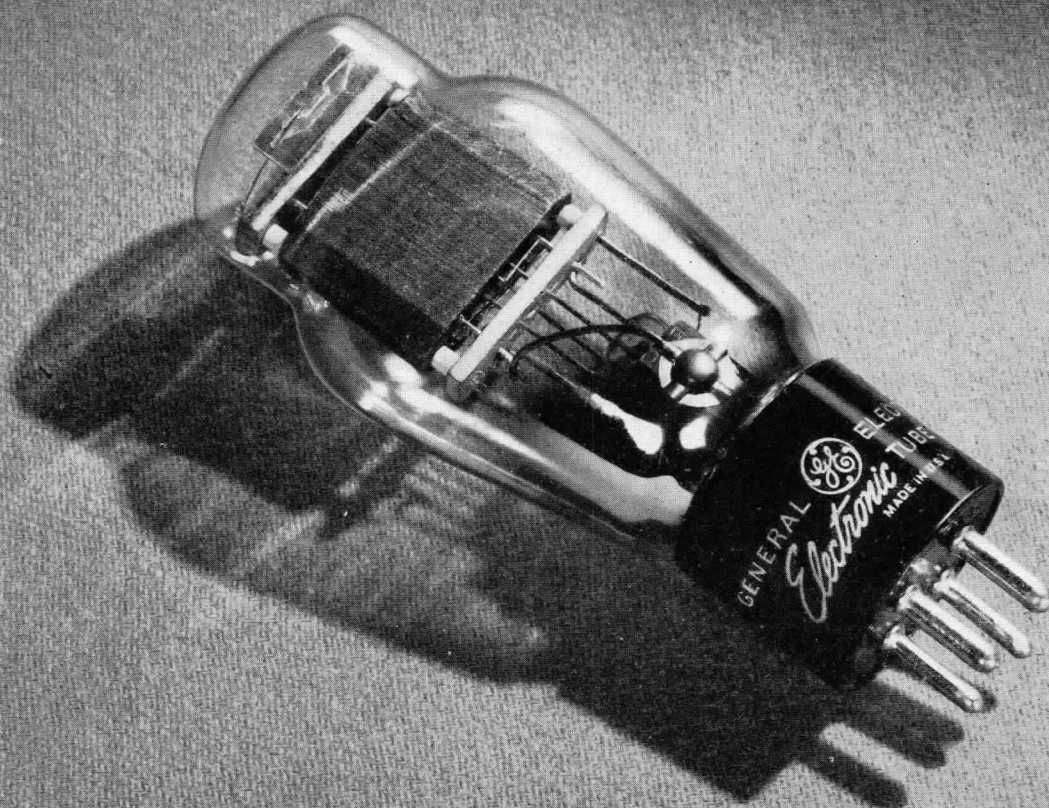




TRIODE

DESCRIPTION

The GL-801-A is a three-electrode high-vacuum tube for use as a radio-frequency amplifier and oscillator at high radio frequencies. It may also be used as an audio-frequency amplifier and

modulator. The design of the tube is such that it may be operated at full ratings at frequencies as high as 60 megacycles and at frequencies up to 120 megacycles at reduced ratings.

TECHNICAL INFORMATION

These data are for reference only. For design information refer to specifications.

GENERAL CHARACTERISTICS

Number of electrodes	3
Electrical	
Cathode—Filamentary	
Filament voltage	7.5 volts
Filament current	1.25 amperes
Amplification factor ($I_b = .030$)	8
Grid-plate transconductance	1840 micromhos
Direct interelectrode capacitances:	
Grid-plate	6 micromicrofarads
Grid-filament	4.5 micromicrofarads
Plate-filament	1.5 micromicrofarads
Mechanical	
Base or terminal description	Medium 4-pin ceramic, bayonet
Net weight, approx.	3 ounces
Shipping weight, approx.	3 pounds
Mounting position	vertical, base down— horizontal, plane of plate vertical


Electronic
 TUBE

GENERAL  ELECTRIC

TECHNICAL INFORMATION (CONT'D)

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

CLASS A₁ AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR

		Typical Operation	Maximum Ratings	
D-c plate voltage.....	425	500	600	volts
D-c grid voltage Δ	-40	-45	-55	volts
D-c plate current.....	18	24	30	milliamperes
Plate dissipation.....			20	watts
Peak a-f grid voltage.....	35	40	50	volts
Plate resistance.....	5000	4600	4300	ohms
Transconductance.....	1600	1725	1840	micromhos
Load resistance.....	10200	8000	7800	ohms
U.P.O. 5% second harmonic.....	1.6	2.3	3.8	watts

CLASS B AUDIO-FREQUENCY POWER AMPLIFIER (TWO TUBES)

D-c plate voltage.....	400	500	600	600	volts
Maximum signal plate current (per tube)*.....				70	milliamperes
D-c maximum signal plate input (per tube)*.....				42	watts
Plate dissipation (per tube)*.....				20	watts
D-c grid voltage.....	-50	-60	-75		volts
Peak a-f grid input voltage.....	270	290	320		volts
Zero signal plate current.....	8	8	8		milliamperes
Max signal plate current.....	130	130	130		milliamperes
Max signal driving power, approx.....	3	3	3		watts
Effective load, plate-to-plate.....	6000	8000	10000		ohms
Max signal plate power output.....	27	36	45		watts

CLASS B RADIO-FREQUENCY POWER AMPLIFIER

Carrier conditions per tube for use with a max modulation factor of 1.0

D-c plate voltage.....	500	600	600	volts
D-c grid voltage Δ	-60	-75		volts
D-c plate current.....	45	45	50	milliamperes
Plate input.....			30	watts
Plate dissipation.....			20	watts
Peak r-f grid input voltage.....	85	90		volts
D-c grid current, approx**.....	0.2	0.2		milliampere
Driving power, approx†**.....	2.2	2.3		watts
Plate power output.....	6	7.5		watts

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—PLATE-MODULATED

Carrier conditions per tube for use with a maximum modulation factor of 1.0

D-c plate voltage.....	400	500	500	volts
D-c grid voltage $\Delta \diamond$	-150	-190	-200	volts
	10000	12700		ohms
D-c plate current.....	55	55	60	milliamperes
D-c grid current, approx**.....	15	15	15	milliamperes
Plate input.....			30	watts
Plate dissipation.....			13.5	watts
Peak r-f grid input voltage, approx.....	260	300		volts
Driving power, approx**.....	4	4.5		watts
Plate power output.....	14	18		watts

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Key-down conditions per tube without modulation†

D-c plate voltage.....	500	600	600	volts
D-c grid voltage $\Delta \pi$	-125	-150	-200	volts
	8300	10000		ohms
	1560	1875		ohms
D-c plate current.....	65	65	70	milliamperes
D-c grid current, approx.....	15	15	15	milliamperes
Plate input.....			42	watts
Plate dissipation.....			20	watts
Peak r-f grid input voltage, approx.....	235	260		volts
Driving power, approx.....	3.5	4		watts
Plate power output.....	20	25		watts

*Averaged over any audio-frequency cycle.

§The d-c resistance in the grid circuit should not exceed 0.5 megohm with cathode bias, or 0.1 megohm with fixed bias.

†At crest of audio-frequency cycle.

‡Modulation, essentially negative, may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.

△With a-c filament supply.

**Subject to wide variation depending on the impedance of the load circuit. High-impedance load circuits require more grid current and driving power to obtain the desired output. Low-impedance circuits need less grid current and driving power but plate circuit efficiency is sacrificed. The driving stage should have a tank circuit of good regulation and should be capable of delivering considerably more than the required driving power.

◆Obtained by grid resistor of value shown, or by combination of grid resistor with either fixed supply or suitably bypassed cathode resistor.

π Obtained from fixed supply, by grid resistor (8300, 10000), or by cathode resistor (1560, 1875). When the 801 is used in the final amplifier or a preceding stage of a transmitter designed for break-in operation and oscillator keying, a small amount of fixed bias must be used to maintain the plate current at a safe value. With a plate voltage of 600 volts, a fixed bias of at least 50 volts should be used.

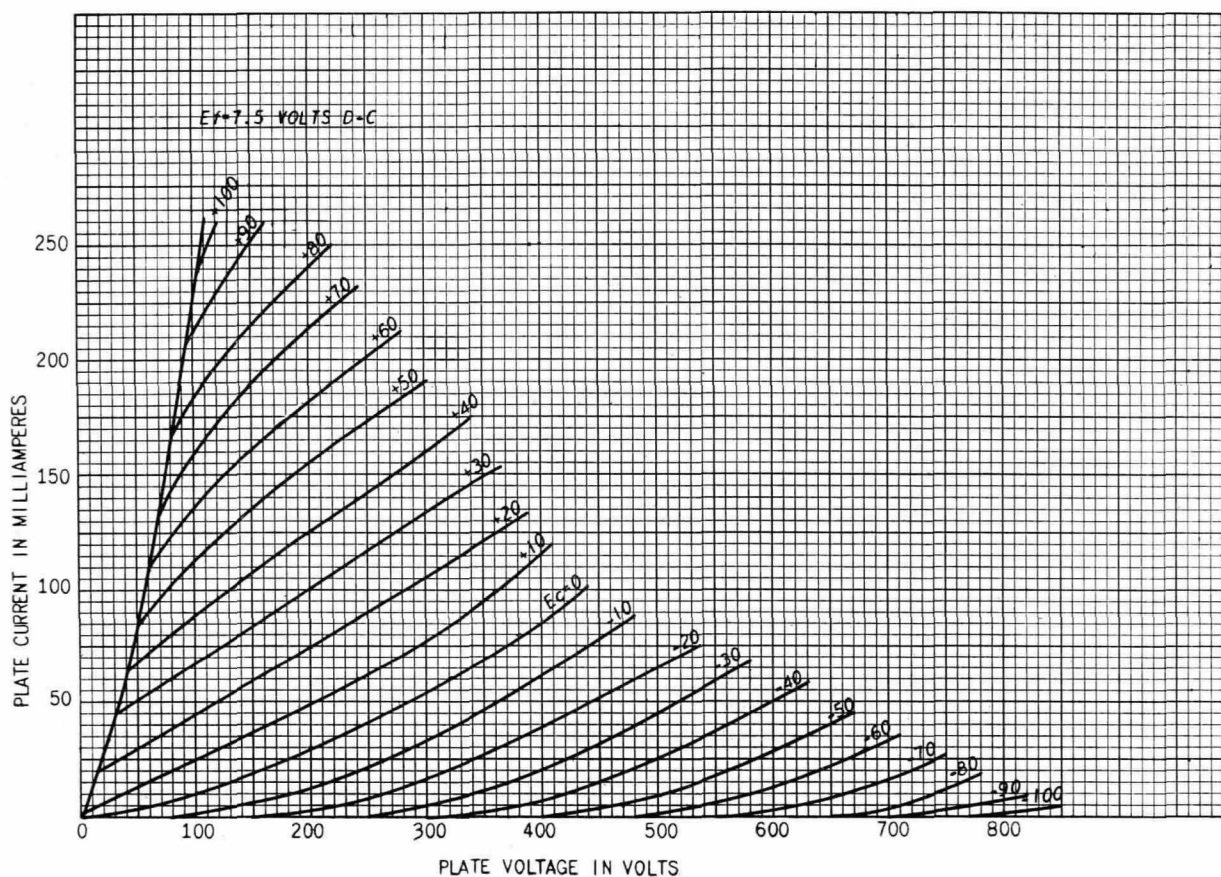
APPLICATION NOTES

The normal value of grid leak when the tube is used as an oscillator or radio-frequency amplifier (Class C) is in the neighborhood of 10,000 ohms, although this may be replaced by a suitable fixed bias. If self-bias is used the cathode resistor should be approximately 2000 ohms.

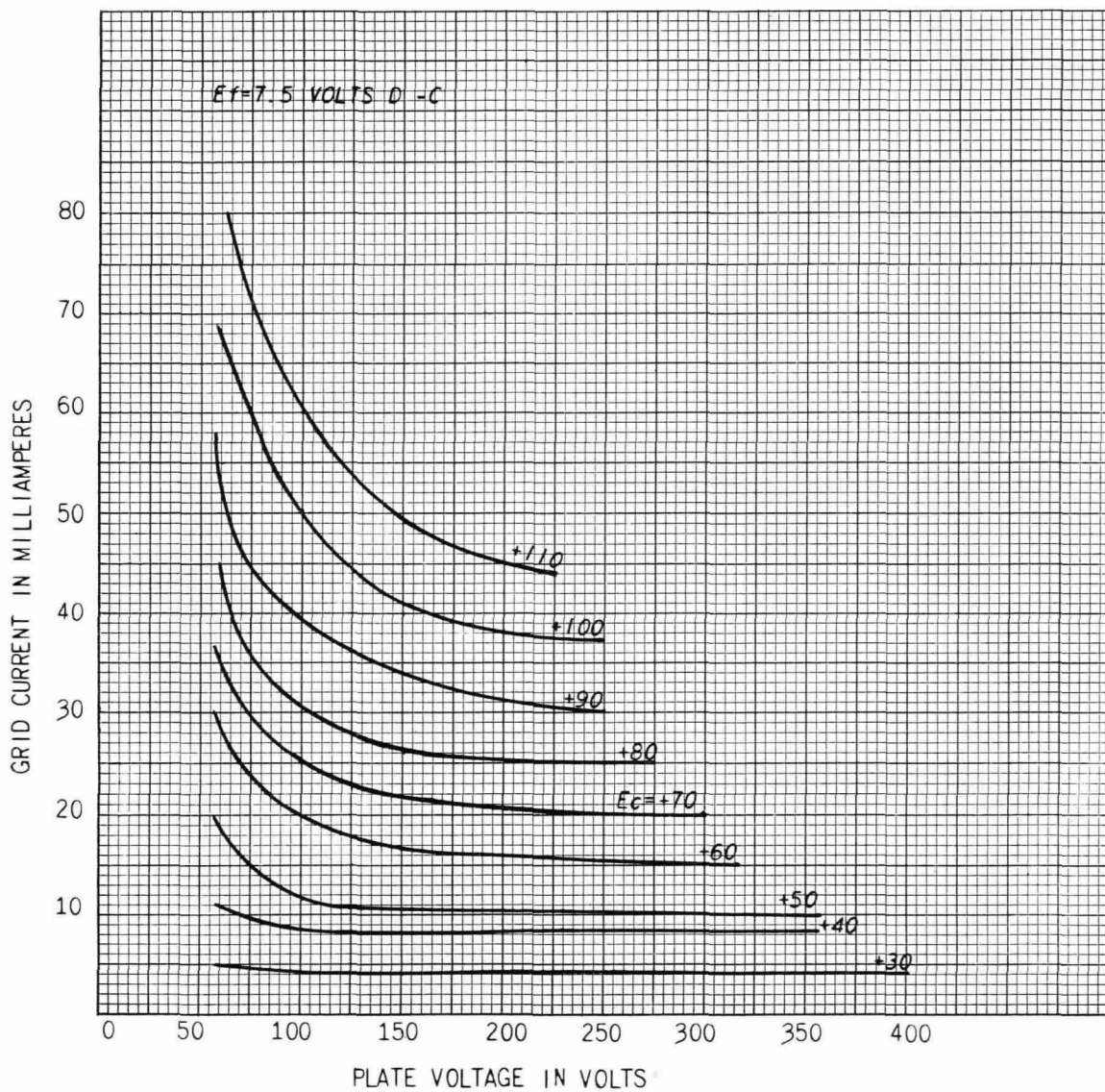
The maximum ratings apply only at frequencies below 60 megacycles. For operation at higher frequencies adequate ventilation and normal ambient temperatures must be maintained, and the plate voltage must be reduced as indicated.

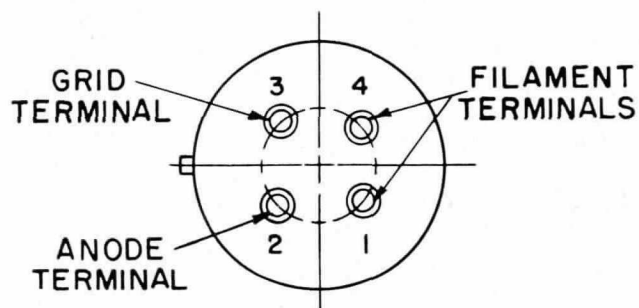
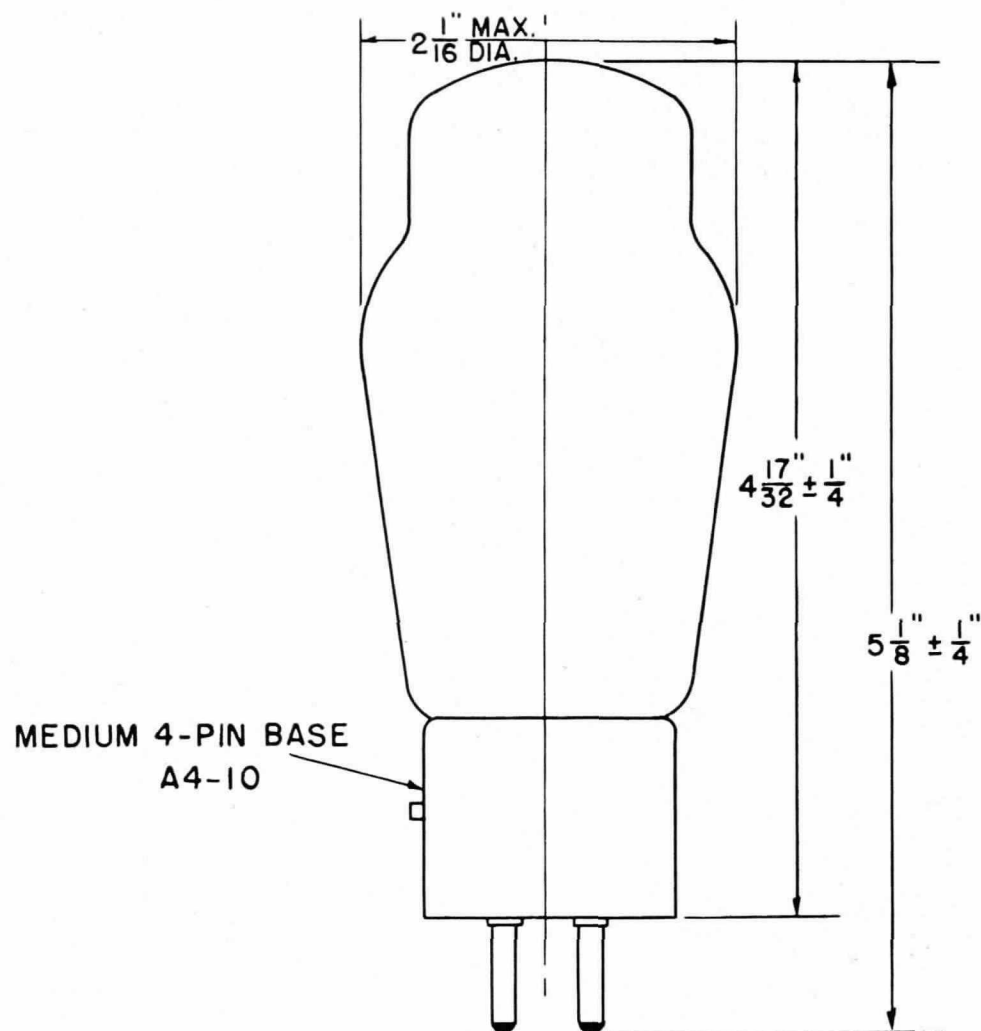
Frequency	60	75	120 megacycles
Percentage of maximum rated plate voltage and plate input			
Class B	100	93	78 per cent
Class C, plate-modulated	100	80	50 per cent
Class C, telegraphy	100	80	50 per cent

GL-801-A AVERAGE PLATE CHARACTERISTICS



GL-801-A TYPICAL CHARACTERISTICS





GL-801-A OUTLINE

Electronics Department
GENERAL ELECTRIC
Schenectady, N. Y.