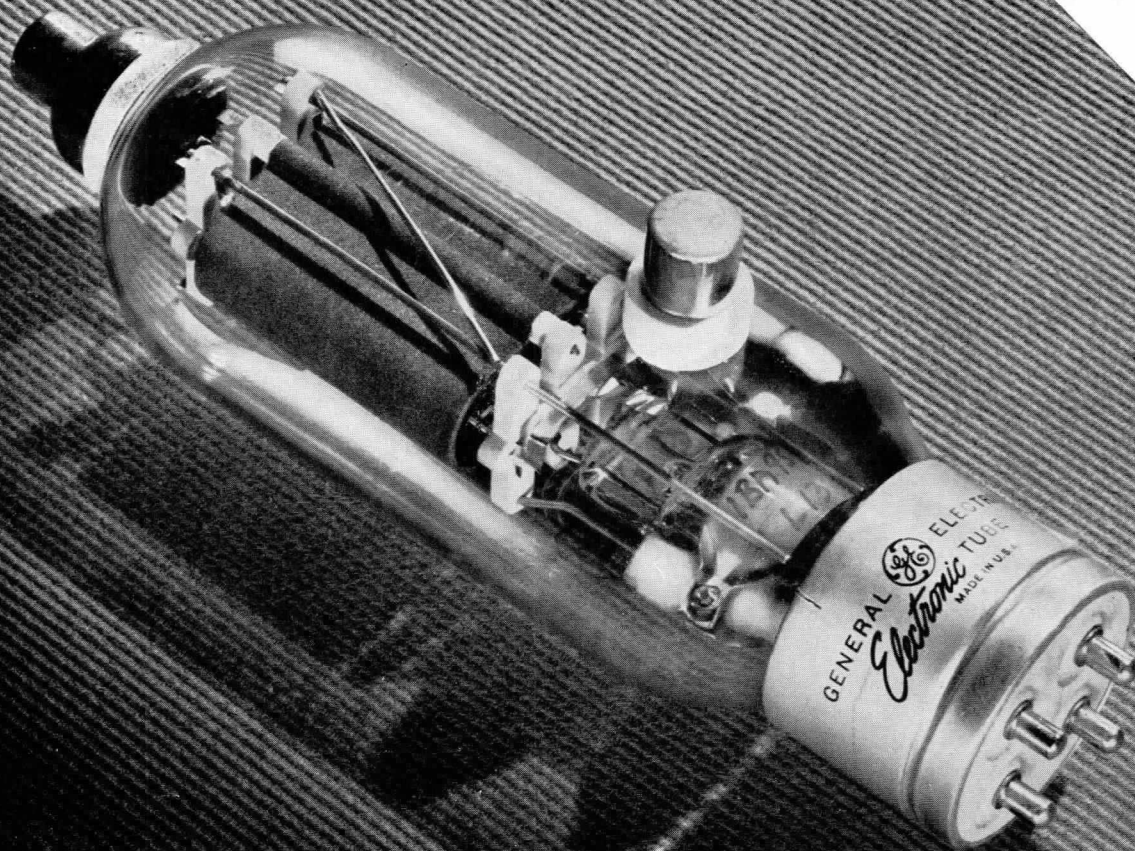




PLIOTRON

DESCRIPTION

The GL-810 is a three-electrode high-mu tube with a typical power output of 575 watts (ICAS) for Class C telegraph service. Because of its high perveance the tube can be operated at high plate efficiency with low driving power and relatively low plate voltage. The heavy duty filament, shielded at each end, conserves input power by

eliminating bulb bombardment and stray electrons. The plate and grid leads are brought out to terminals at the top and side of the bulb, respectively—a design which provides very short internal leads, low internal lead inductance, and permits compact high-frequency circuits. Maximum ratings apply up to 30 megacycles.

▲ TECHNICAL INFORMATION

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

GENERAL

Electrical Data

Filament voltage.....	10 volts
Filament current.....	4.5 amperes
Amplification factor.....	36
Interelectrode capacitances	
Grid-plate.....	4.8 uuf
Grid-filament.....	8.7 uuf
Plate-filament.....	12 uuf

▲ Ratings completely revised.

GENERAL  ELECTRIC

Supersedes ETI-166 dated 4-45

TECHNICAL INFORMATION (CONT'D)

Mechanical Data

Mounting position.....Vertical, base down; or horizontal, pins 1 and 2 in vertical plane
 Net weight, approximate.....8 ounces

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS B

Maximum Ratings, Absolute Values

	CCS*	ICAS†
D-c plate voltage.....	2500 max	2750 max volts
Maximum signal d-c plate current†.....	250 max	250 max milliamperes
Maximum signal plate input†.....	425 max	510 max watts
Plate dissipation†.....	125 max	175 max watts

Typical Operation

Unless otherwise specified, values are for two tubes

	CCS*	ICAS†
D-c plate voltage.....	2000	2250 volts
D-c grid voltage**.....	-50	-60 volts
Peak A-F grid-to-grid voltage.....	345	380 volts
Zero signal d-c plate current.....	60	70 milliamperes
Maximum signal d-c plate current.....	420	450 milliamperes
Effective load resistance, plate to plate.....	11000	11600 ohms
Maximum signal driving power, approximate.....	10	13 watts
Maximum signal power output, approximate.....	590	725 watts

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

**For a-c filament supply.

RADIO-FREQUENCY POWER AMPLIFIER—CLASS B

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

Maximum Ratings, Absolute Values

	CCS*	ICAS†
D-c plate voltage.....	2000 max	2500 max volts
D-c plate current.....	185 max	185 max milliamperes
Plate input.....	185 max	225 max watts
Plate dissipation.....	125 max	175 max watts

Typical Operation

	CCS*	ICAS†
D-c plate voltage.....	1500	2000
D-c grid voltage**.....	-50	-65
Peak R-F grid voltage.....	110	100
D-c plate current.....	115	93
D-c grid current, approximate.....	2	2
Driving power, approximate††.....	6	4
Power output, approximate.....	60	60

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

**For a-c filament supply.

TECHNICAL INFORMATION (CONT'D)

PLATE-MODULATED RADIO-FREQUENCY POWER AMPLIFIER—CLASS C TELEPHONY

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

Maximum Ratings, Absolute Values

	CCS*	ICAS†	
D-c plate voltage.....	1600 max	2000 max	volts
D-c grid voltage.....	—500 max	—500 max	volts
D-c plate current.....	210 max	250 max	milliamperes
D-c grid current.....	70 max	75 max	milliamperes
Plate input.....	335 max	500 max	watts
Plate dissipation.....	85 max	125 max	watts

Typical Operation

	CCS*	ICAS†	
Dc- plate voltage.....	1250	1600	2000 volts
D-c grid voltage			
From a fixed supply of.....	—200	—200	—350 volts
From a grid resistor of.....	4000	4000	5000 ohms
Peak R-F grid voltage.....	370	370	550 volts
D-c plate current.....	210	210	250 milliamperes
D-c grid current, approximate.....	50	50	70 milliamperes
Driving power, approximate.....	17	17	35 watts
Power output, approximate.....	180	250	380 watts

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

Key-down conditions per tube without modulation¶

Maximum Ratings, Absolute Values

	CCS*	ICAS†	
D-c plate voltage.....	2000 max	2500 max	volts
D-c grid voltage.....	—500 max	—500 max	volts
D-c plate current.....	250 max	300 max	milliamperes
D-c grid current.....	70 max	75 max	milliamperes
Plate input.....	500 max	750 max	watts
Plate dissipation.....	125 max	175 max	watts

Typical Operation

	CCS*	ICAS†	
D-c plate voltage.....	1500	2000	2500 volts
D-c grid voltage			
From a fixed supply of.....	—120	—160	—180 volts
From a grid resistor of.....	3000	4000	3000 ohms
From a cathode resistor of.....	415	550	500 ohms
Peak r-f grid voltage.....	280	330	350 volts
D-c plate current.....	250	250	300 milliamperes
D-c grid current, approximate.....	40	40	60 milliamperes
Driving power, approximate.....	10	12	19 watts
Power output, approximate.....	275	375	575 watts

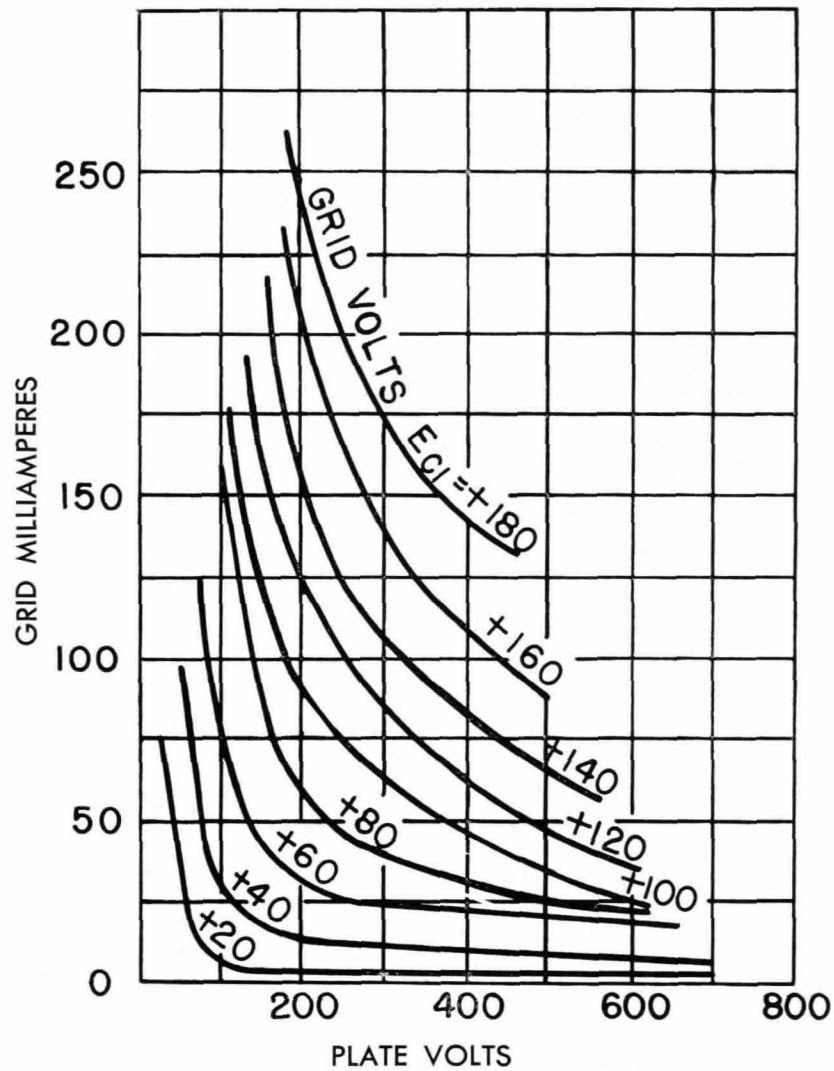
¶ Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.

Maximum ratings apply up to 30 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 maximum ratings are the same as shown above). Special attention should be given to adequate ventilation of the bulb at these frequencies.

Frequency.....	30	60	100 megacycles
Percentage of Maximum Rated Plate Voltage and Plate Input			
Class B.....	100	80	80 per cent
Class C plate modulated.....	100	70	50 per cent
Class C unmodulated.....	100	70	50 per cent

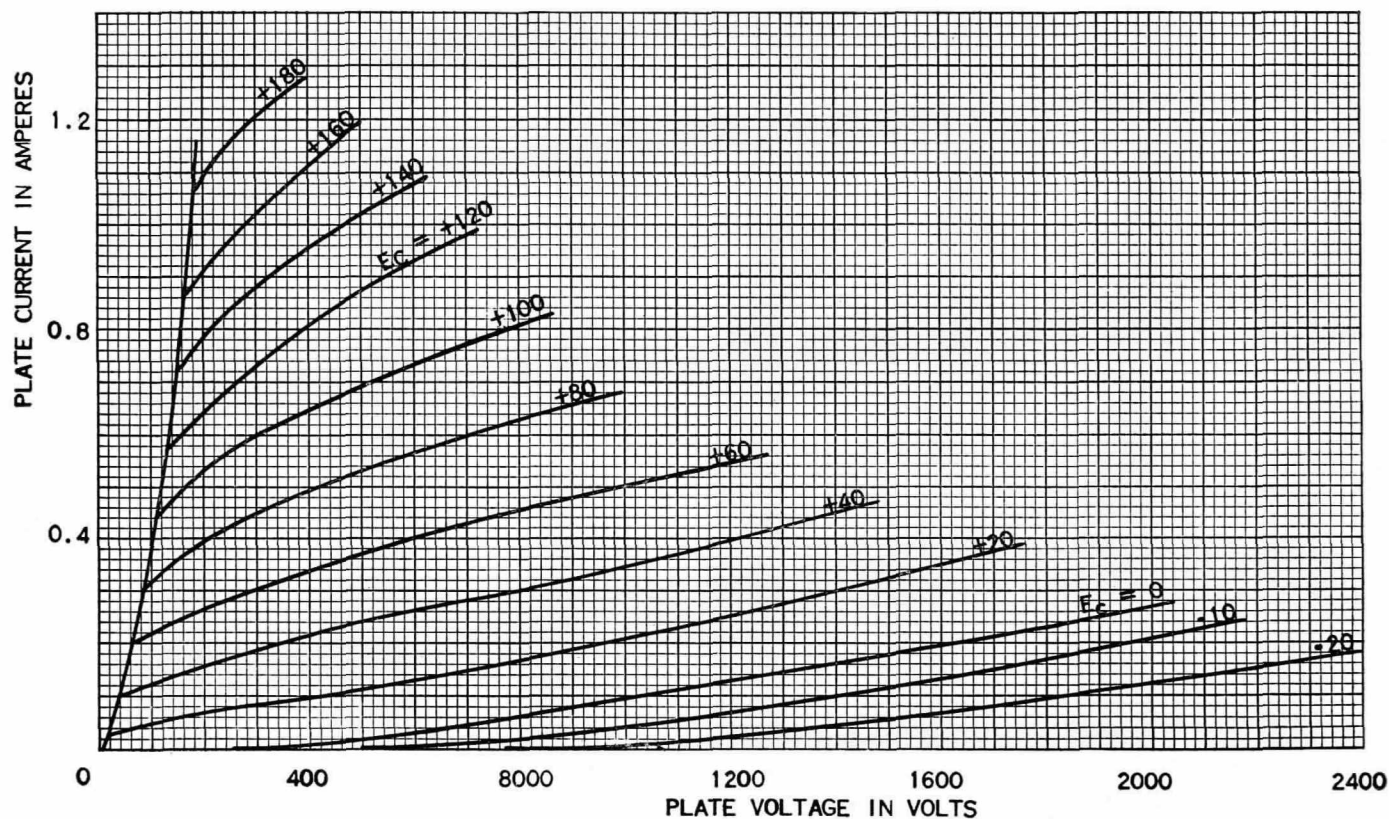
* Continuous commercial service.

† Intermittent commercial and amateur service.



GL-810 TYPICAL CHARACTERISTICS ($E_f = 10$ VOLTS D-C)

▲ GL-810
AVERAGE PLATE CHARACTERISTICS
 $E_i = 10$ VOLTS D-C

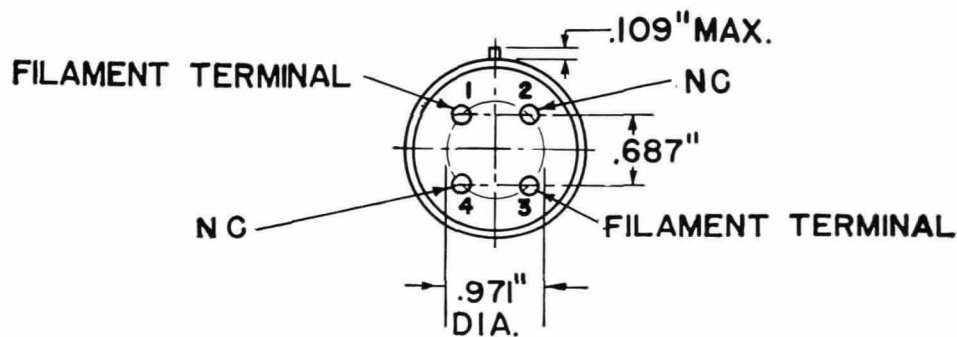
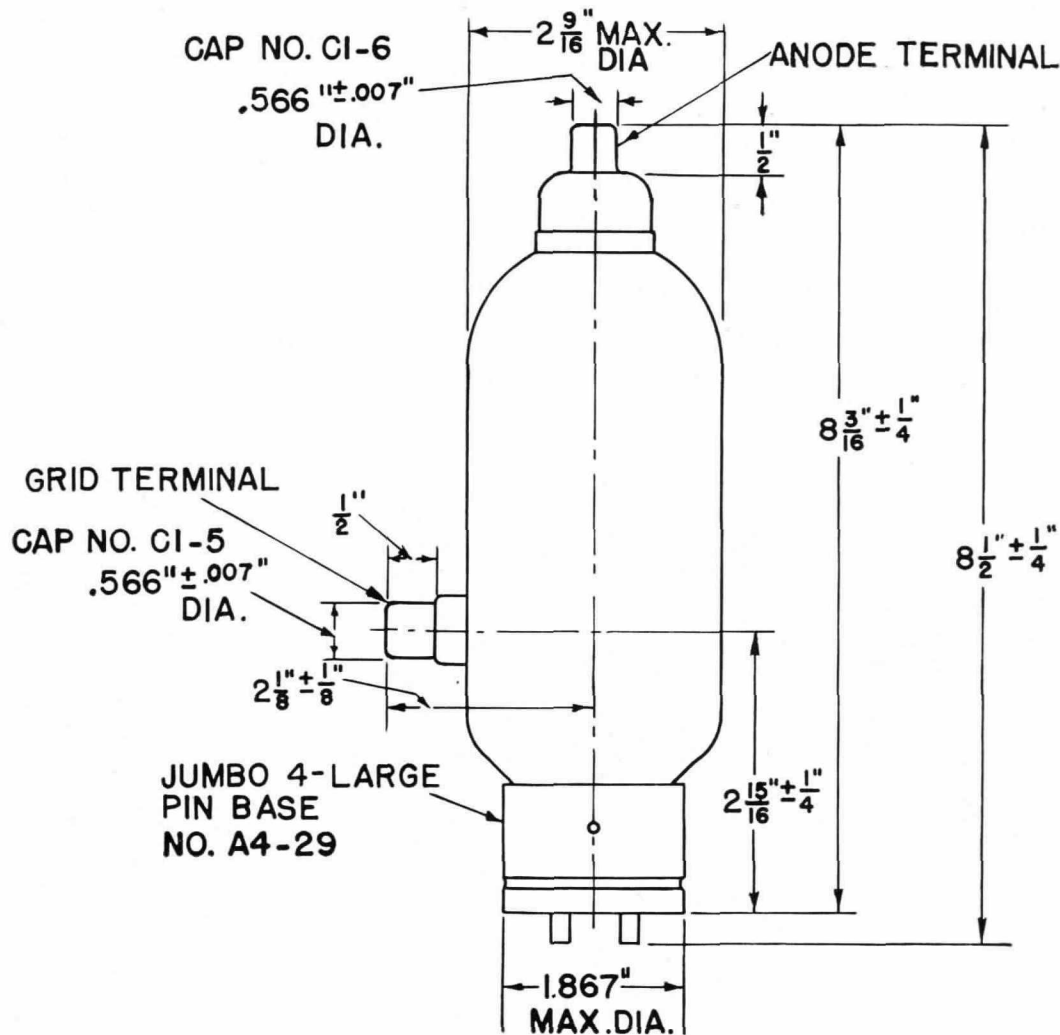


K-69087-72A103

▲ New drawing.

2-6-47

■ OUTLINE
GL-810



K-9033819
■ Revised drawing.

8-12-48

Tube Divisions, Electronics Department

GENERAL ELECTRIC
Schenectady, N. Y.