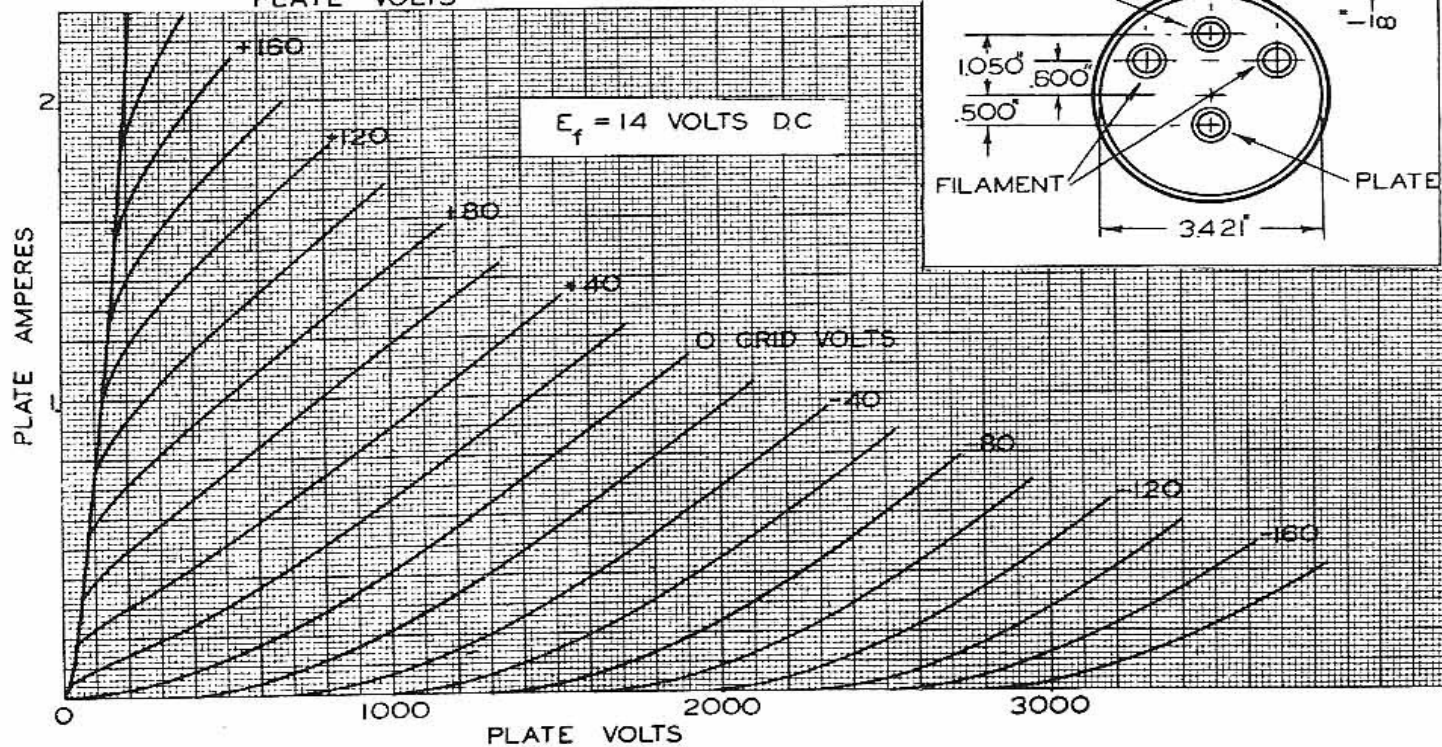
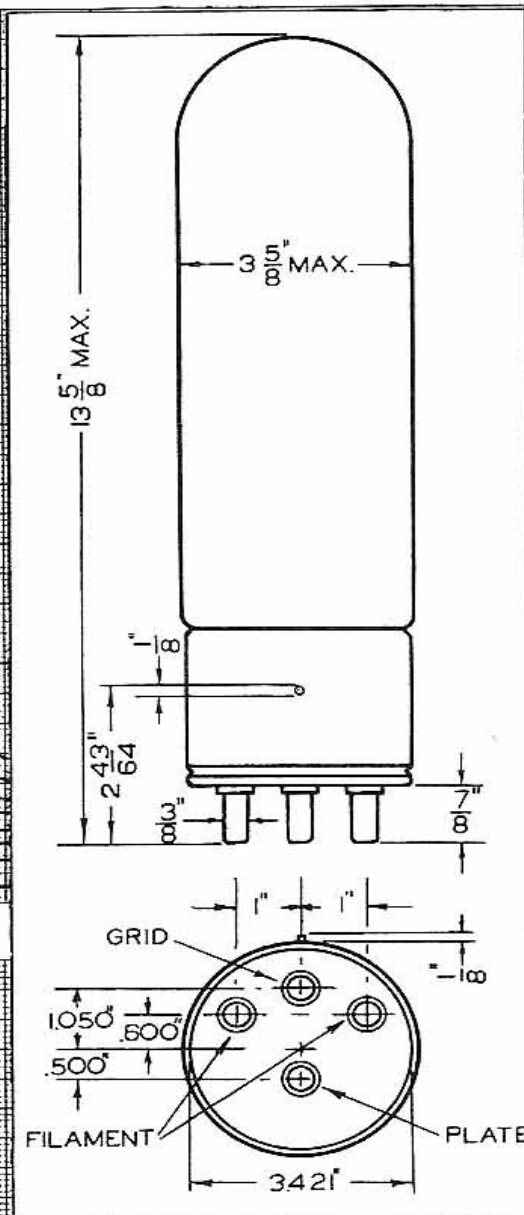
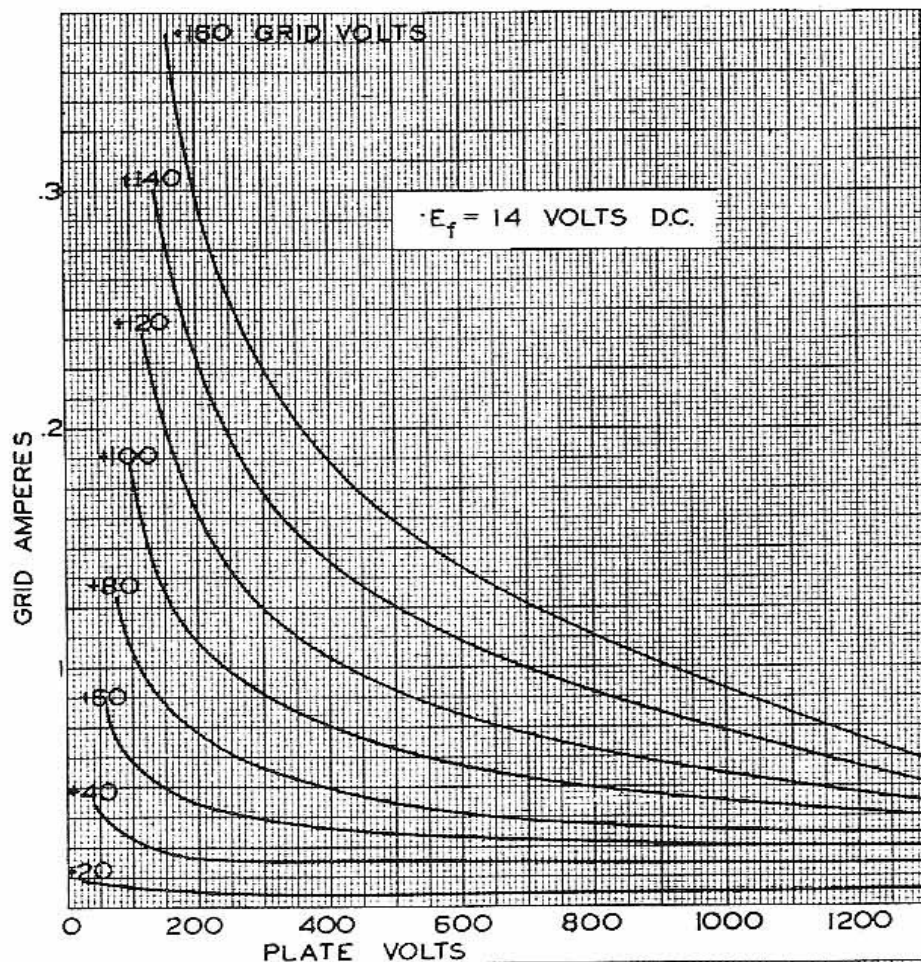
(Carrier conditions for use with a maximum modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
D.C. Filament Voltage	.....	14	14
D.C. Plate Voltage	1500	1500	1000
D.C. Grid Voltage	—400	—200	150
Plate Load Resistance (ohms)	.....	2700	1500
Peak R.F. Grid Voltage	.....	340	300
D.C. Plate Current (ma)	350	278	325
Plate Input (watts)	525	417	325
Plate Dissipation (watts)	200	80	85
D.C. Grid Current (approx.) (ma)	75	37	48
Driving Power (approx.) (watts)	.....	12	14
Plate Power Output (watts)	.....	337	240
Frequency Limit for Above Operation (mc)	1.5	1.5	3
F.C.C. Broadcast Rating (watts)	250	250	.....

R.F. Power Amplifier or Oscillator Class C—Telegraphy

(Key-down conditions without modulation)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	.....	14	14
Plate Voltage	2000	1500	2000
D.C. Grid Voltage	—400	—200	250
Plate Load Resistance (ohms)	.....	2000	2900
Peak R.F. Grid Voltage	.....	340	380
D.C. Plate Current (ma)	350	350	325
Plate Input (watts)	700	525	650
Plate Dissipation (watts)	275	125	150
D.C. Grid Current (approx.) (ma)	100	32	23
Driving Power (approx.) (watts)	.....	10	8
Plate Power Output (watts)	.....	400	500
Frequency Limit for Above Operation (mc)	1.5	3	1.5



212-F

