



TRIODE

DESCRIPTION

The GL-809 is a high-mu transmitting triode with a typical power output of 75 watts (ICAS) for Class C telegraph service. Because of its high perveance, the tube can be operated at high plate efficiency and low driving power. Grid bias re-

quirements are extremely low for Class B audio-frequency service. This transmitting tube can be operated at maximum ratings at frequencies as high as 60 megacycles and up to frequencies of 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.....6.3 volts

Filament current.....2.5 amperes

Amplification factor.....50

Direct interelectrode capacitances

Grid-plate.....6.7 micromicrofarads

Grid-cathode.....5.7 micromicrofarads

Plate-cathode.....0.9 micromicrofarad

Frequency for maximum ratings.....60 megacycles



GENERAL  ELECTRIC

TECHNICAL INFORMATION (CONT'D)

Mechanical

Base description.....	medium 4-pin ceramic
Net weight, approximate.....	3 ounces
Shipping weight, approximate.....	3 pounds
Mounting position.....	vertical, base down or horizontal plane of electrodes vertical

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

	Typical Operation			Maximum Ratings*	
CLASS B AUDIO-FREQUENCY POWER AMPLIFIER (TWO TUBES)	CCS	ICAS	CCS	ICAS	
D-c plate voltage.....	500	750	1000	750	1000 volts
Maximum signal plate current, per tube†.....				100	100 milliamperes
D-c maximum signal plate input, per tube†.....				75	100 watts
Plate dissipation, per tube†.....				25	30 watts
D-c grid voltage§.....	0	-4.5	-10		volts
Peak a-f grid input voltage.....	135	140	156		volts
Zero signal plate current.....	40	40	40		milliamperes
Maximum signal plate current.....	200	200	200		milliamperes
Load resistance, per tube.....	1300	2100	2900		ohms
Maximum signal driving power, approximate.....	2.4	2.4	3.4		watts
Effective load, plate-to-plate.....	5200	8400	11600		ohms
Maximum signal plate power output.....	60	100	145		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.....	500	600	750	600	750	volts
D-c grid voltage.....	-60	-60	-60	-200	-200	volts
From a grid resistor of.....	2000	2000	2000			ohms
D-c plate current.....	83	83	100	83	100	milliamperes
D-c grid current, approximate ♦.....	32	32	32	35	35	milliamperes
Plate input.....				50	75	watts
Plate dissipation.....				17.5	25	watts
Peak r-f grid input voltage, approximate.....	135	135	150			volts
Driving power, approximate ♦.....	3.2	3.2	4.3			watts
Plate power output.....	30	38	55			watts

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Key-down conditions per tube without modulation △

D-c plate voltage.....	500	750	1000	750	1000	volts
D-c grid voltage.....	-50	-60	-75	-200	-200	volts
From a grid resistor of.....	2500	3000	3000			ohms
From a cathode resistor of.....	420	500	600			ohms
D-c plate current.....	100	100	100	100	100	milliamperes
D-c grid current, approximate ♦.....	20	20	25	35	35	milliamperes
Plate input.....				75	100	watts
Plate dissipation.....				25	30	watts
Peak r-f grid input voltage, approximate.....	135	140	160			volts
Driving power, approximate ♦.....	2.5	2.5	3.8			watts
Plate power output.....	35	55	75			watts

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

§ Grid voltages are given with respect to the midpoint of filament operated on alternating current. If direct current is used, each stated value of grid voltage should be reduced by one-half the filament voltage and the circuit returns made to the negative end of the filament.

♦ Subject to wide variations depending upon 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 be capable of delivering considerably more than the required driving power.

△ 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.

APPLICATION NOTES

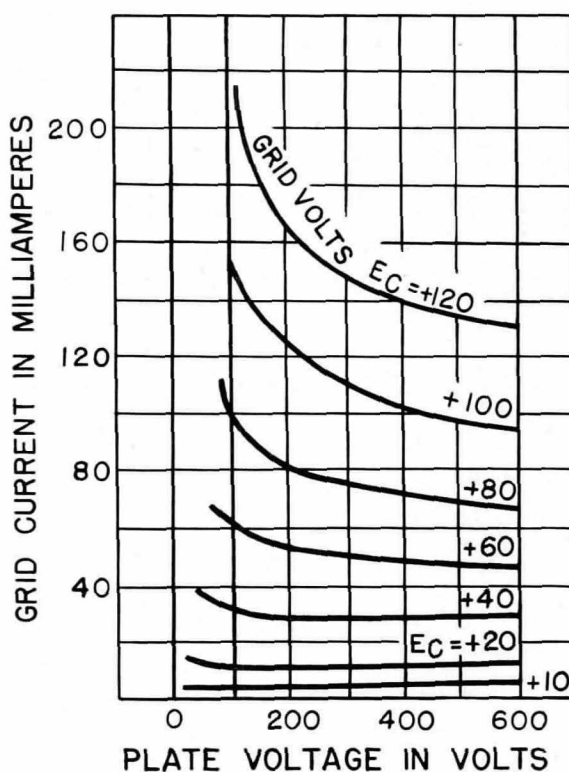
The GL-809 can be operated at frequencies as high as 60 megacycles. The tube may be operated at higher frequencies provided the maximum values of plate voltage and power input are reduced as the frequency is raised (other maximum ratings are the same as shown above).

The tabulation below shows the highest percentage of maximum plate voltage and power input that can be used up to 120 megacycles for the various classes of service. Special attention should be given to adequate ventilation of the bulb at these frequencies.

Frequency.....	60	70	120 megacycles
Maximum permissible percentage of maximum rated plate voltage and plate input			
Class B, r-f.....	100	93	75 per cent
Class C, plate-modulated.....	100	88	50 per cent
Class C, telegraphy.....	100	88	50 per cent

GL-809 AVERAGE CHARACTERISTICS

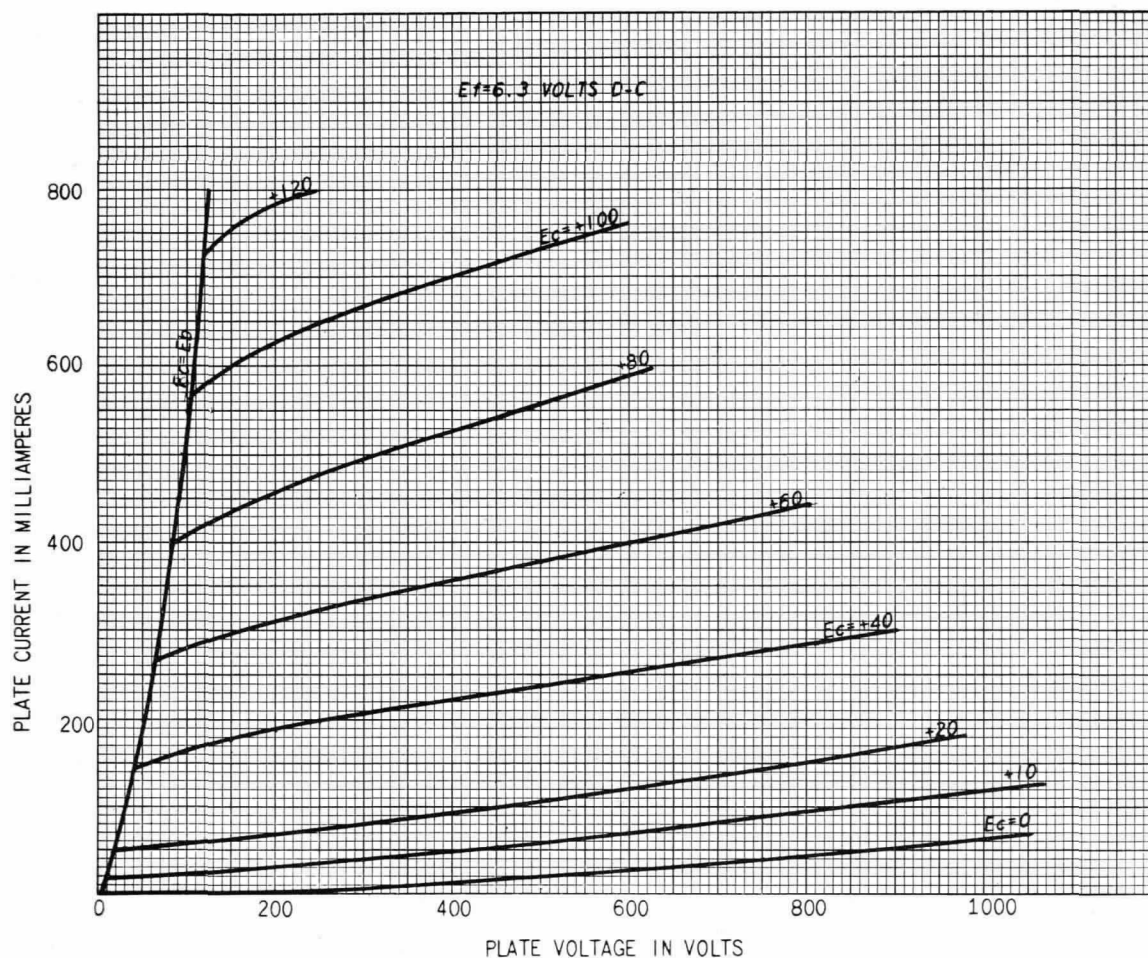
($E_f = 6.3$ VOLTS D-C)

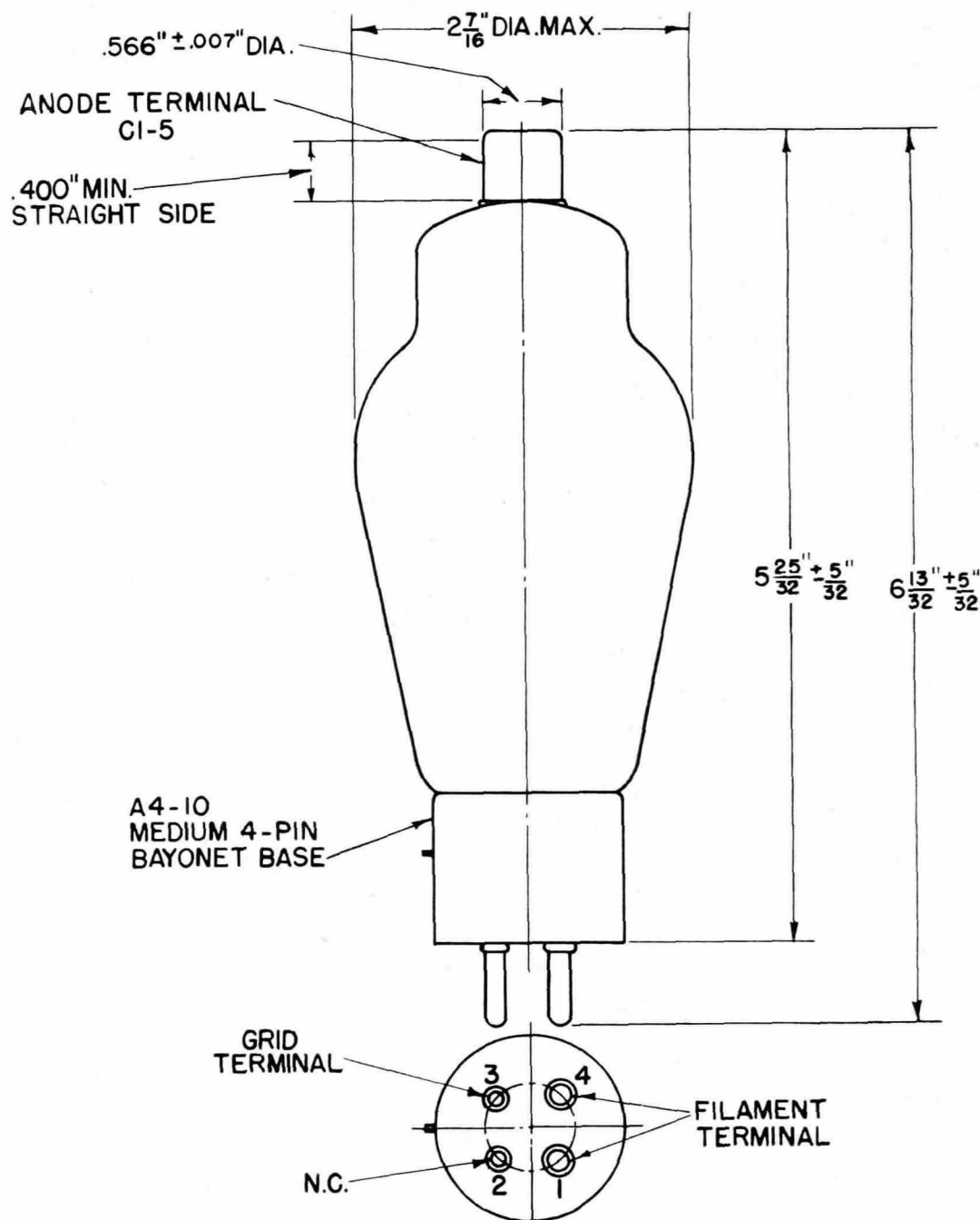


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GL-809 AVERAGE PLATE CHARACTERISTICS





GL-809 CUTLINE

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