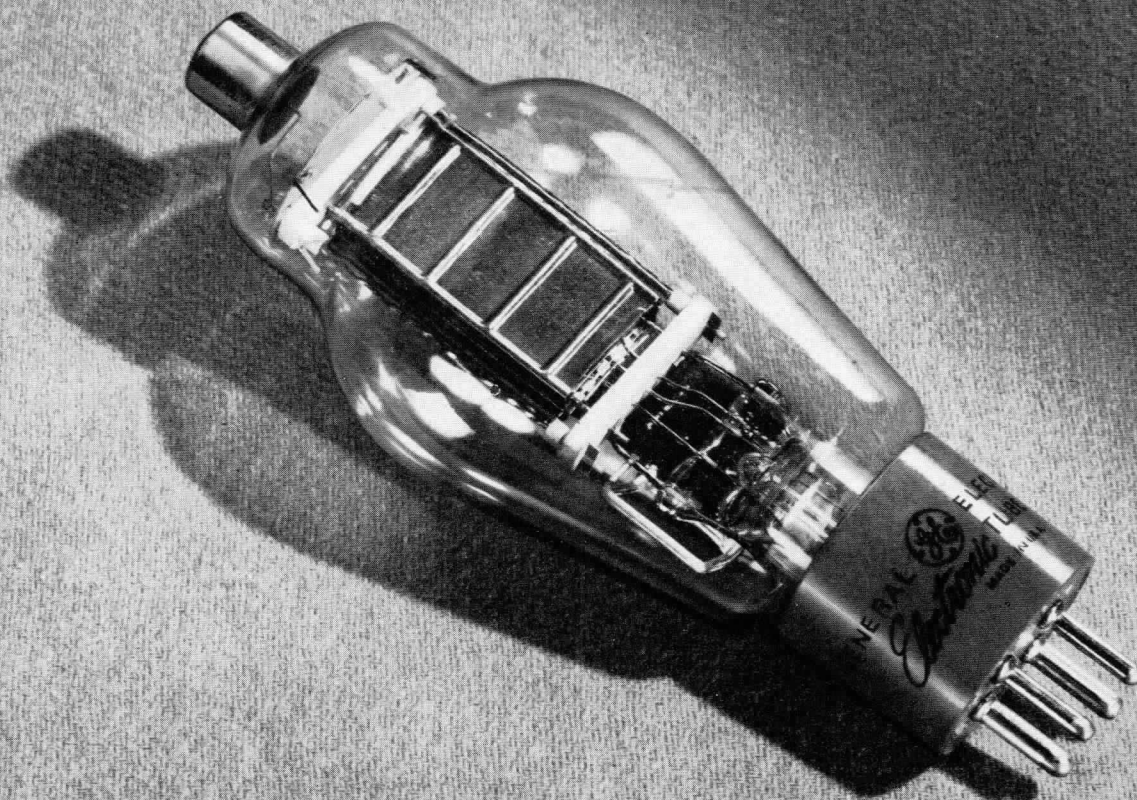




TRIODE

DESCRIPTION

The GL-1623 is a three-electrode transmitting tube for use as an oscillator, radio-frequency amplifier, and Class B modulator. This tube is particularly useful as a self-excited oscillator in circuits

which are subject to unusual conditions of wide plate-load variations because it is not critical to changes in grid excitation voltage.

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.....	6.3 volts
Filament current.....	2.5 amperes
Amplification factor.....	20
Direct interelectrode capacitances:	
Grid-plate.....	6.7 micromicrofarads
Grid-filament.....	5.2 micromicrofarads
Plate-filament.....	0.9 micromicrofarad
Mechanical	
Mounting position—vertical, base down;	
Horizontal, plane of electrodes vertical	
Net weight, approximate.....	3 ounces
Shipping weight, approximate.....	7 pounds


Electronic
TUBE

GENERAL  ELECTRIC

Supersedes ETX-195 dated 5-46

TECHNICAL INFORMATION (CONT'D)

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

CLASS B AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR

Maximum ratings, absolute values	CCS	ICAS
D-c plate voltage	750 max	1000 max volts
Maximum signal d-c plate current, per tube†	100 max	100 max milliamperes
Maximum signal plate input, per tube†	75 max	100 max watts
Plate dissipation, per tube†	25 max	30 max watts

Typical operation

Unless otherwise specified, values are for two tubes

	CCS	ICAS
D-c plate voltage	500	750
D-c grid voltage*	-10	-25
Peak a-f grid-to-grid voltage	170	200
Zero signal d-c plate current	40	35
Maximum signal d-c plate current	200	200
Load resistance, per tube	1300	2100
Effective load resistance, plate to plate	5200	8400
Maximum signal driving power, approximate	3.5	4
Maximum signal power output, approximate	60	100

CLASS B RADIO-FREQUENCY POWER AMPLIFIER

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

Maximum ratings, absolute values	CCS	ICAS
D-c plate voltage	750 max	1000 max volts
D-c plate current	50 max	50 max milliamperes
Plate input	37.5 max	45 max watts
Plate dissipation	25 max	30 max watts

Typical operation

	CCS	ICAS
D-c plate voltage	500	750
D-c grid voltage*	-25	-40
D-c plate current	50	50
D-c grid current, approximate	2	1.5
Peak r-f grid voltage	50	60
Driving power, approximate	1.8	1.4
Power output, approximate	7.5	12.5

CLASS C TELEPHONY PLATE-MODULATED RADIO-FREQUENCY POWER AMPLIFIER

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

Maximum ratings, absolute values	CCS	ICAS
D-c plate voltage	600 max	750 max volts
D-c grid voltage	-200 max	-200 max volts
D-c plate current	83 max	100 max milliamperes
D-c grid current	25 max	25 max milliamperes
Plate input	50 max	75 max watts
Plate dissipation	17.5 max	25 max watts

Typical operation

	CCS	ICAS
D-c plate voltage	500	600
D-c grid voltage§*	-125	-125
	5000	5000
D-c plate current	83	83
D-c grid current, approximate	25	25
Peak r-f grid voltage	200	200
Driving power, approximate	5	5
Power output, approximate	30	38

TECHNICAL INFORMATION (CONT'D)

CLASS C TELEGRAPHY RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Key-down conditions per tube without modulation ¶

Maximum ratings, absolute values	CCS		ICAS	
D-c plate voltage	750	max	1000	max volts
D-c grid voltage	-200	max	-200	max volts
D-c plate current	100	max	100	max milliamperes
D-c grid current	25	max	25	max milliamperes
Plate input	75	max	100	max watts
Plate dissipation	25	max	30	max watts
Typical operation	CCS		ICAS	
D-c plate voltage	500	750	1000	volts
D-c grid voltage* △				
From a grid resistor of	4100	5000	4500	ohms
From a cathode resistor of	600	730	750	ohms
From a fixed supply of	-70	-85	-90	volts
D-c plate current	100	100	100	milliamperes
D-c grid current, approximate	17	17	20	milliamperes
Peak r-f grid voltage	140	160	172	volts
Driving power, approximate	2.2	2.5	3.1	watts
Power output, approximate	33	55	75	watts

* With a-c filament supply.

¶ At crest of audio-frequency cycle with modulation factor of 1.0.

§ Obtained by grid resistor of value shown or by partial self-bias methods.

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

△ When the 1623 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 plate voltage of 1000 volts, a fixed bias of at least -35 volts should be used.

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

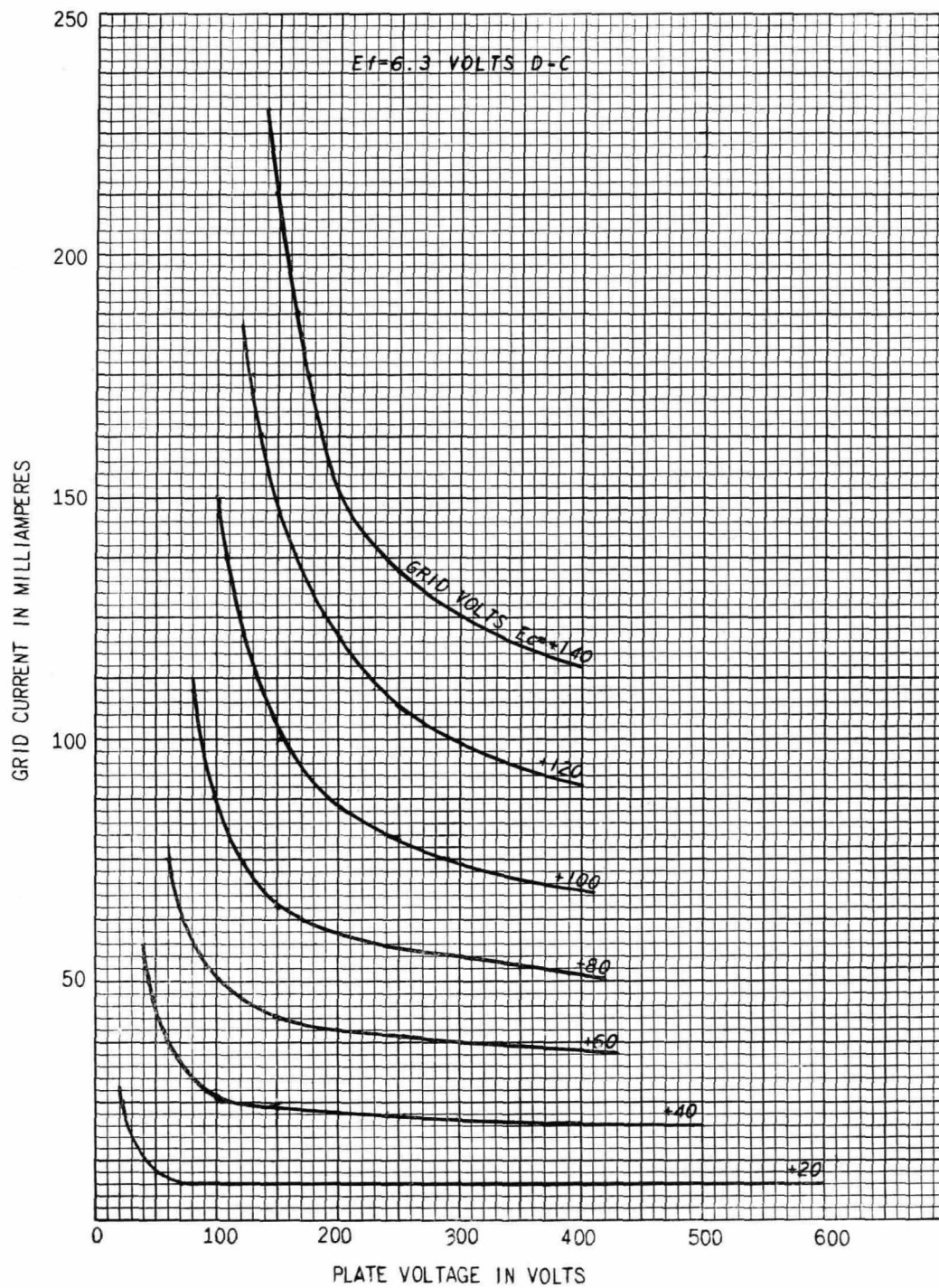
APPLICATION NOTES

Maximum ratings apply up to 60 megacycles. The tube may be operated at higher frequencies provided the maximum values of plate voltage and power input are reduced according to the tabulation below (other maxi-

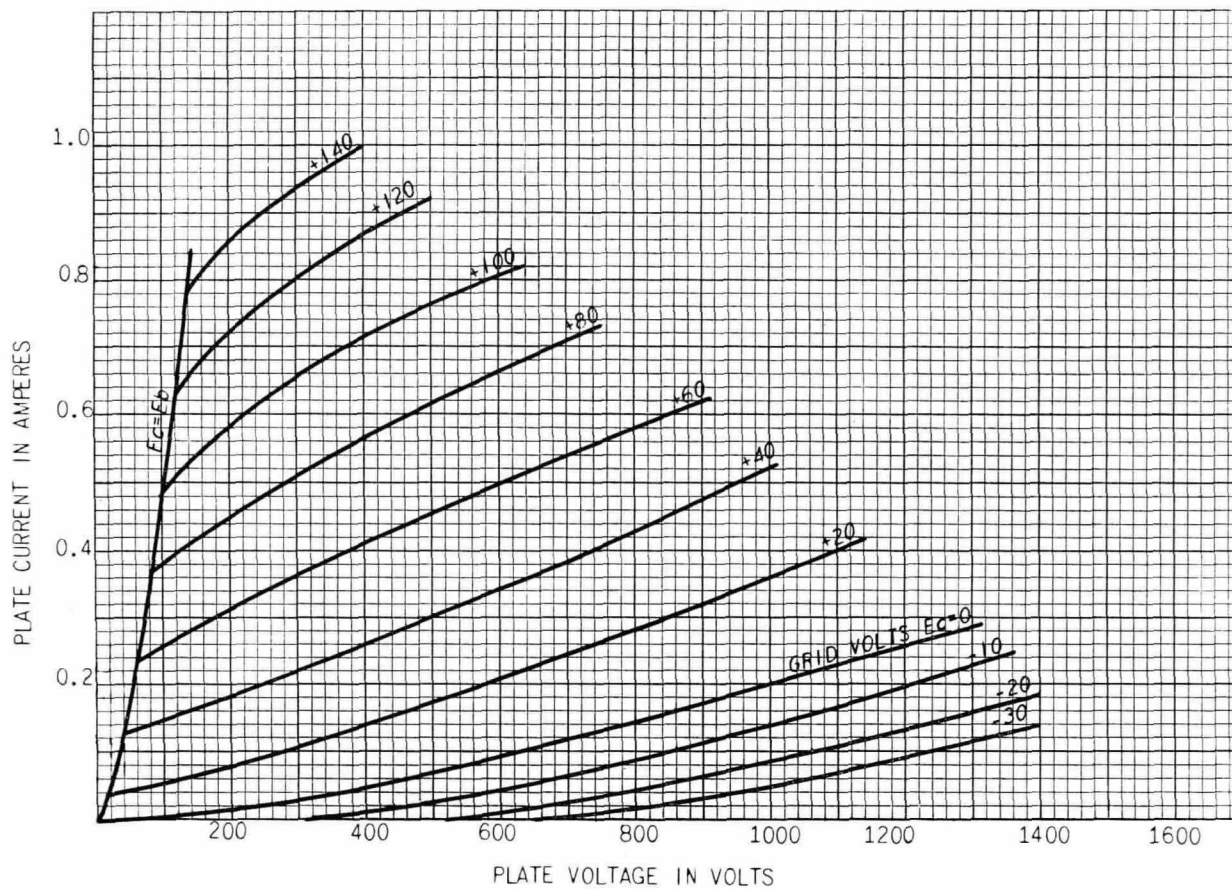
mum ratings are the same as shown above). Special attention should be given to adequate ventilation of the bulb at these frequencies.

Frequency	60	70	100	megacycles
Percentage of maximum rated plate voltage and plate input				
Class B	100	93	80	per cent
Class C plate modulated	100	88	60	per cent
Class C unmodulated	100	88	60	per cent

GL-1623 TYPICAL CHARACTERISTICS



GL-1623 AVERAGE PLATE CHARACTERISTICS

 $E_f = 6.3$ VOLTS D-C

K-9186066

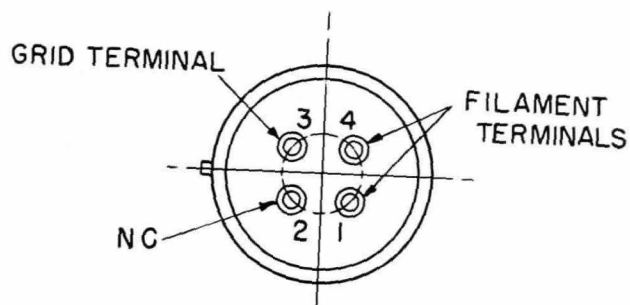
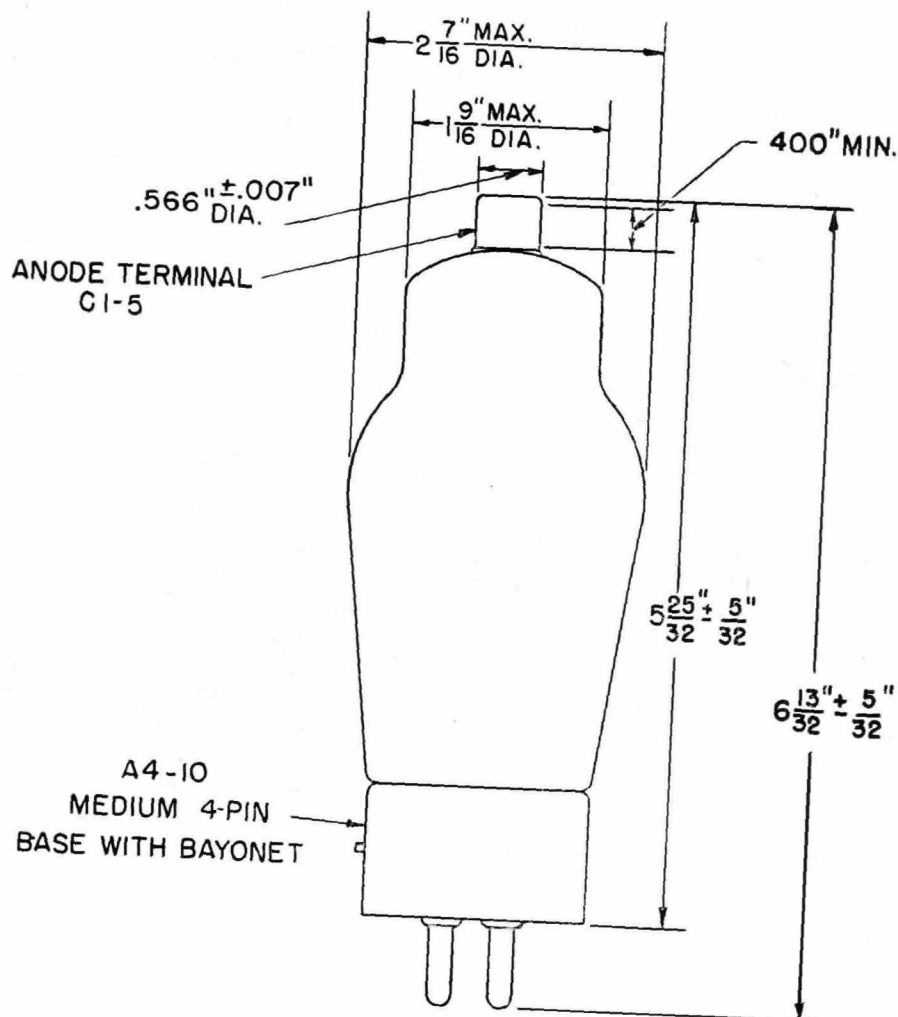
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GL-1623

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GL-1623 OUTLINE

K-9186112

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Electronics Department
GENERAL ELECTRIC
Schenectady, N. Y.