

Radio Frequency Power Amplifier: Modulator

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier and Modulator—Class A

	Maximum Rating per Tube	Typical Operation One Tube
Filament Voltage*	..	21
D.C. Plate Voltage	12000	8000
D.C. Grid Voltage	..	-630
Plate Load Resistance (ohms)	..	5200
Peak A.F. Grid Voltage	..	700
D.C. Plate Current (amps)	..	0.9
Plate Input (kw.)	7.5	7.2
Plate Dissipation (kw.)†	7.5	7.2
Power Output (kw.)	..	2.0

A.F. Power Amplifier and Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes	
Filament Voltage*	..	21.5	21.5
D.C. Plate Voltage	15000	6000	10000
D.C. Grid Voltage	..	-600	-1100
Load Resistance (per tube) (ohms)	..	1250	2000
Effective Load Resistance (plate to plate) (ohms)	..	5000	8000
Zero Signal Plate Current (amps)	..	0.5	0.5
Peak A.F. Grid to Grid Voltage	..	2000	3200
Max. Signal Plate Current (amps)**	2.0	2.3	2.75
Max. Signal Plate Input (kw.)**	15.0	13.8	27.5
Plate Dissipation (kw.)**	5.0	..	..
Minimum Grid Input Resistance (approx.) (ohms)	..	1000	450
Max. Signal Driving Power (approx.) (watts)	..	80	240
Max. Signal Power Output (kw.)	..	8	18

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	
Filament Voltage*	..	21.5	21.5
D.C. Plate Voltage	15000	6000	10000
D.C. Grid Voltage	..	-600	-1100
Plate Load Resistance (ohms)	..	2000	3200
Peak R.F. Grid Voltage	..	600	900
D.C. Plate Current (amps)	1.0	0.7	0.8
Plate Input (kw.)	10.0	4.2	8.0
Plate Dissipation (kw.)	6.0	3.0	5.5
Driving Power (approx.) (watts)***	..	80	0
Power Output (kw.)	..	1.2	2.5
Frequency Limit for Above Operation (mc.)	..	20	10

GENERAL CHARACTERISTICS

Filament—Two unit type, for single-phase or two-phase A.C. or D.C. operation:	
Voltage per Unit	11
Current per Unit (amps)	60
Amplification Factor	8
Grid to Plate Transconductance at a plate current of 0.75 ampere	4000 micromhos
Direct Interelectrode Capacitances:	
Grid to Plate	28 $\mu\mu\text{f}$
Grid to Filament	16 $\mu\mu\text{f}$
Plate to Filament	3 $\mu\mu\text{f}$
Dimensions:	
Maximum Overall Length	20 $\frac{5}{8}$ "
Maximum Radius	6 $\frac{1}{2}$ "

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

Carrier conditions for use with modulation factors up to 1.0

	Maximum Rating per Tube	Typical Operation One Tube	
Filament Voltage*	..	22.0	22.0
D.C. Plate Voltage	8000	6000	8000
D.C. Grid Voltage	-3000	-2000	-2400
Plate Load Resistance (ohms)	..	3800	5000
Peak R.F. Grid Voltage	..	2650	3100
D.C. Plate Current (amps)	1.0	.75	.78
Plate Input (kw.)	8	4.5	6.3
Plate Dissipation (kw.)	4	1.0	1.3
D.C. Grid Current (approx.) (ma.)	150	100	80
Driving Power (approx.) (watts)	..	260	260
Power Output (kw.)	..	3.5	5.0
Frequency Limit for Above Operation (mc.)	1.6	7.5	1.6
F.C.C. Broadcast Rating (kw.)	5	..	5

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

Key-down conditions without modulation

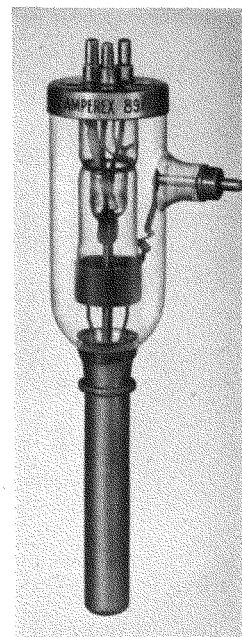
	Maximum Rating per Tube	Typical Operation One Tube	
Filament Voltage	..	21.5	22
D.C. Plate Voltage	12000	8000	10000
D.C. Grid Voltage	-3000	-1800	-2000
Plate Load Resistance (ohms)	..	3800	4000
Peak R.F. Grid Voltage	..	2500	2900
D.C. Plate Current (amps)	2.0	1.1	1.45
Plate Input (kw)	18.0	8.8	14.5
Plate Dissipation (kw.)	6.0	2.0	4.0
D.C. Grid Current (approx.) (ma.)	150	60	110
Driving Power (approx.) (watts)	..	150	300
Plate Power Output (kw.)	..	6.5	10
Frequency Limit for Above Operation (mc.)	1.6	15	7.5

*Two filament units in series.

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

***At crest of audio frequency cycle with modulation factor of 1.0.

†At zero signal.



AMPEREX

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