



TRIODE

DESCRIPTION

The GL-8025-A is a three-electrode tube designed for use as a Class C amplifier and oscillator at the ultrahigh frequencies. The anode is capable of

dissipating 40 watts with forced-air cooling. The cathode is a thoriated-tungsten filament. Maximum ratings apply up to 500 megacycles.

TECHNICAL INFORMATION

These data are for reference only. For design information see the specifications.

GENERAL CHARACTERISTICS

Number of electrodes	3	
Electrical		
Filament* voltage	6.3	volts
Filament current	1.92	ampere
Amplification factor	18	
Interelectrode capacitances		
Grid-plate	3.0	micromicrofarads
Grid-filament	2.7	micromicrofarads
Plate-filament	0.4	micromicrofarad
Frequency for maximum ratings	500	megacycles


Electronic
TUBE

GENERAL  ELECTRIC

TECHNICAL INFORMATION (CONT'D)

Mechanical

Cooling.....	see footnote (†)
Mounting position.....	vertical only, base up or down
Net weight, approx.....	3 ounces
Shipping weight, approx.....	1 pound
Base.....	small 4-pin, micanol

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

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

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

	Forced-air Cooling CCS△	Natural Cooling ICAS△	
Maximum Ratings, Absolute Values			
D-c plate voltage.....	800 max	800 max	volts
D-c grid.....	−200 max	−200 max	volts
D-c plate current.....	65 max	65 max	milliamperes
D-c grid current.....	20 max	20 max	milliamperes
Plate input.....	50 max	33 max	watts
Plate dissipation.....	27 max	20 max	watts

Typical Operation

D-c plate voltage.....	800	volts
D-c grid voltage		
From a fixed supply of.....	−105	volts
From a cathode resistor of.....	10000	ohms
Peak r-f grid voltage.....	145	volts
D-c plate current.....	40	milliamperes
D-c grid current†, approximate.....	10.5	milliamperes
Driving power†, approximate.....	1.4	watt
Power output, approximate.....	22	watts

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

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

	Forced-air Cooling CCS△	Natural Cooling ICAS△	
Maximum Ratings, Absolute Values			
D-c plate voltage.....	1000 max	1000 max	volts
D-c grid voltage.....	−200 max	−200 max	volts
D-c plate current.....	65 max	65 max	milliamperes
Plate input.....	60 max	50 max	watts
Plate dissipation.....	40 max	30 max	watts

Typical Operation

D-c plate voltage.....	1000	volts
D-c grid voltage		
From a fixed supply of.....	−135	volts
From a cathode resistor of.....	2500	ohms
Peak r-f grid voltage.....	155	volts
Peak a-f grid voltage.....	65	volts
D-c plate current.....	50	milliamperes
D-c grid current†, approximate.....	4	milliamperes
Driving power††, approximate.....	3.5	watts
Power output, approximate.....	20	watts

† Requirements are indicated under MAXIMUM RATINGS for each class of service. *Natural cooling* means that adequate free circulation of air around the tube is necessary. When *forced-air cooling* is required, an air flow from a fan should be directed on the bulb.

TECHNICAL INFORMATION (CONT'D)

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

Key-down conditions per tube without modulation ¶

	Forced-air Cooling CCS Δ	Natural Cooling ICAS Δ	
Maximum Ratings, Absolute Values			
D-c plate voltage	1000 max	1000 max	volts
D-c grid voltage	-200 max	-200 max	volts
D-c plate current	80 max	80 max	milliamperes
D-c grid current	20 max	20 max	milliamperes
Plate input	75 max	50 max	watts
Plate dissipation	40 max	30 max	watts

Typical Operation

D-c plate voltage	1000	volts
D-c grid voltage		
From a fixed supply of	-90	volts
From a grid resistor of	6400	ohms
From a cathode resistor of	1400	ohms
Peak r-f grid voltage	130	volts
D-c plate current	50	milliamperes
D-c grid current†, approximate	14	milliamperes
Driving power‡, approximate	1.6	watt
Power output, approximate	35	watts

* The filament is center-tapped and the center lead is brought out to the No. 3 pin. With this design, it is possible to minimize the effect of filament lead inductance by connecting all three filament leads in parallel through r-f by-pass capacitors. The center-lead of this parallel connection should not be returned directly to the center-tap of the filament-transformer winding or to ground, although it may be by-passed to either of these points if desired.

Δ CCS = Continuous Commercial Service. ICAS = Intermittent Commercial and Amateur Service.

† Subject to wide variations 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 be capable of supplying considerably more than the required driving power.

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

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

APPLICATION NOTES

Maximum ratings apply up to 500 megacycles. The tube may be operated at higher frequencies provided the maximum values of plate voltage and plate input are reduced according to the tabulation below (other maximum ratings

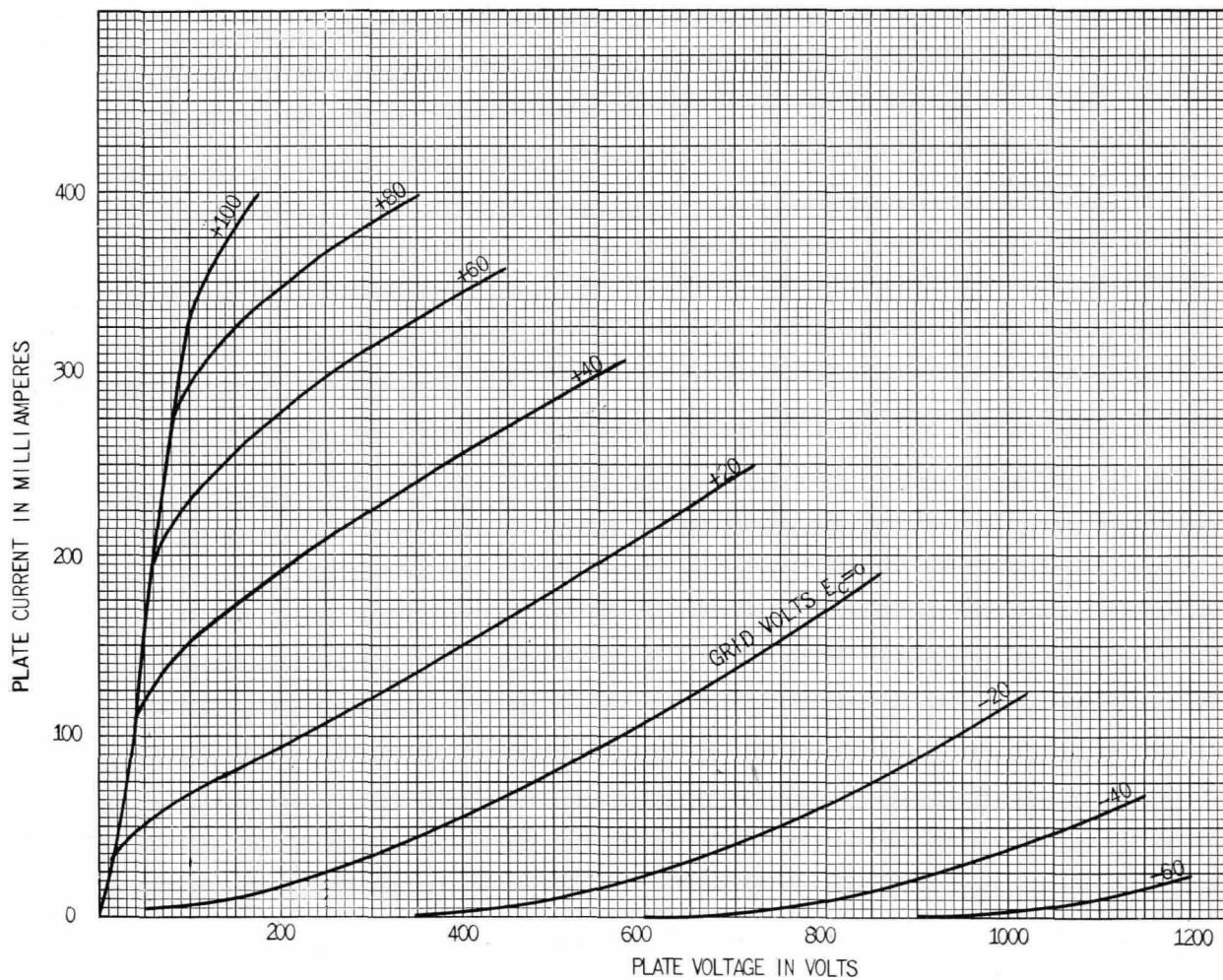
are the same as shown on the preceding page). Special attention should be given to adequate ventilation of the bulb at these frequencies.

Frequency	500	600	megacycles
Percentage of Maximum Rated Plate Voltage			
Class C plate-modulated	100	70	per cent
Class C grid-modulated	100	80	per cent
Class C unmodulated	100	70	per cent

The percentages for 600 megacycles refer only to maximum plate voltage. The maximum input may be 100 per cent of its rated value.

GL-8025-A AVERAGE PLATE CHARACTERISTICS

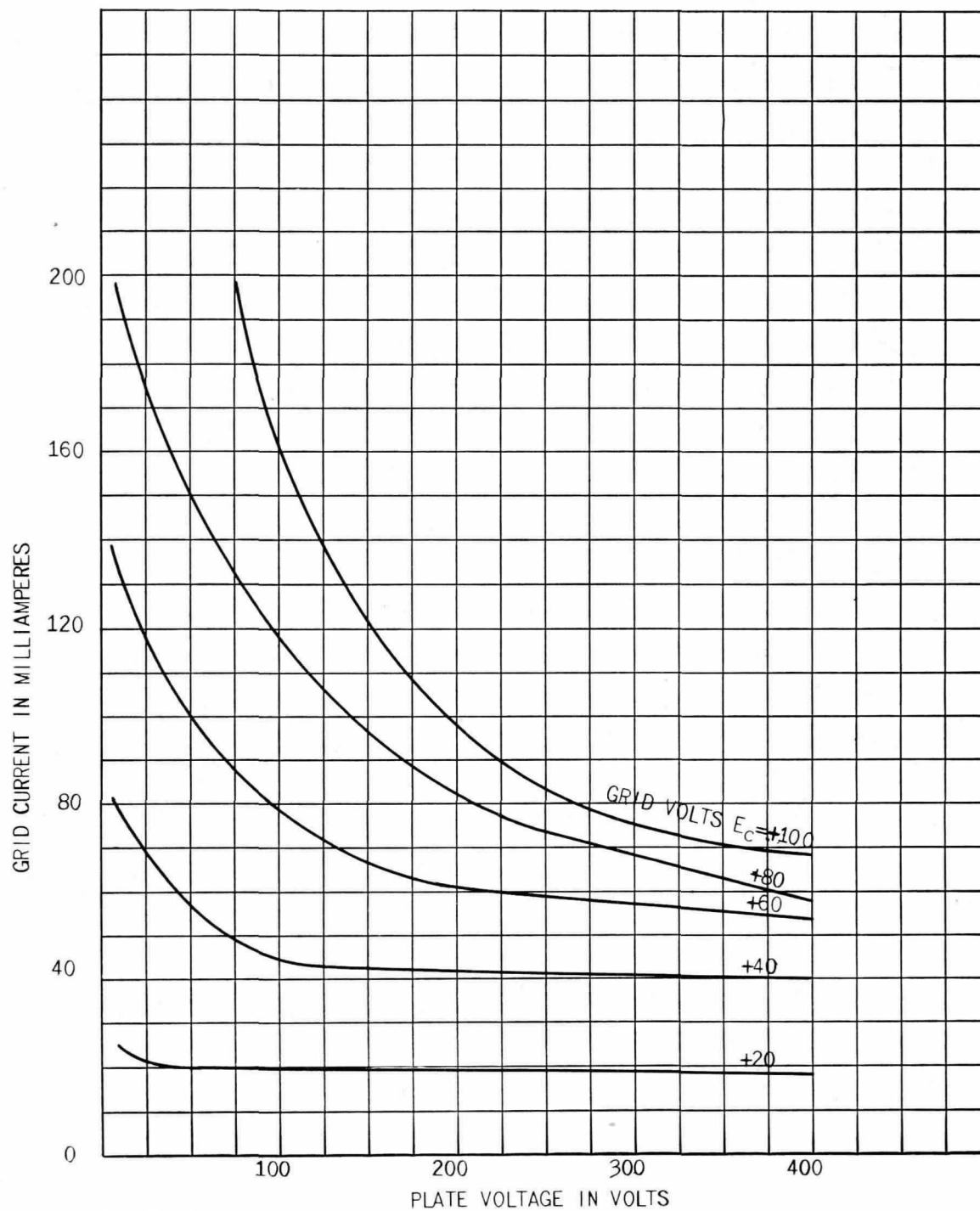
$E_f = 6.3$ VOLTS

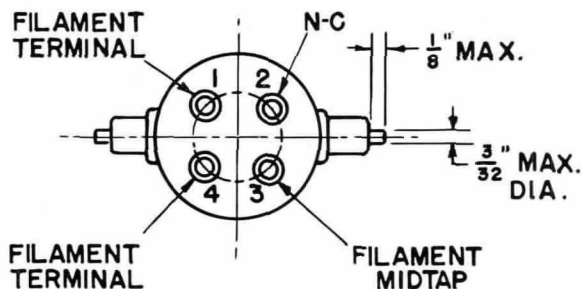
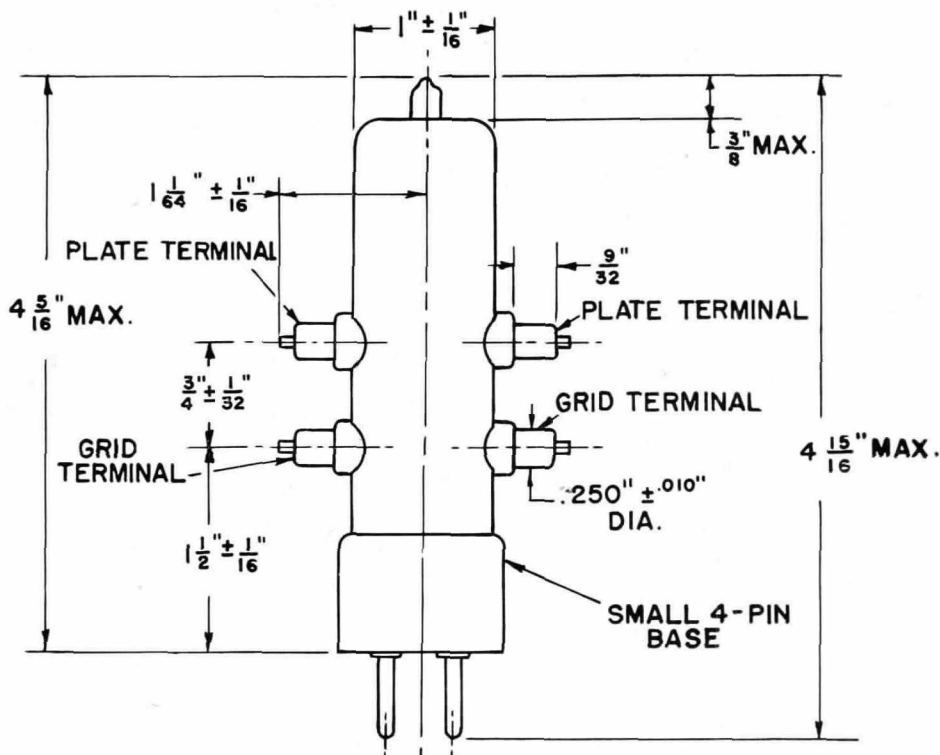


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GL-8025-A TYPICAL CHARACTERISTICS
 $E_f = 6.3$ VOLTS





BOTTOM VIEW

⊥ OF EACH CAP SHALL NOT DEVIATE MORE THAN 3° FROM PLANE NORMAL TO THE PLANE OF PINS NO.1 & NO.4 & PASSING THROUGH CENTER OF BOTTOM OF BASE.

⊥ OF BULB SHALL NOT DEVIATE MORE THAN 2° IN ANY DIRECTION FROM THE PERPENDICULAR ERECTED AT CENTER OF BOTTOM OF BASE.

GL-8025-A OUTLINE

N-15092AZ

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