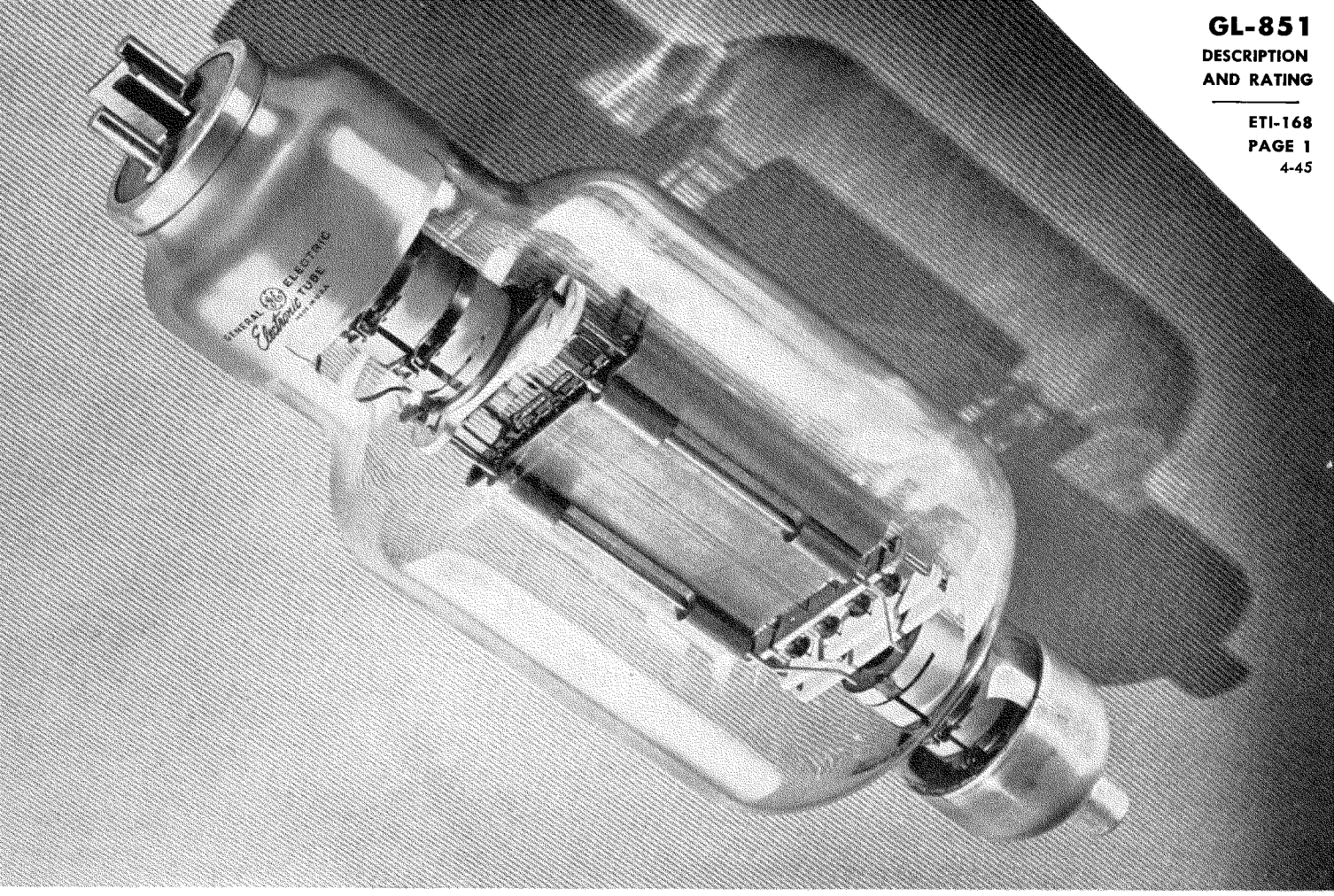


PLIOTRON

DESCRIPTION

The GL-851 is a three-electrode, general purpose tube designed for use as a radio-frequency amplifier, oscillator, or Class B modulator. The plate of this tube is capable of dissipating 500 to 750 watts.

TECHNICAL INFORMATION

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

GENERAL CHARACTERISTICS

Number of electrodes	3	
Electrical		
Filament voltage	11	volts
Filament current	15.5	amperes
Average characteristics		
Amplification factor, $I_b = 300$ ma	20.5	
Grid-plate transconductance	15000	micromhos
Direct interelectrode capacitances		
Grid plate	47	micromicrofarads
Input	25.5	micromicrofarads
Output	4.5	micromicrofarads
Frequency for maximum ratings	3	megacycles
Mechanical		
Type of cooling		convection
Maximum ambient temperature	60	centigrade
Net weight, approx.	3	pounds
Mounting position	vertical, filament base (large) up or horizontal, filament in vertical plane (on edge)	
Shipping weight, approx.	9	pounds

GE Electronic TUBE

GENERAL ELECTRIC

TECHNICAL INFORMATION (CONT'D)

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

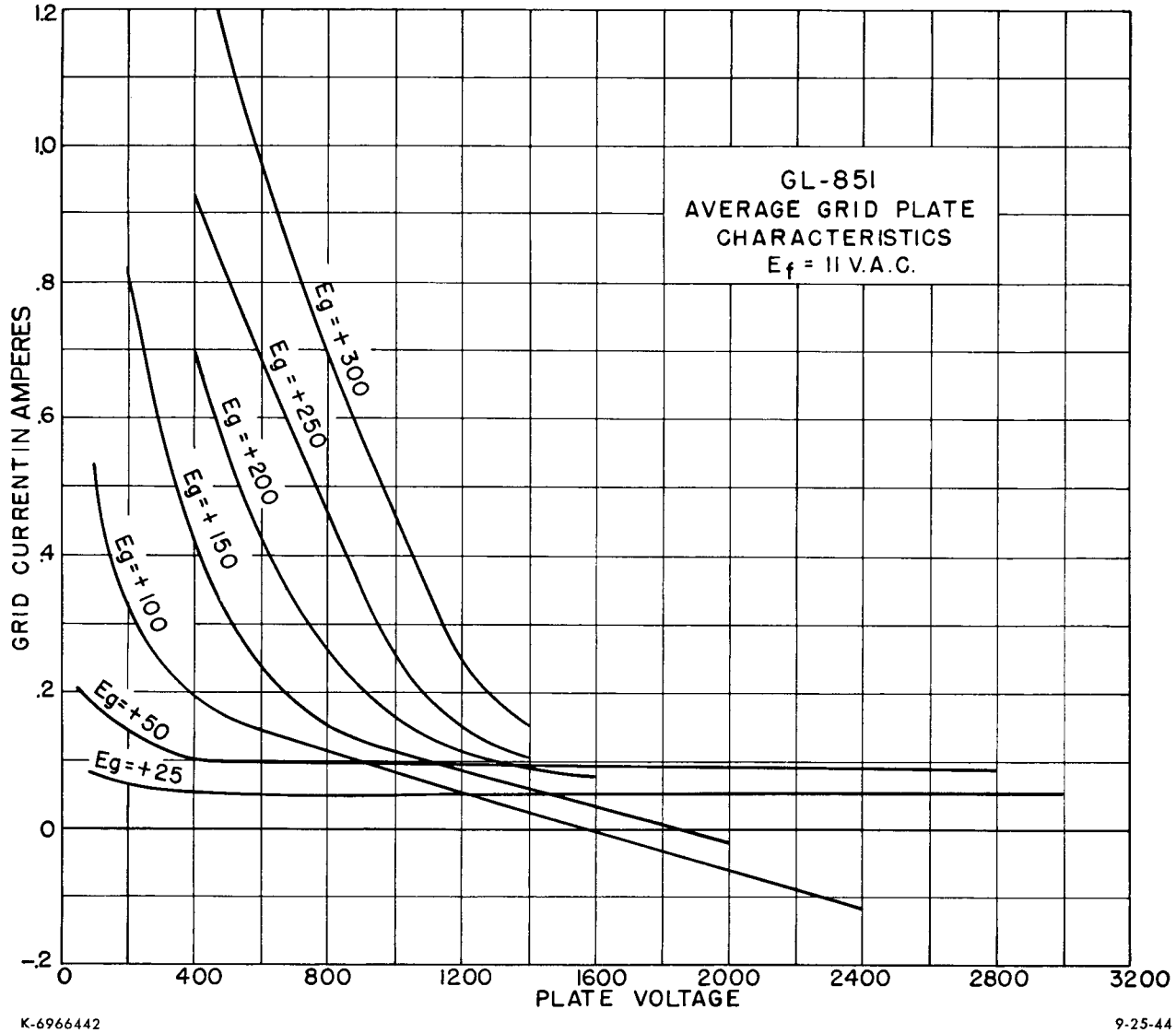
	Typical Operation			Maximum Ratings	
CLASS A AUDIO-FREQUENCY AMPLIFIER AND MODULATOR					
D-c plate voltage	1500	2000	2500	2500	volts
Plate dissipation				600	watts
D-c grid voltage	−49	−65	−92		volts
Peak grid swing, approx.	44	60	87		volts
D-c plate current	0.175	0.270	0.240		ampere
Plate resistance	1800	1500	1600		ohms
Load resistance	3700	3100	5000		ohms
Plate power output, 5 per cent second harmonic	46	100	160		watts
CLASS B AUDIO-FREQUENCY POWER AMPLIFIER (TWO TUBES)					
D-c plate voltage	2000	2500	3000	3000	volts
Max signal plate current, per tube*				1	ampere
D-c max signal plate input, per tube*				2250	watts
Plate dissipation, per tube*				750	watts
D-c grid voltage	−85	−111	−135		volts
Peak a-f grid input voltage	250	245	245		volts
Zero signal plate current	0.12	0.12	0.11		ampere
Max signal plate current	1.7	1.4	1.2		amperes
Max signal plate input*	3400	3500	3600		watts
Max signal driving power, approx.	20	12	6		watts
Effective load resistance, plate-to-plate	2600	4000	5600		ohms
Max signal plate power output	2200	2300	2400		watts
CLASS B RADIO-FREQUENCY POWER AMPLIFIER					
Carrier conditions per tube for use with a max modulation factor of 1.0					
D-c plate voltage	1500	2000	2500	2500	volts
D-c grid voltage	−60	−85	−110		volts
D-c plate current	0.62	0.475	0.39	0.750	ampere
Plate input				1100	watts
Plate dissipation				750	watts
Peak r-f grid input voltage	300	280	270		volts
Driving power, approx†	40	25	20		watts
Plate power output	275	300	325		watts
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		1500	2000	2000	volts
D-c grid voltage		−250	−300	−500	volts
D-c plate current		0.9	0.85	1	ampere
D-c grid current, approx.		0.15	0.125	0.200	ampere
Plate input				1800	watts
Plate dissipation				500	watts
Peak r-f grid input voltage, approx.		475	525		volts
Driving power, approx.		75	65		volts
Plate power output		900	1250		watts
CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR					
Key-down conditions per tube without modulation‡					
D-c plate voltage	1500	2000	2500	2500	volts
D-c grid voltage	−150	−200	−250	−500	volts
D-c plate current	0.9	0.9	0.9	1	ampere
D-c grid current, approx.	0.15	0.12	0.1	0.200	ampere
Plate input				2500	watts
Plate dissipation				750	watts
Peak r-f grid input voltage, approx.	375	425	450		volts
Driving power, approx.	55	50	45		watts
Plate power output	900	1250	1700		watts

* 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

GL-851 can be operated at maximum ratings in all classes of service at frequencies as high as 3 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 under TECHNICAL INFORMATION.) The tabulation below shows the highest percentage of maximum plate voltage and power input that can be used up to 15 mc for the various classes of service. Special attention should be given to adequate ventilation of the bulb at these frequencies.

Frequency	3	7	15 megacycles
Maximum permissible percentage of maximum rated plate voltage and plate input:			
Class B telephony	100	88	76 per cent
Class C telephony, plate-modulated	100	75	50 per cent
Class C telegraphy, plate-modulated	100	75	50 per cent



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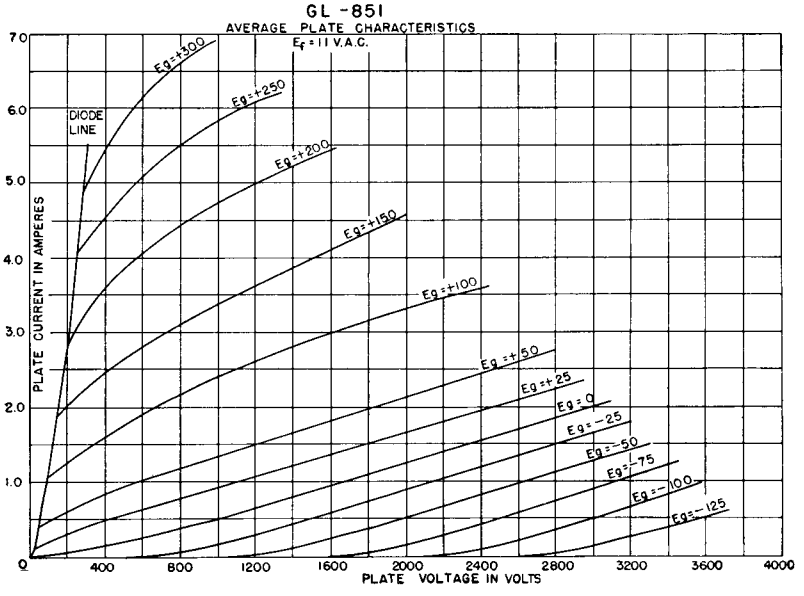

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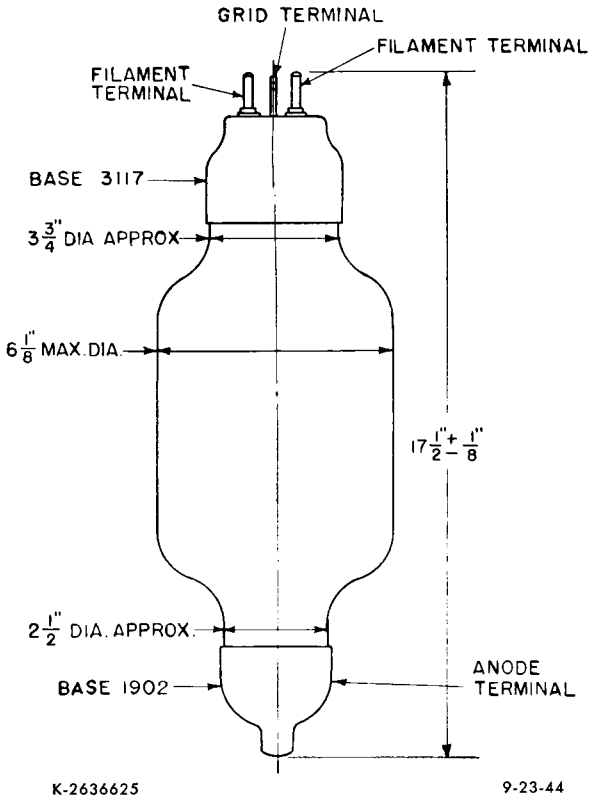

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OUTLINE
GL-851 PLIOTRON

Electronics Department
GENERAL ELECTRIC
Schenectady, N. Y.