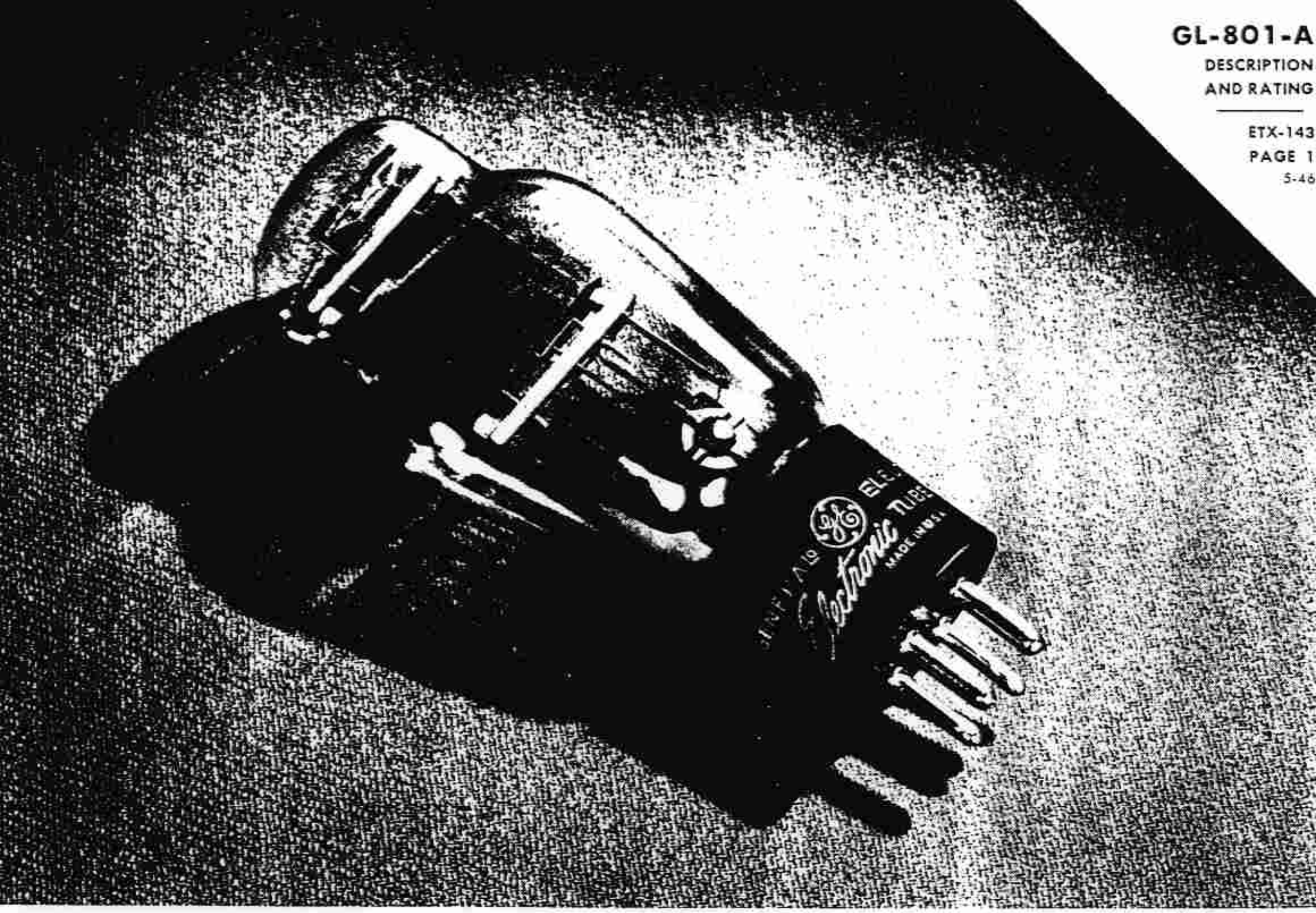


TRIODE

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_c = .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 A_1 AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR

	Typical Operation		Maximum Ratings	
D-c plate voltage	425	500	600	600 volts
D-c grid voltage§	−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△	−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△ ◆	−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			13.5watts
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△ π	−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 by-passed 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.

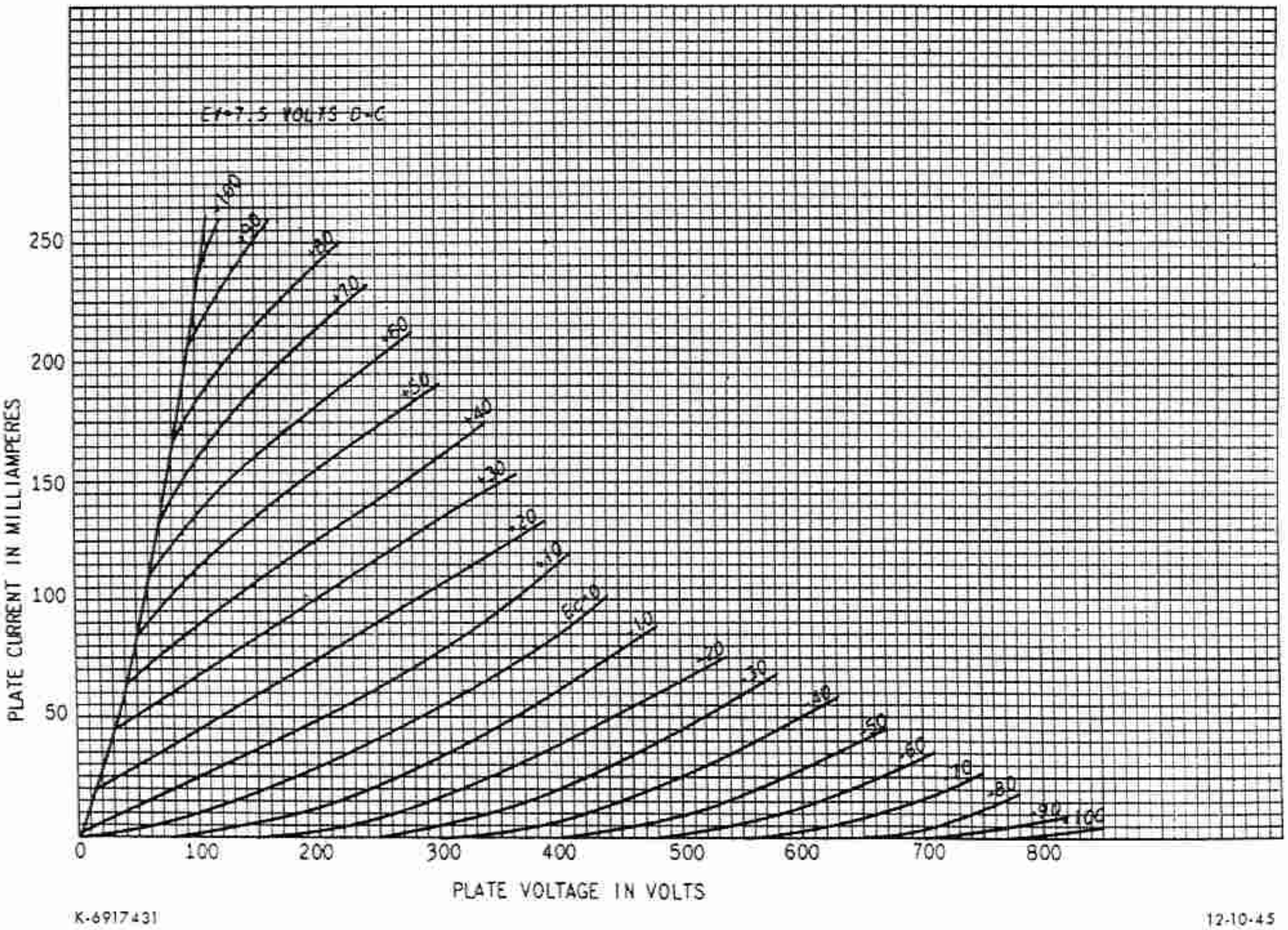
APPLICATION NOTES

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



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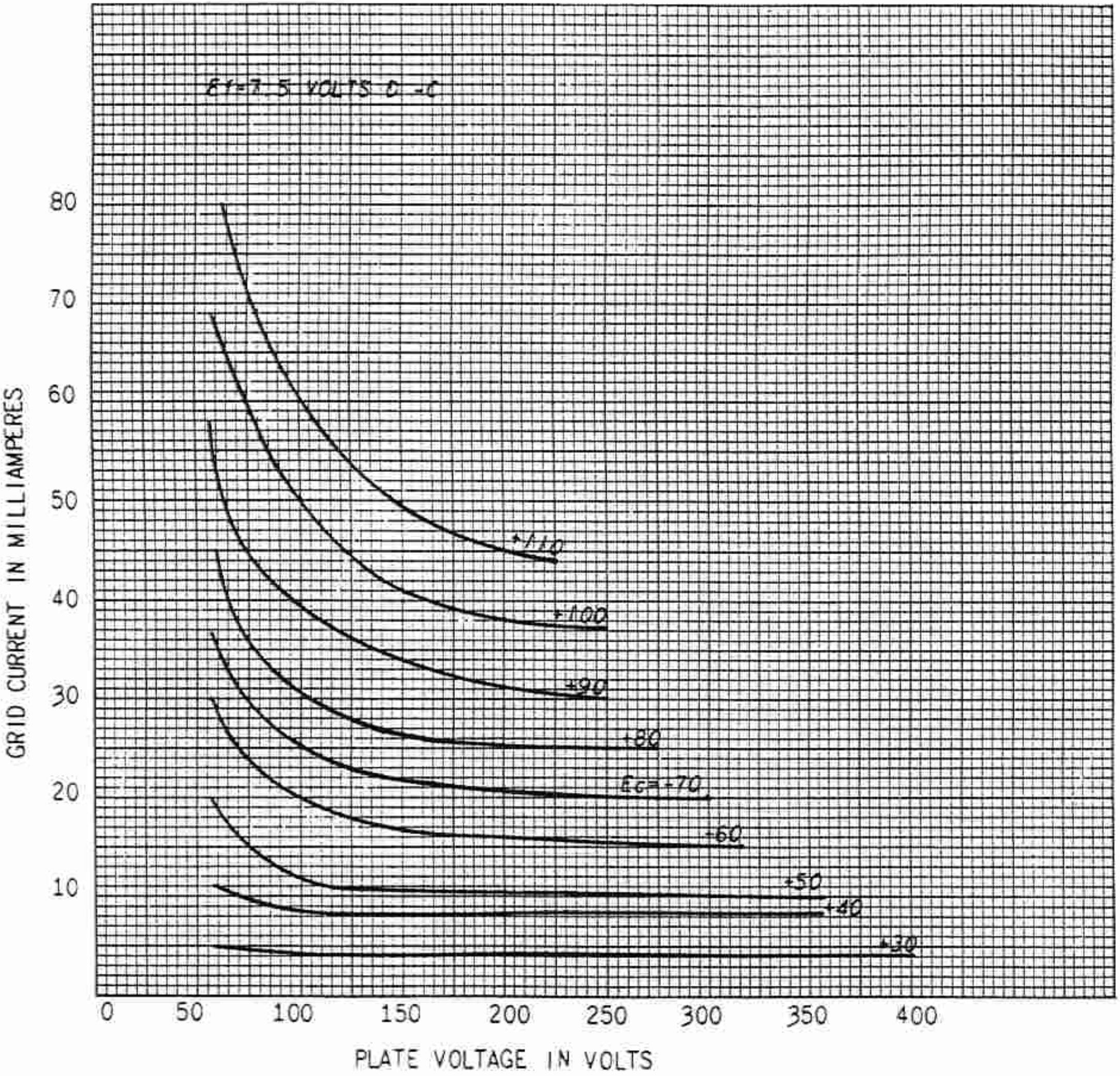
GL-801-A TYPICAL CHARACTERISTICS



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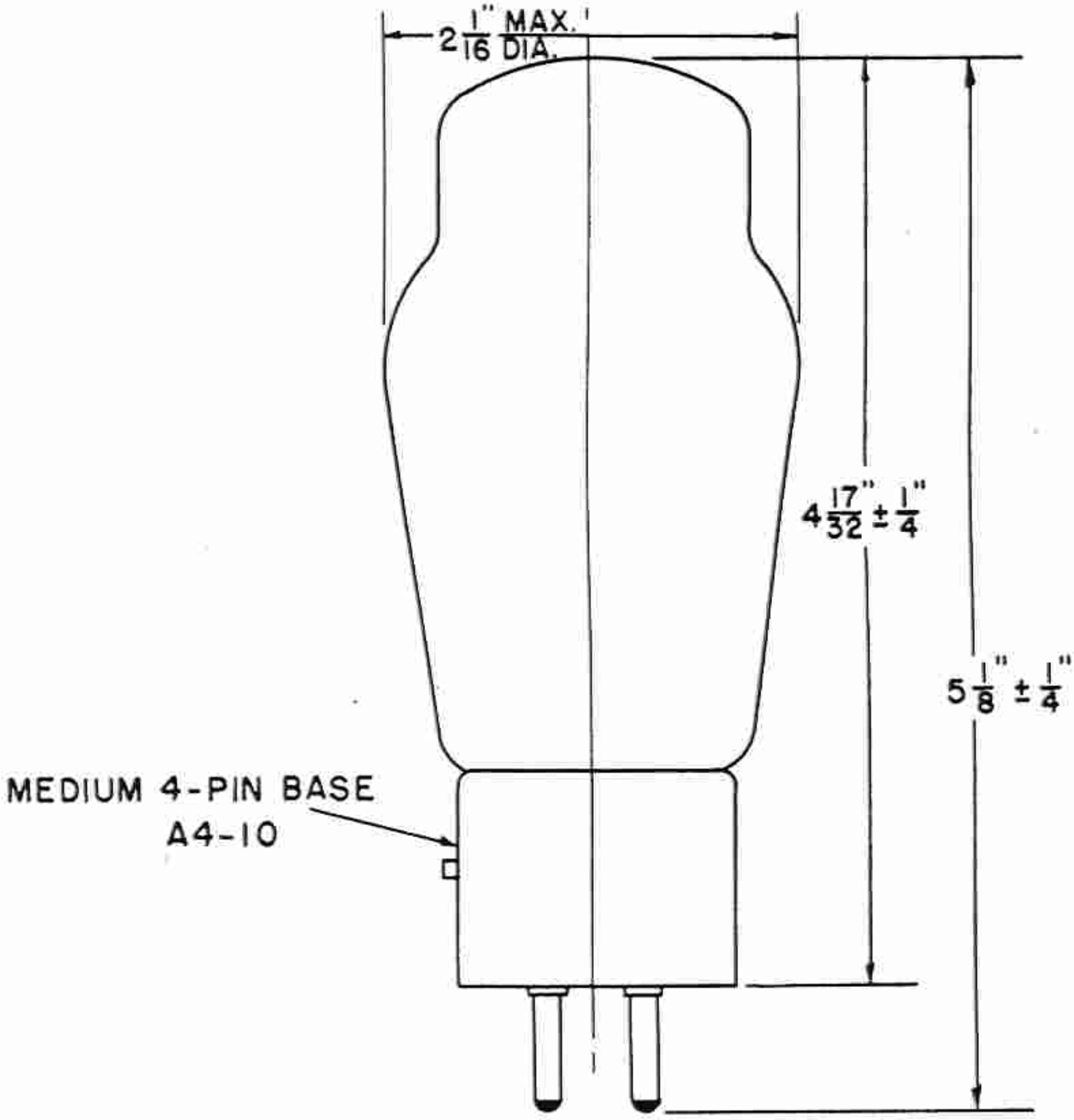

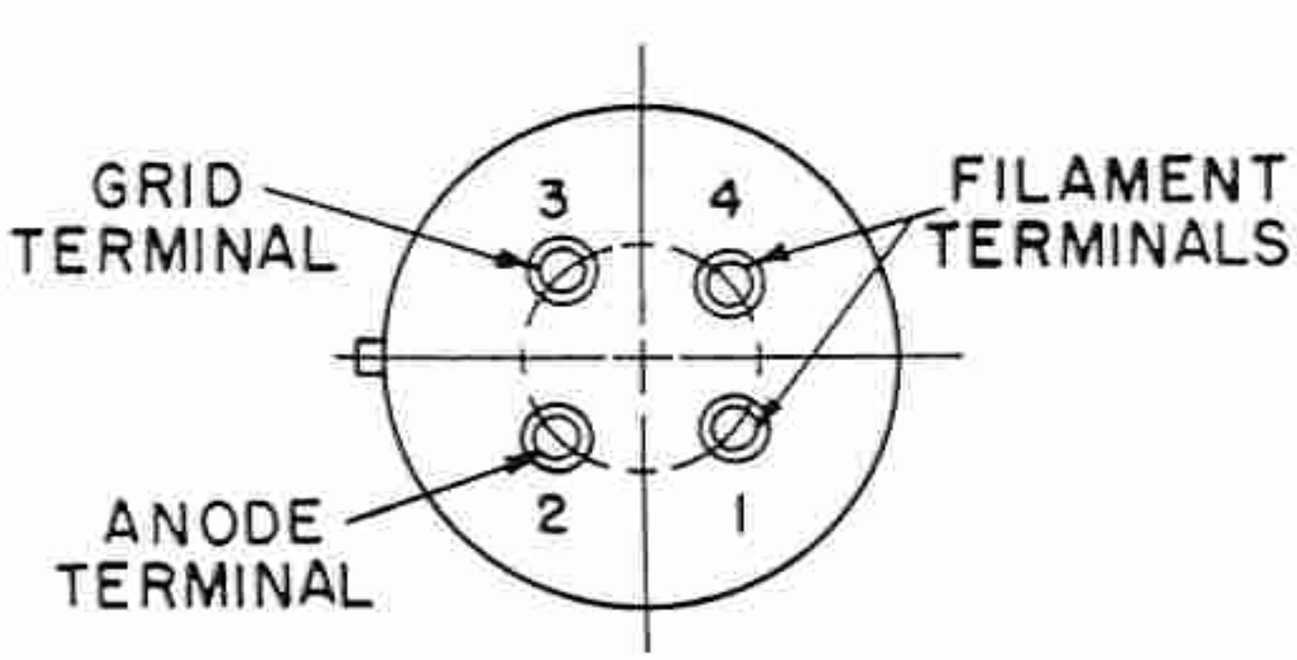

GL-801-A OUTLINE

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