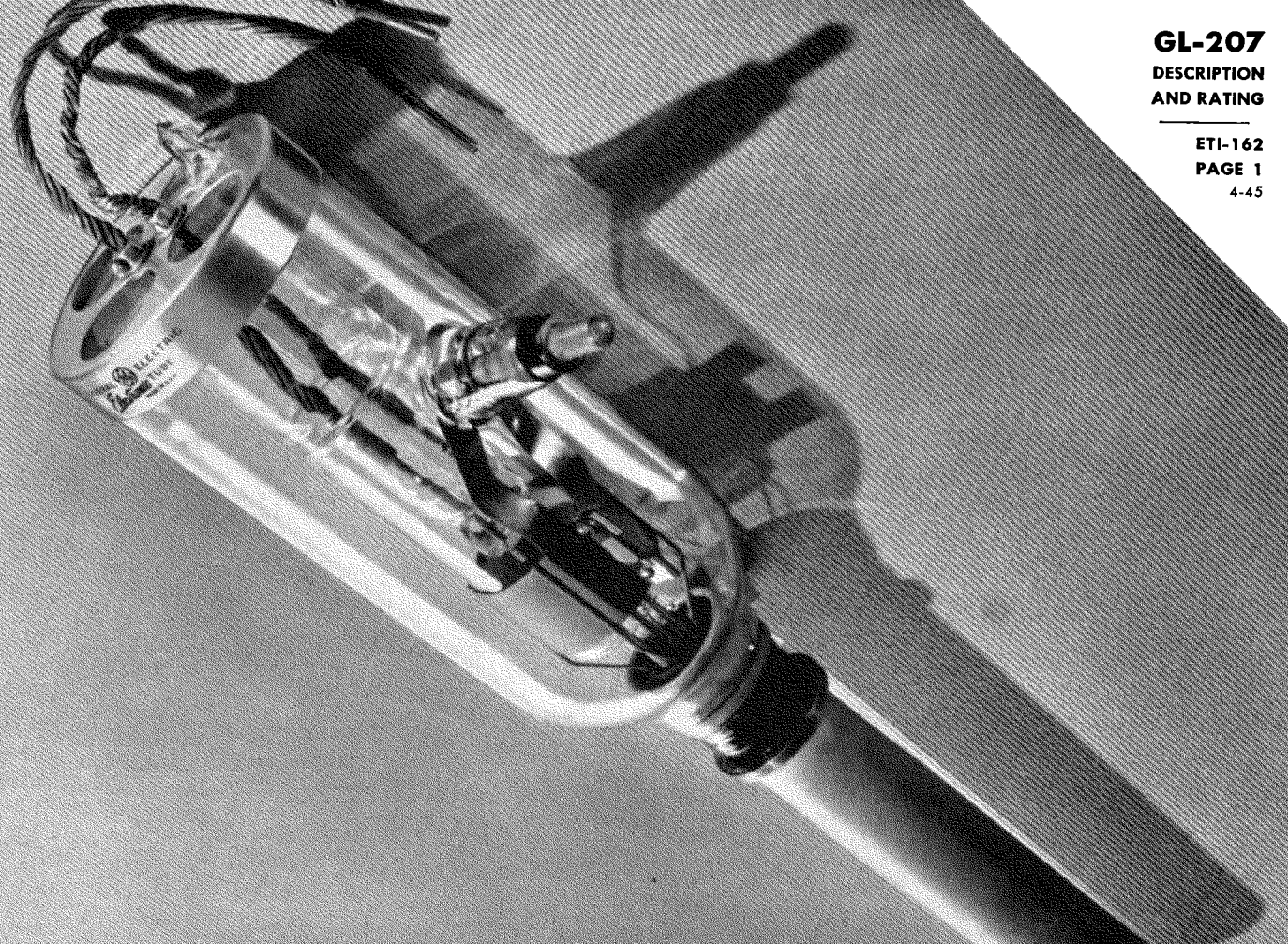




PLIOTRON

DESCRIPTION

The GL-207 is a three-electrode vacuum tube designed for use as a radio-frequency power amplifier, oscillator, or Class B modulator. The plate is water-cooled and is capable of dissipating 6.6 to 10 kilowatts, depending on the service in which the tube is used.

TECHNICAL INFORMATION

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

GENERAL CHARACTERISTICS

Electrical

Filament.....	tungsten
Voltage.....	22 volts
Current.....	51 amperes
Average characteristics, $E_b = 10,000$, $I_b = 750$ ma, $E_f = 22$	
Grid voltage.....	-310 volts
Amplification factor.....	20
Grid-plate transconductance, $I_b = 750$ ma.....	5700 micromhos
Direct interelectrode capacitances	
Grid-plate.....	27 micromicrofarads
Input.....	18 micromicrofarads
Output.....	2.0 micromicrofarads
Frequency for maximum tarings.....	1.5 megacycles


Electronic
TUBE

GENERAL  ELECTRIC

TECHNICAL INFORMATION (CONT'D)

Mechanical

Type of cooling	water
Water flow	3-8 gallons per minute
Maximum outlet temperature	70 centigrade
Base	3906
Gasket	Cat. No. 5182028P3
Maximum over-all dimensions	
Length	20 $\frac{1}{4}$ inches
Radius	6 $\frac{1}{2}$ inches
Net weight, approximate	3 pounds
Shipping weight, approximate	10 pounds
Mounting position	vertical, anode down

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

CLASS B AUDIO-FREQUENCY POWER AMPLIFIER, TWO TUBES

	Typical Operation			Maximum Ratings
D-c plate voltage	6000	10000	12500	15000 volts
Maximum signal plate current, per tube*				2.0 amperes
D-c maximum signal plate input, per tube*				20 kilowatts
Plate dissipation, per tube*				7.5 kilowatts
D-c grid voltage	-210	-410	-575	volts
Peak a-f grid input voltage	1520	2140	2300	volts
Zero signal plate current	0.5	0.5	0.4	ampere
Maximum signal plate current	2.5	3.2	2.8	amperes
Maximum signal driving power, approx.	190	380	400	watts
Effective load, plate-to-plate	4200	6400	10000	ohms
Maximum signal plate power output	8	20	22.5	kilowatts

* Averaged over any audio-frequency cycle.

CLASS B RADIO-FREQUENCY POWER AMPLIFIER

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

D-c plate voltage	6000	10000	14000	15000 volts
D-c grid voltage	-225	-440	-650	volts
D-c plate current	0.62	0.93	1.0	1.0 ampere
Plate input				15 kilowatts
Plate dissipation				10 kilowatts
Peak r-f grid input voltage	400	600	730	volts
Driving power #, approx.	72	16	0	watts
Plate power output	1	2.5	4	kilowatts

At crest of audio-frequency cycle.

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	6000	8000	10000	10000 volts
D-c grid voltage	-1200	-1600	-2000	-3000 volts
D-c plate current	0.76	0.78	0.75	1.0 ampere
D-c grid current, approximate	0.15	0.14	0.07	0.20 ampere
Plate input				10 kilowatts
Plate dissipation				6.6 kilowatts
Peak r-f grid input voltage, approx.	1860	2300	2660	volts
Driving power, approx.	280	325	185	watts
Plate power output	3.5	5	6	kilowatts

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Key-down conditions per tube without modulation.##

D-c plate voltage	8000	10000	12000	15000 volts
D-c grid voltage	-1000	-1200	-1600	-3000 volts
D-c plate current	1.1	1.33	1.67	2.0 amperes
D-c grid current, approx.	0.17	0.12	0.09	0.2 ampere
Plate input				30 kilowatts
Plate dissipation				10 kilowatts
Peak r-f grid input voltage	1730	2050	2650	volts
Driving power, approx.	295	245	235	watts
Plate power output	6.5	10	15	kilowatts

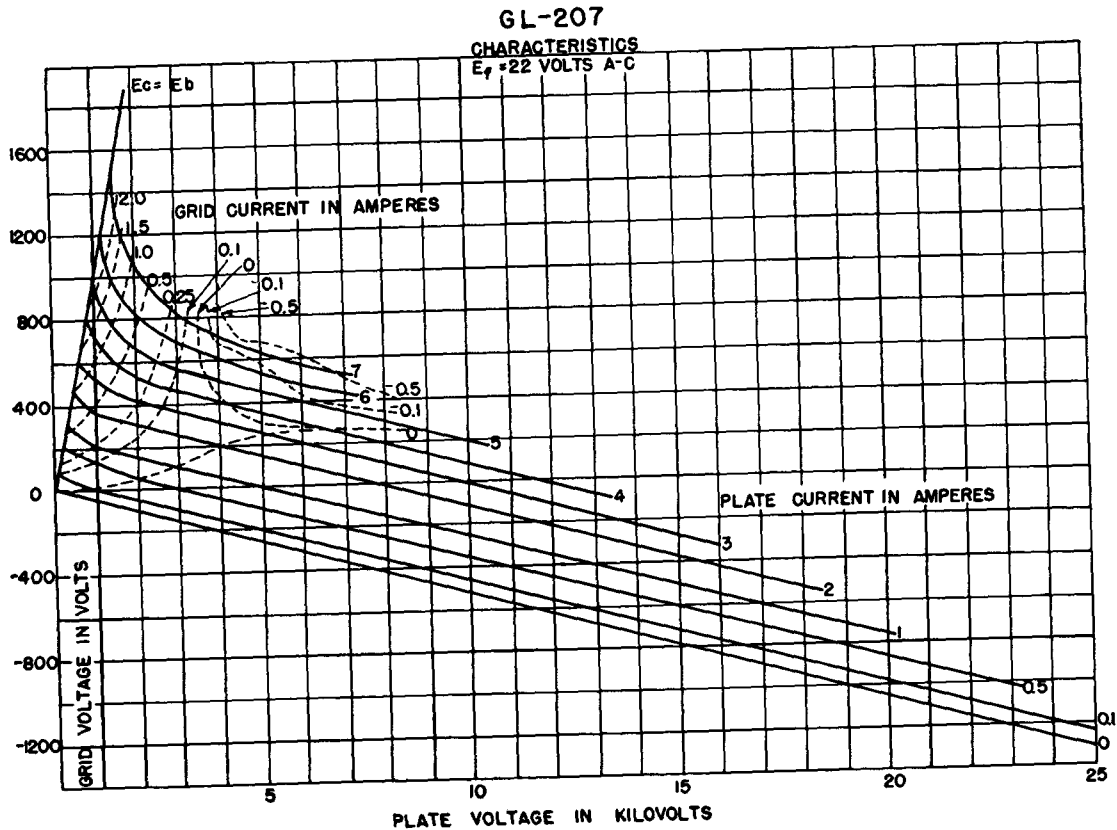
Modulation, essentially negative, may be used if the positive peak of the audio-frequency envelope does not exceed the 115 per cent of the carrier conditions.

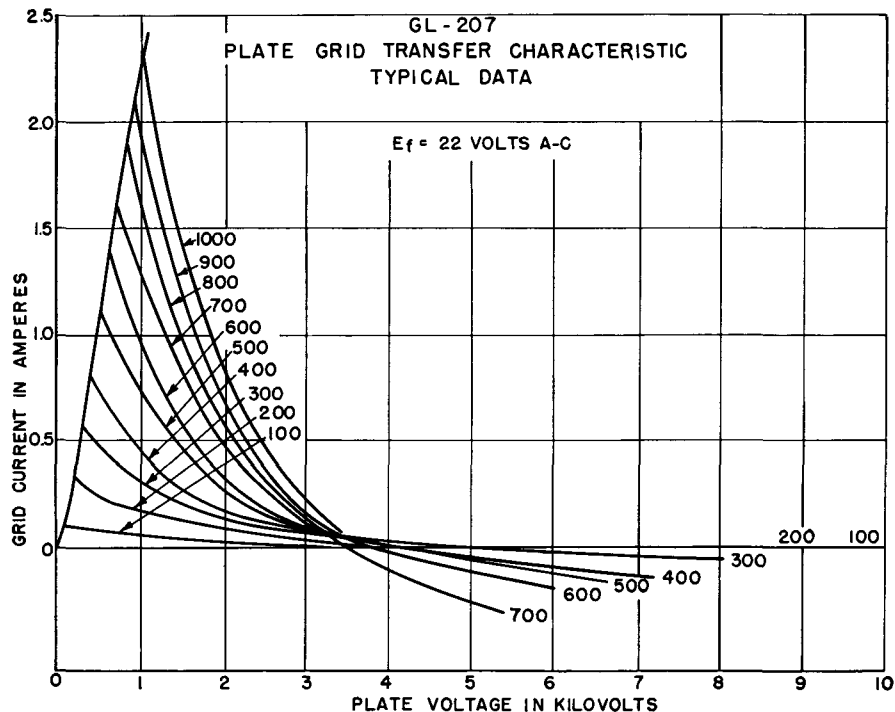
APPLICATION NOTES

The GL-207 can be operated at frequencies as high as 1.5 megacycles. The tube may be operated at higher frequencies provided the maximum values of plate voltage and power input are reduced as the frequency is raised (other maximum ratings are the same as shown under

TECHNICAL INFORMATION). The tabulation below shows the highest percentage of maximum plate voltage and power input that can be used up to 20 megacycles for the various classes of service. Special attention should be given to adequate ventilation of the bulb at these frequencies.

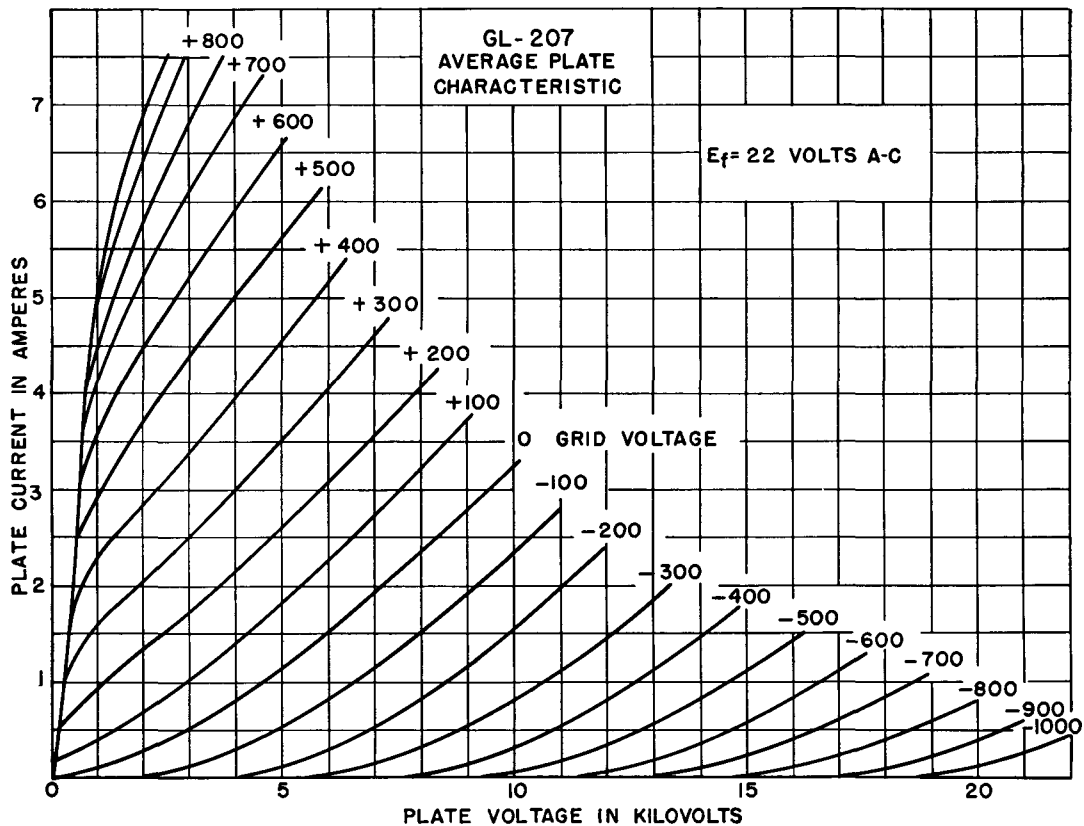
Frequency	1.5	7.5	20 megacycles			
Percentage of maximum rated plate voltage and plate input						
Class B	100	85	76 per cent			
Class C plate modulated	100	75	50 per cent			
Class C unmodulated	100	75	50 per cent			
Plate series protective resistors						
Series resistor	25	50	200	250	275	300 ohms
Maximum power output of rectifier...	16	40	100	250	640	1600 kilowatts





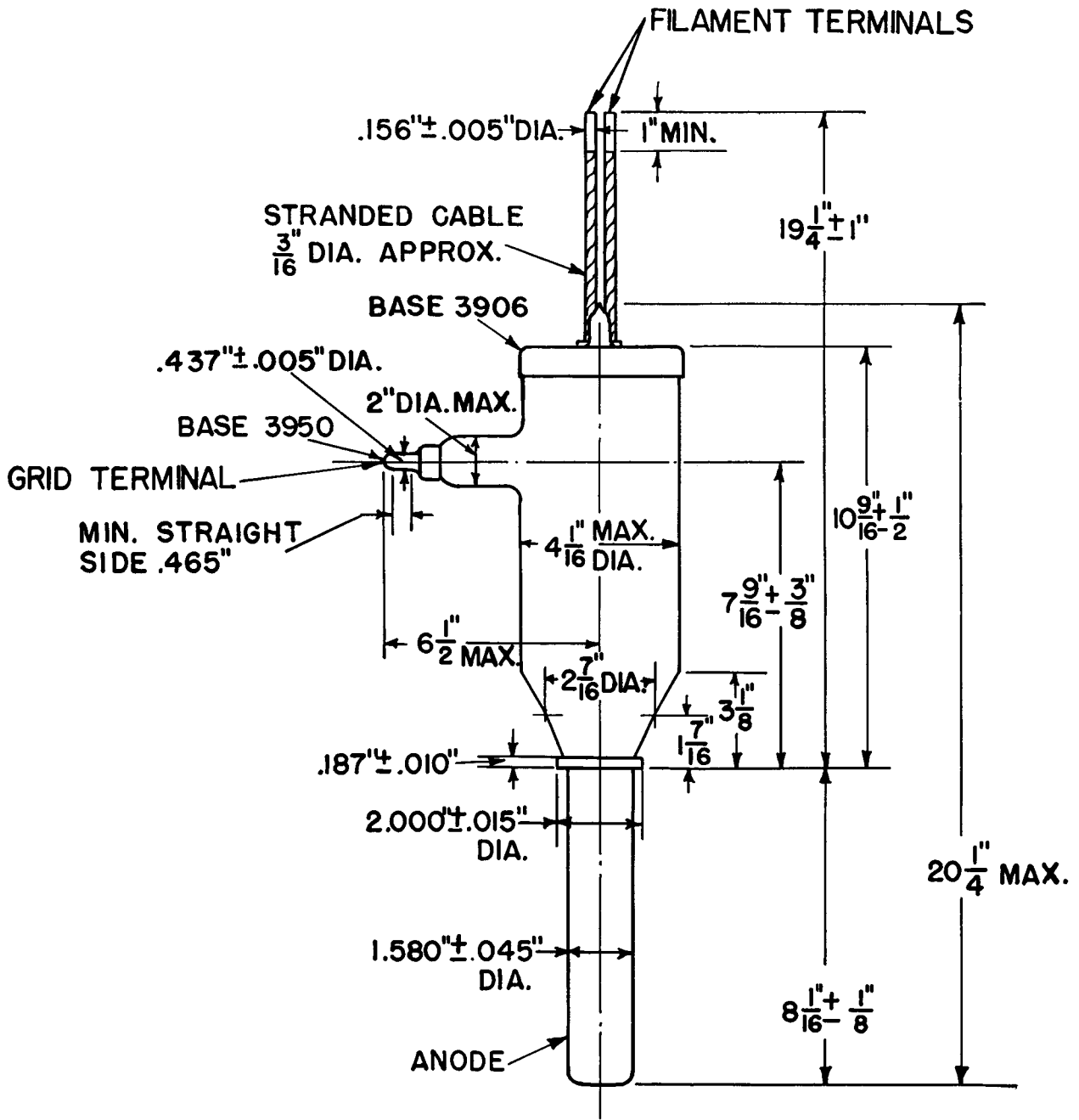
K-6966465

9-26-44



K-6966463

9-26-44



OUTLINE
GL-207 PIOTRON

