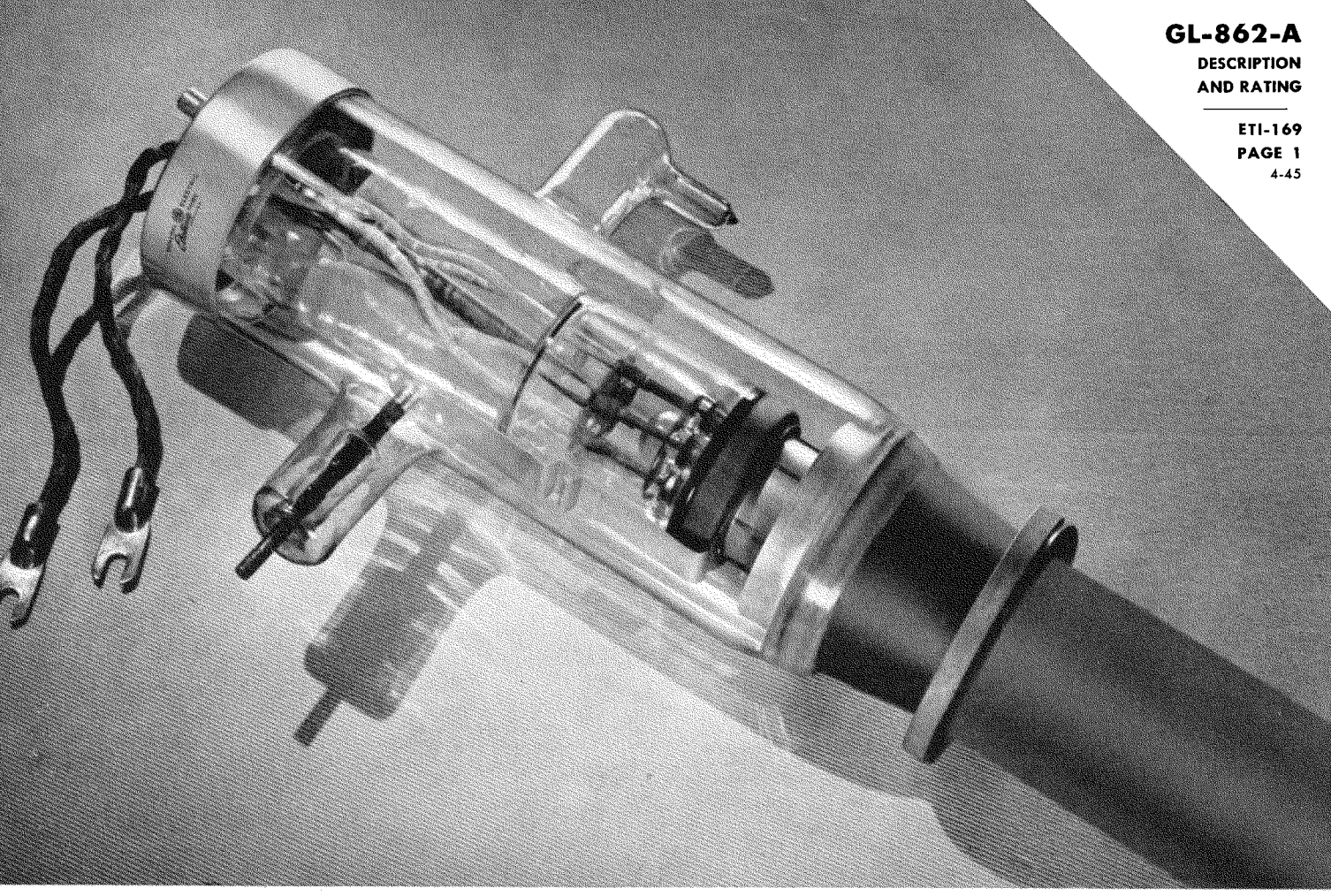

PLIOTRON

DESCRIPTION

The GL-862-A is a three-electrode power tube designed for use as a radio-frequency amplifier, oscillator, or Class B modulator. The plate is water-cooled and is capable of dissipating 50 to 100 kilowatts, depending upon the class of service in which the tube is used.

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	33	volts
Filament current	207	amperes
Average characteristics		
Amplification factor	45	
Grid-plate transconductance	17200	micromhos
Direct interelectrode capacitances, approx		
Grid-plate	69.5	micromicrofarads
Input	53	micromicrofarads
Output	4.5	micromicrofarads
Frequency for maximum ratings	1.6	megacycles

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TECHNICAL INFORMATION (CONT'D)

Mechanical

Base	6628	
Gasket	Cat. No. 5182028P1	
Type of cooling	Water and forced air	
Water flow		
Max outlet temperature	70	centigrade
	15–25	gallons per minute
Air flow		
To bulb	15	cu ft per min
To stem	3	cu ft per min
Net weight, approximate	30	pounds
Shipping weight, approximate	175	pounds
Mounting position	Vertical, anode down	

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

CLASS B AUDIO-FREQUENCY AMPLIFIER (TWO TUBES)

	Typical Operation	Maximum Ratings	
D-c plate voltage	12000	15000	volts
Maximum signal plate current, per tube*		7.5	amperes
D-c maximum signal plate input, per tube*		100	kilowatts
Plate dissipation*, per tube		50	kilowatts
D-c grid voltage	0		volts
Peak, a-f grid input voltage	2000		volts
Zero signal plate current	3		amperes
Maximum signal plate current	13		amperes
Maximum signal plate input*	156		kilowatts
Maximum signal driving power, approx	450		watts
Effective load, plate to plate	1800		ohms
Maximum signal plate power output	90		kilowatts

CLASS B RADIO-FREQUENCY POWER AMPLIFIER

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

D-c plate voltage	12000	15000	18000	20000	volts
D-c grid voltage	−100	−150	−200		volts
D-c plate current	2.8	3.5	4.2	5	amperes
Plate input				100	kilowatts
Plate dissipation				75	kilowatts
Peak r-f grid input voltage	500	625	750		volts
Driving power**, approx	0.5	0.75	1.1		kilowatts
Plate power output	11	17.5	25		kilowatts

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—PLATE MODULATED

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

D-c plate voltage	8000	10000	12000	12000	volts
D-c grid voltage	−700	−750	−800	−3000	volts
D-c plate current	4	4.5	5	5	amperes
D-c grid current, approx	1	1	1	1.25	amperes
Plate input				60	kilowatts
Plate dissipation				50	kilowatts
Peak r-f grid input voltage, approx	1700	1850	2000		volts
Driving power, approx	1.7	1.85	2		kilowatts
Plate power output	24	34	45		kilowatts

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Key-down conditions per tube without modulation #

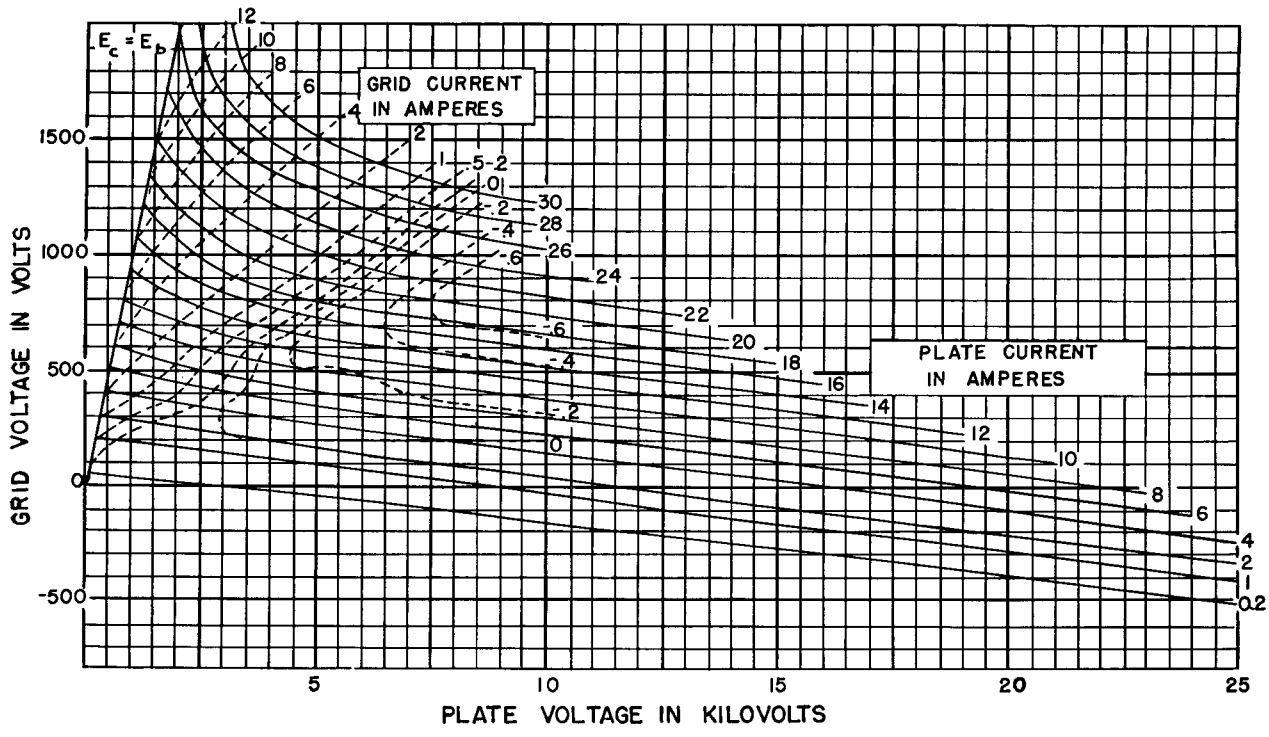
D-c plate voltage	12000	15000	18000	20000	volts
D-c grid voltage	−800	−900	−1000	−3000	volts
D-c plate current	6.25	7.5	8.33	10	amperes
D-c grid current, approx	0.8	0.85	0.9	1	ampere
Plate input				200	kilowatts
Plate dissipation				100	kilowatts
Peak r-f grid input voltage, approx	2050	2300	2550		volts
Driving power, approx	1.6	2	2.4		kilowatts
Plate power output	50	75	100		kilowatts

* Averaged over any audio-frequency cycle.
**At crest of audio-frequency cycle.
\# 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

Plate Series Protective Resistors (see paragraph describing plate circuit under Installation in the Instructions.)

Series resistor	10	20	40	50	ohms
Maximum power output of rectifier	100	250	640	1600	kilowatts



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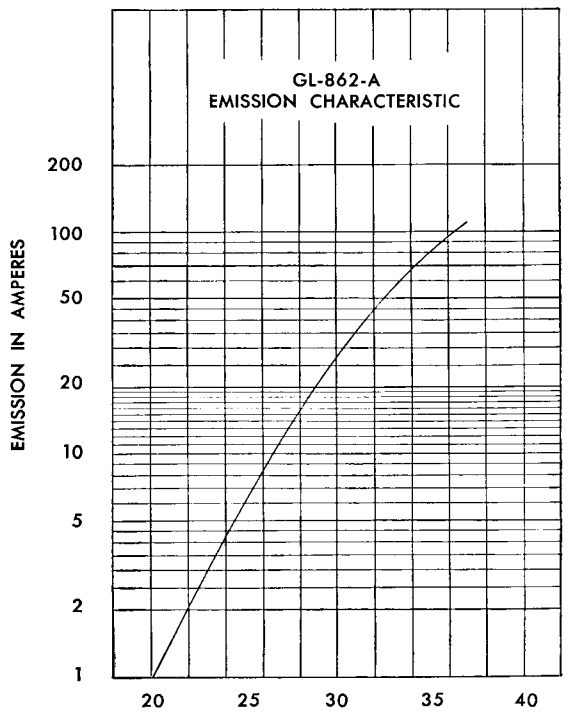
GL-862-A CHARACTERISTICS (E_f = 33 VOLTS A-C)



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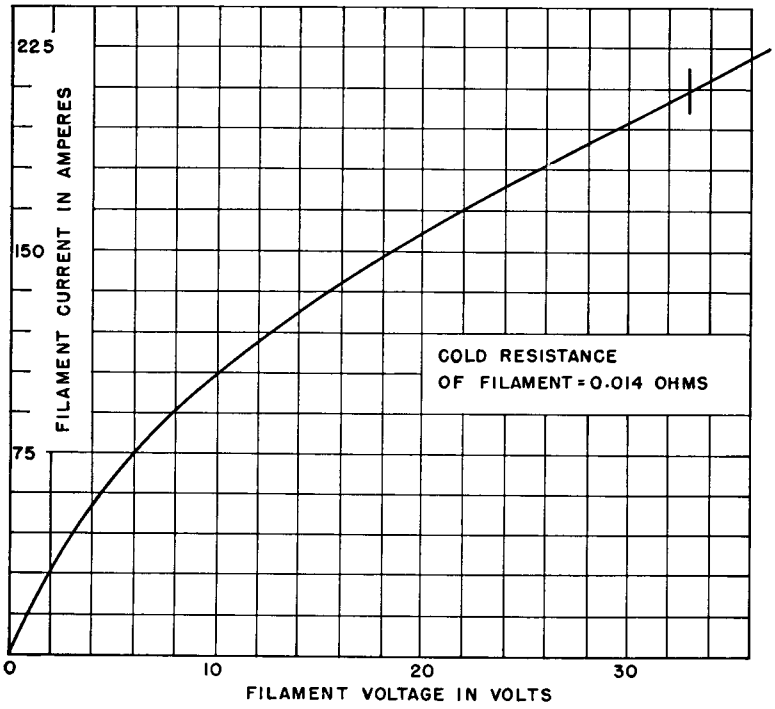
FILAMENT VOLTAGE IN VOLTS (SINGLE-PHASE FILAMENT EXCITATION)

GL-862-A
FILAMENT CHARACTERISTICS



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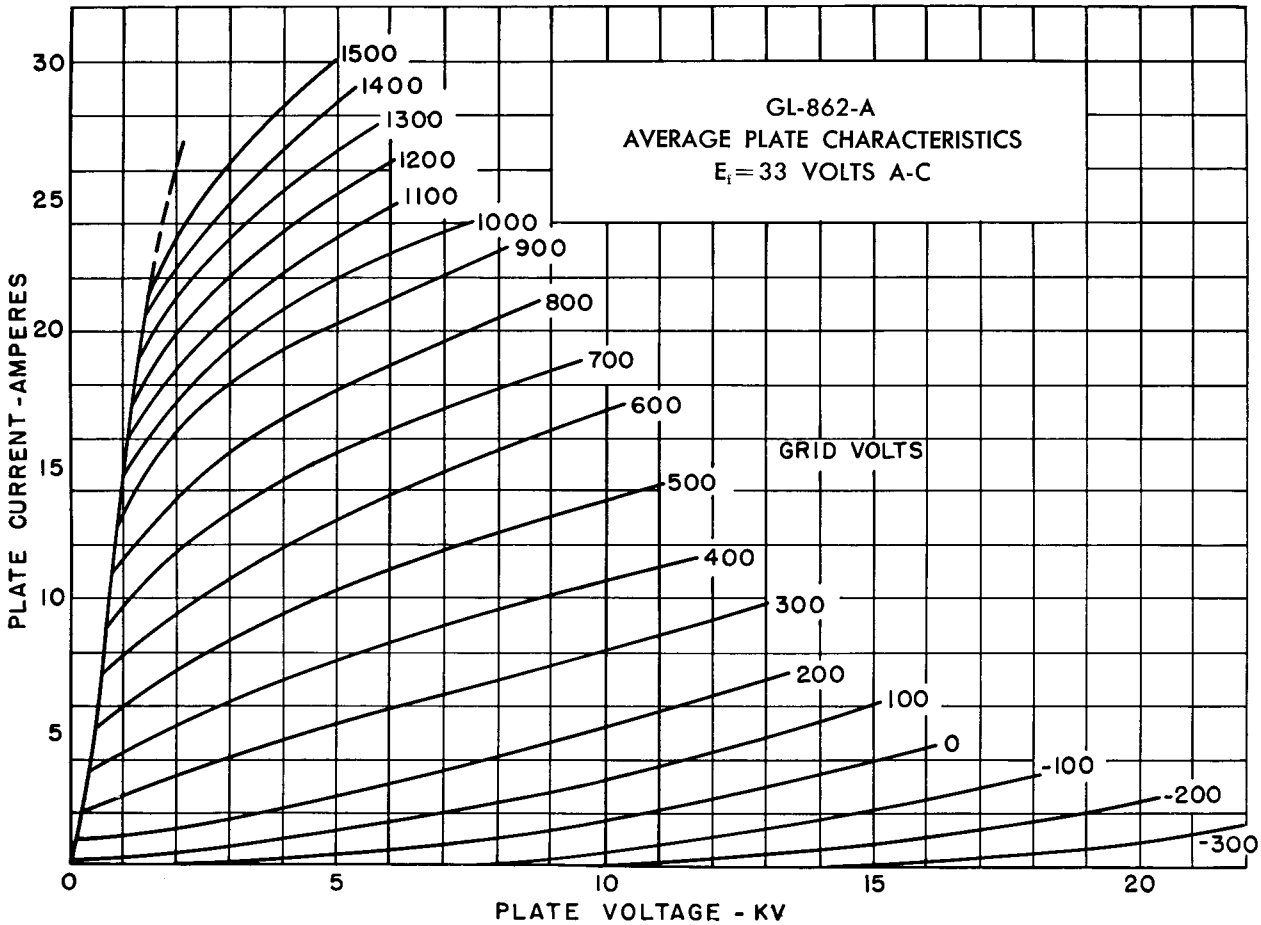

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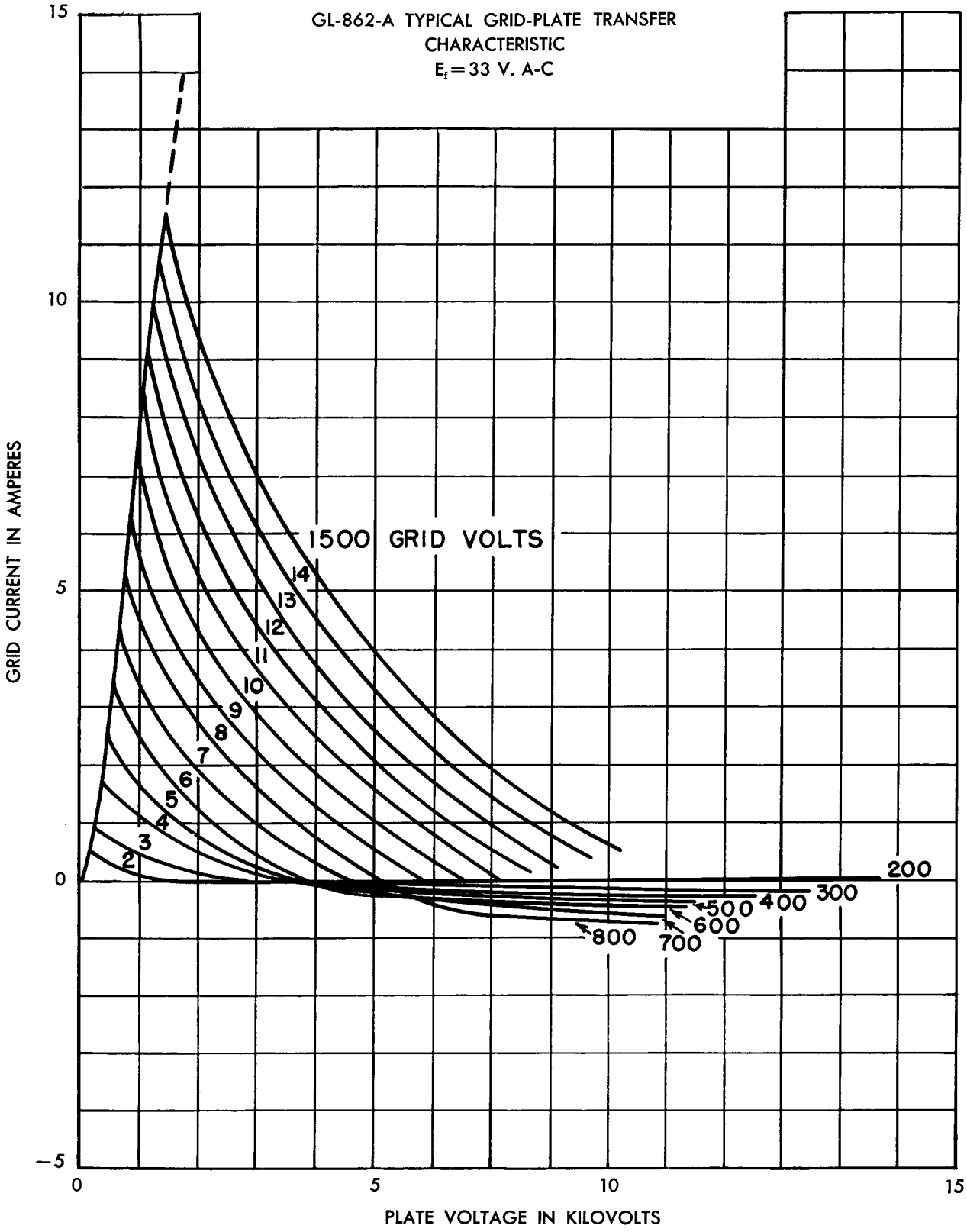

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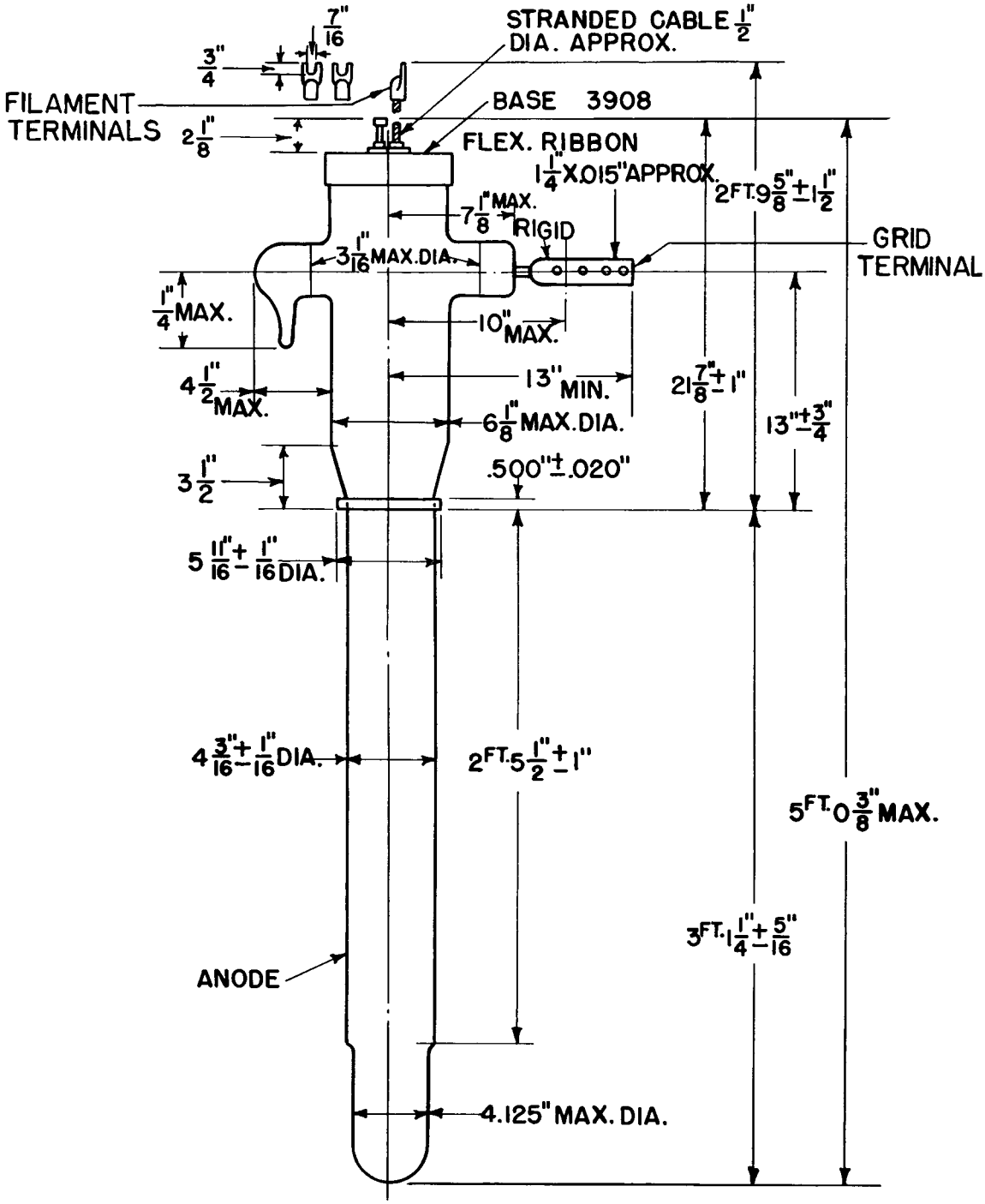

OUTLINE GL-862-A PLIOTRON

K-3846052

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Electronics Department

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