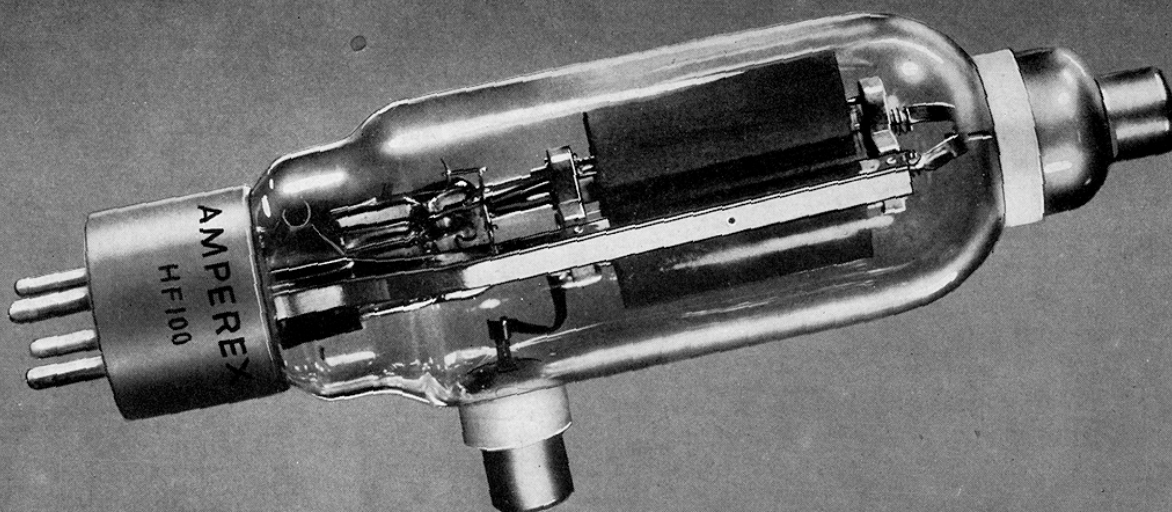


AMPEREX TRANSMITTING TUBE HF-100



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

The HF-100 is one of a distinctive group of low voltage high current tubes, an original development of the Amperex Engineering Laboratories. It is in addition characterized by an extraordinarily high ratio of transconductance to interelectrode capacitance, a characteristic which is responsible for its outstanding efficiency in high frequency circuits.

GENERAL CHARACTERISTICS

RADIATION COOLED TRIODE

ELECTRICAL

Filament	Thoriated Tungsten
Voltage	10 to 10.5 volts
Current	2.5 amperes
Amplification Factor	23
Transconductance (grid to plate) $I_p = 100 \text{ ma}$	4200 micromhos
Direct Interelectrode Capacitances	
Grid to Plate	4.5 μf
Grid to Filament	4.0 μf
Plate to Filament	2.6 μf
Frequency for Maximum Ratings	30 megacycles

MECHANICAL

Maximum Overall Dimensions	
Length	$7\frac{5}{8} \pm \frac{1}{4}$ inches
Greatest Radius	$1\frac{15}{16} \pm \frac{1}{8}$ inches
Mounting Position	
Vertical—Base up or down	
Horizontal—Plane of electrodes vertical	
Net Weight (approx.)	5 ounces
Shipping Weight (approx.) (one tube)	2 pounds

HF-100

HF-100—AMPEREX TRANSMITTING TUBE

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Audio Frequency Power Amplifier or Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes
A.C. Filament Voltage	10	10
D.C. Plate Voltage	1750	1500
D.C. Grid Voltage	—52	—62
Load Resistance (per tube) (ohms)	3000	4000
Effective Load Resistance (Plate to Plate) (ohms)	12000	16000
Zero-Signal Plate Current (ma)	50	40
Peak A.F. Grid to Grid Voltage	264	324
Max. Signal Plate Current (ma)	150	270
Max. Signal Plate Input (watts)	240	270
Plate Dissipation (watts)	75	9
Max. Signal Driving Power (approx.) (watts)	2	9
Max. Signal Power Output (approx.) (watts)	260	350

R.F. Power Amplifier—Class B—Telephony

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

	Maximum Rating per Tube	Typical Operation One Tube
A.C. Filament Voltage	10	10
D.C. Plate Voltage	1500	1500
D.C. Grid Voltage	—55	—55
Peak R.F. Grid Voltage	80	80
D.C. Plate Current (ma)	100	75
Plate Input (watts)	115	112
D.C. Grid Current (approx.) (ma)	75	1.5
Plate Dissipation (watts)	75	70
Grid Driving Power at Modulation Peak (approx.) (watts)	3	3
Power Output (approx.) (watts)	42	42

R.F. Power Amplifier—Class C—Telegraphy

	Maximum Rating per Tube	Typical Operation One Tube
A.C. Filament Voltage	10	10
D.C. Plate Voltage	1500	1250
D.C. Grid Voltage	—300	—200
Peak R.F. Grid Voltage	250	330
D.C. Plate Current (ma)	150	130
Plate Input (watts)	225	162
D.C. Grid Current (approx.) (ma)	30	18
Plate Dissipation (watts)	75	42
Driving Power (approx.) (watts)	5	6
Power Output (approx.) (watts)	106	170
Frequency Limit for Above Operation (mc.)	30	—

Plate Modulated R.F. Power Amplifier—Class C

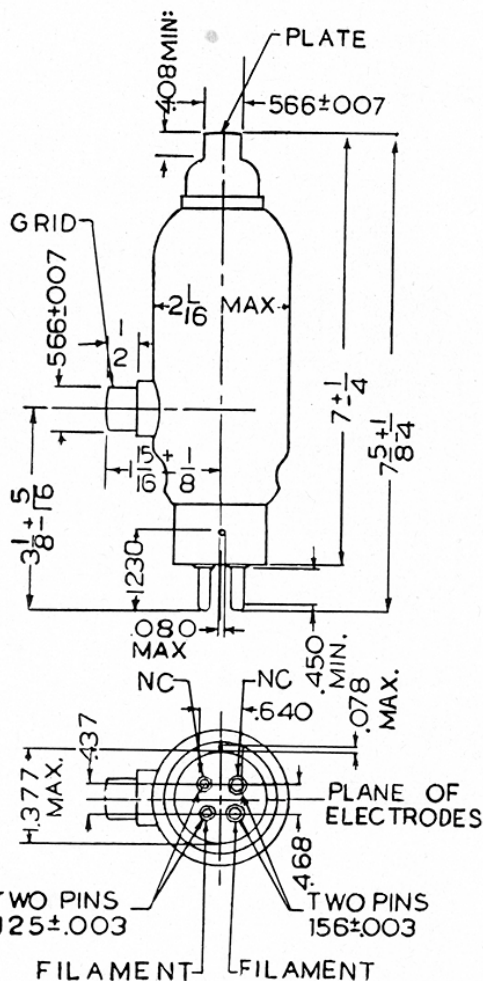
(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube
A.C. Filament Voltage	10.5	10.5
D.C. Plate Voltage	1250	1000
D.C. Grid Voltage (Total)	—300	—200
Fixed Bias (approx.) (Voltage)	—30	—40
Grid Resistor (approx.) (ohms)	8500	10000
Peak R.F. Grid Voltage	330	380
D.C. Plate Current (ma)	120	110
Plate Input (watts)	140	137
D.C. Grid Current (approx.) (ma)	30	21
Plate Dissipation (watts)	50	32
Driving Power (approx.) (watts)	6.5	8
Plate Power Output (approx.) (watts)	90	105
Frequency Limit for Above Operation (mc.)	30	—
F.C.C. Broadcast Rating (watts)	75	—
(Nearest Classification for Final Stage Use)	—	—

Grid Modulated R.F. Power Amplifier—Class C

(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube
A.C. Filament Voltage	10.0	10.0
D.C. Plate Voltage	1500	1500
D.C. Grid Voltage (Fixed Voltage)	—300	—280
Peak R.F. Grid Voltage	340	340
D.C. Plate Current (ma)	100	72
Plate Input (watts)	110	108
D.C. Grid Current (approx.) (ma)	75	1.5
Plate Dissipation (watts)	66	66
Grid Driving Power at Modulation Peak (approx.) (watts)	6	6
Power Output (approx.) (watts)	42	42
Frequency Limit for Above Operation (mc.)	30	—



Self-Excited High Frequency Oscillator or Power Amplifier Class C

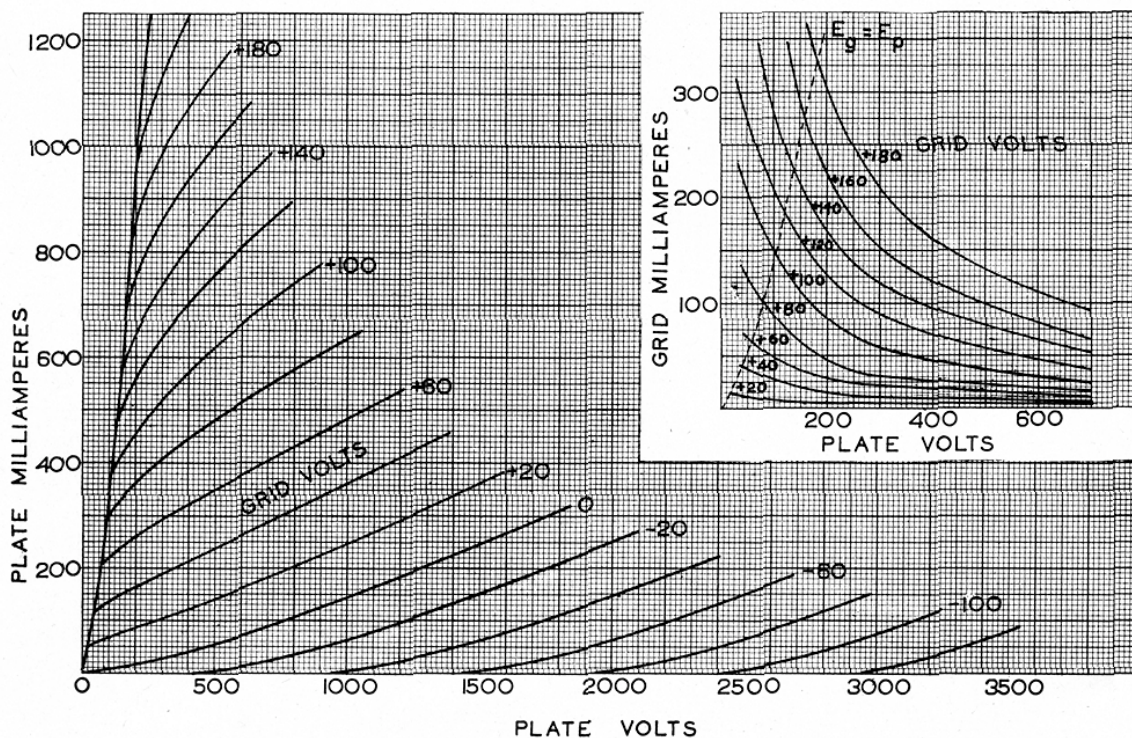
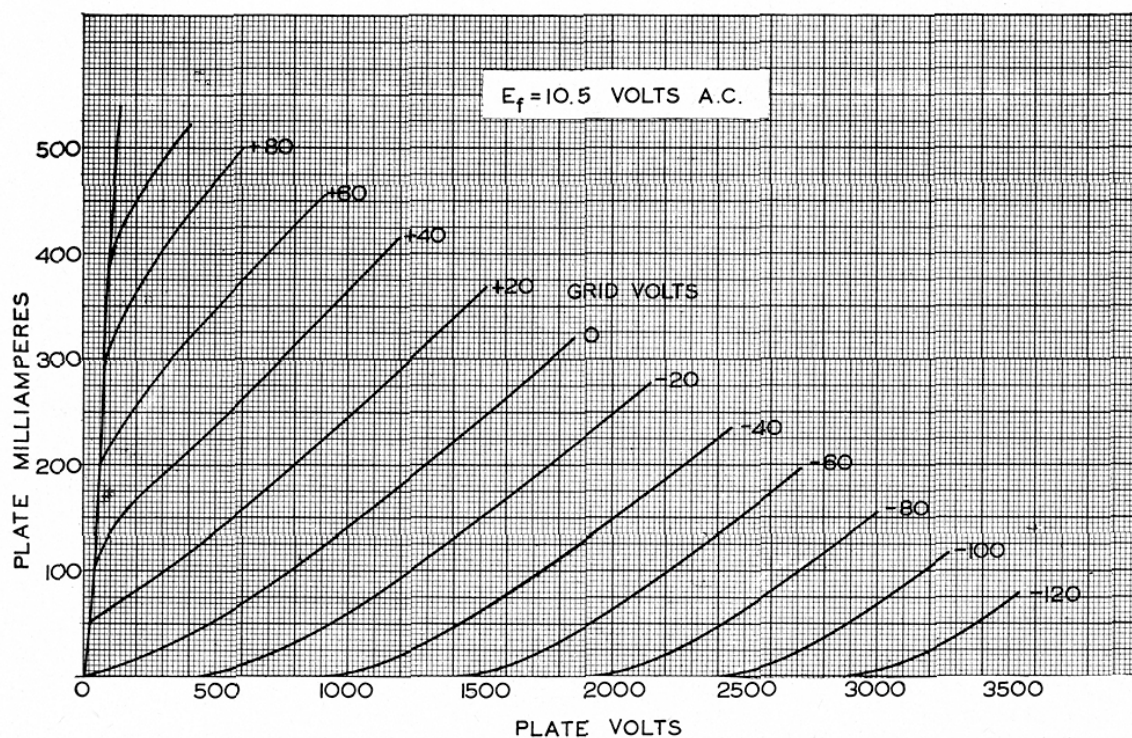
	Maximum Ratings for Operation at 30 mc.	Maximum Ratings for Operation at 60 mc.	Maximum Ratings for Operation at 90 mc.
D.C. Plate Voltage	1500	1200	1000
Modulated D.C. Plate Voltage	1250	1000	800
A.C. Plate Voltage	1500	1500	1200
D.C. Plate Current (ma)	150	130	120
D.C. Grid Bias Voltage	—300	—225	—150
D.C. Grid Current (ma)	30	30	20
Plate Dissipation (watts)	75	60	50

Typical High Frequency Performance of 2 Tubes in Tuned-Grid Tuned-Plate Push-Pull Circuits

Frequency	30 mc.	60 mc.	90 mc.
Plate Voltage	1500 A.C.	1200 D.C.	1000 D.C.
Plate Current	280 ma	260 ma	220 ma
Power Delivered to Load Circuit	260 watts	220 watts	120 watts

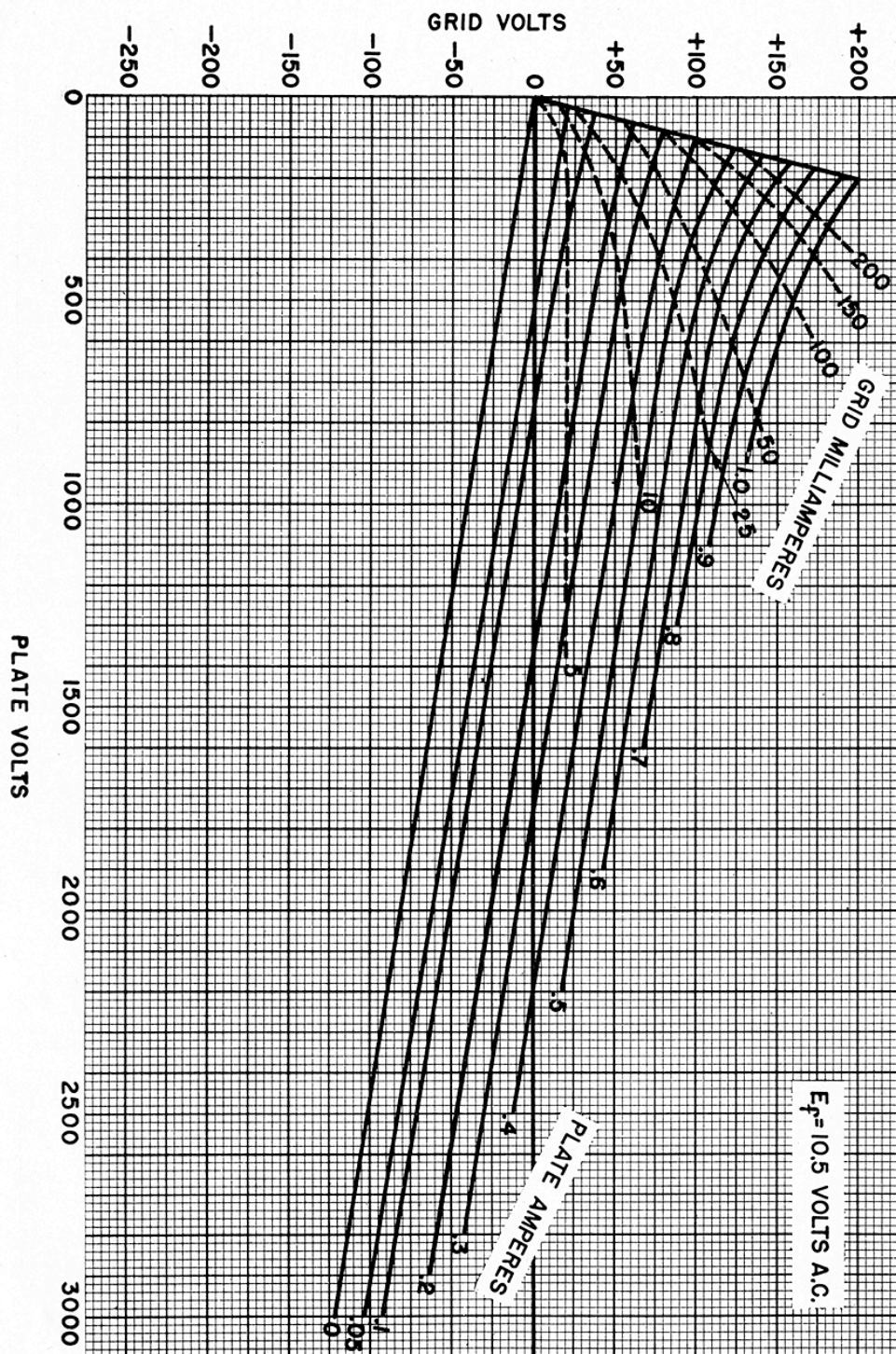
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HF-100 — AMPEREX TRANSMITTING TUBE



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