

Entered

GL-835

✓ DESCRIPTION
AND RATING

ETX-163

PAGE 1

5-46



TRIODE

DESCRIPTION

The 835 is a three-electronic transmitting tube for use as a Class B and C frequency power amplifier and Class C oscillator. It also serves as an audio-

frequency amplifier or modulator (Class A or B). The GL-835 can be operated at maximum ratings at frequencies as high as 20 megacycles.

TECHNICAL INFORMATION

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

GENERAL CHARACTERISTICS

Number of electrodes.....	3
Electrical	
Cathode—Filamentary	
Filament voltage.....	10.0 volts
Filament current.....	3.25 amperes
Amplification factor.....	12
Grid-plate transconductance ($I_b = 60$ ma).....	3600 micromhos
Direct interelectrode capacitances:	
Grid-plate.....	9.25 micromicrofarads
Input.....	6 micromicrofarads
Output.....	5 micromicrofarads
Frequency for maximum ratings.....	20 megacycles
Mechanical	
Base or terminal description.....	jumbo 4—large pin
Net weight, approx.....	8 ounces
Shipping weight, approx.....	3 pounds
Mounting position.....	vertical, base up or down—horizontal, plate in vertical plane


Electronic
TUBE

GENERAL  ELECTRIC

TECHNICAL INFORMATION (CONT'D)

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

CLASS A AUDIO-FREQUENCY AMPLIFIER AND MODULATOR

D-c plate voltage.....	750	1000	1250	1250	max volts
Plate dissipation.....				75	max watts
D-c grid voltage.....	-41	-56	-75		volts
Peak grid swing, approx.....	41	57	75		volts
D-c plate current.....	.034	.053	.060		ampere
Plate resistance.....	4400	3800	3600		ohms
Load resistance.....	8800	7600	9200		ohms
Plate power output (5 per cent second harmonic).....	5.6	12	19.7		watts

CLASS B AUDIO-FREQUENCY POWER AMPLIFIER (TWO TUBES):

D-c plate voltage.....	1000	1250	1250	max volts
Max signal plate current (per tube)*.....			0.175	ampere
D-c maximum signal plate input (per tube)*.....			220	max watts
Plate dissipation (per tube)*.....			100	max watts
D-c grid voltage.....	-72	-95		volts
Peak a-f grid input voltage.....	380	410		volts
Zero signal plate current.....	.020	.020		ampere
Maximum signal plate current.....	.320	.320		ampere
Maximum signal driving power, approx.....	7.5	8		watts
Effective load (plate-to-plate).....	6900	9000		ohms
Maximum signal plate power output.....	200	260		watts

CLASS B RADIO-FREQUENCY POWER AMPLIFIER

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

D-c plate voltage.....	1000	1250	1250	max volts
D-c grid voltage.....	-72	-95		volts
D-c plate current.....	0.130	0.106	0.150	max ampere
Plate input.....			150	max watts
Plate dissipation.....			100	max watts
Peak r-f grid voltage.....	125	125		volts
D-c grid current, approx.....	5	1		milliamperes
Driving power, approx**.....	10	7.5		watts
Plate power output.....	40	42.5		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.....	750	1000	1000	max volts
D-c grid voltage.....	-200	-260	-400	max volts
D-c plate current.....	0.150	0.150	0.175	max ampere
D-c grid current, approx.....	0.035	0.035	0.050	max ampere
Plate input.....			175	max watts
Plate dissipation.....			67	max watts
Peak r-f grid input voltage, approx.....	350	410		volts
Driving power, approx.....	12	14		watts
Plate power output.....	65	100		

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Key-down conditions per tube with modulation†

D-c plate voltage.....	750	1000	1250	1250	max volts
D-c grid voltage.....	-135	-175	-225	-400	max volts
D-c plate current.....	0.150	0.150	0.150	0.175	max ampere
D-c grid current, approx.....	0.018	0.018	0.018	0.050	max ampere
Plate input.....				220	max watts
Plate dissipation.....				100	max watts
Peak r-f grid input voltage, approx.....	275	315	375		volts
Driving power, approx.....	5	6	7		watts
Plate power output.....	65	100	130		watts

* Averaged over an audio-frequency cycle.

**At crest of audio-frequency cycle.

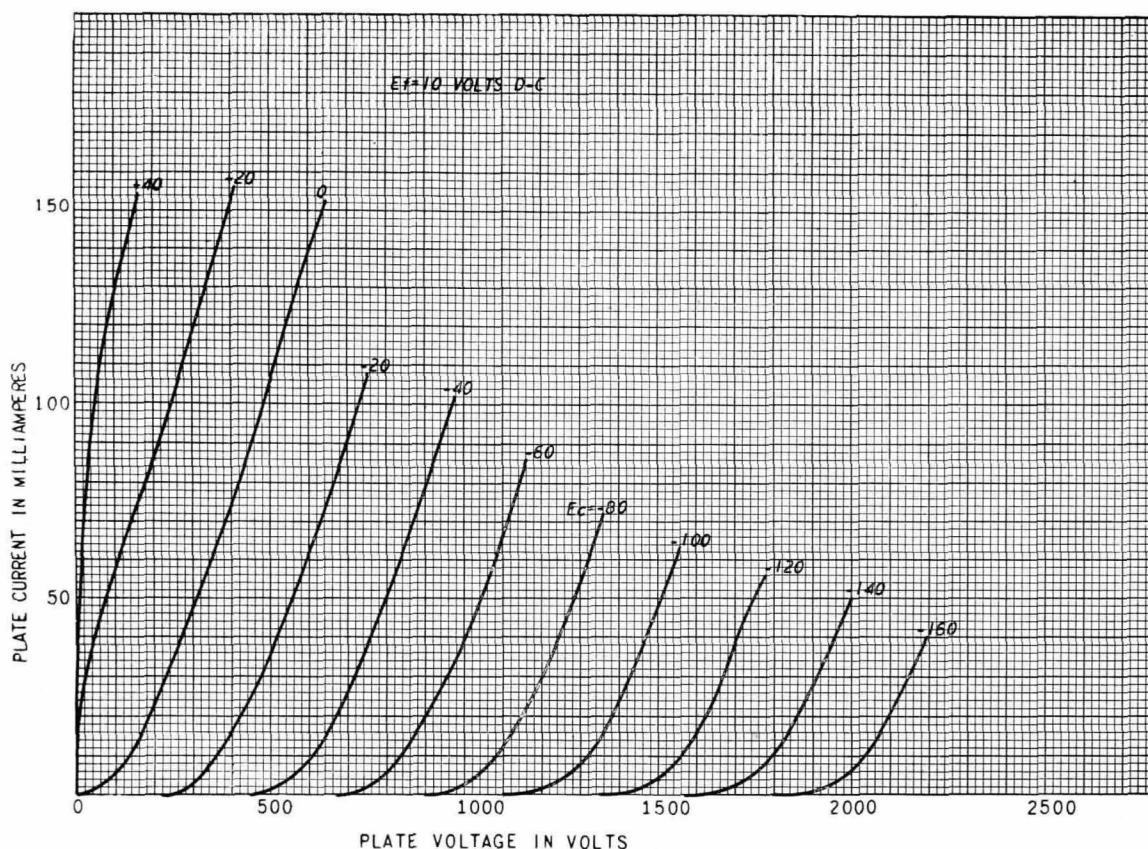
† Modulation, essentially negative, may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.

APPLICATION NOTES

GL-835 can be operated at maximum ratings in all classes of service at frequencies as high as 20 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 100 megacycles for the various classes of service. Special attention should be given to adequate ventilation of the bulb at these frequencies.

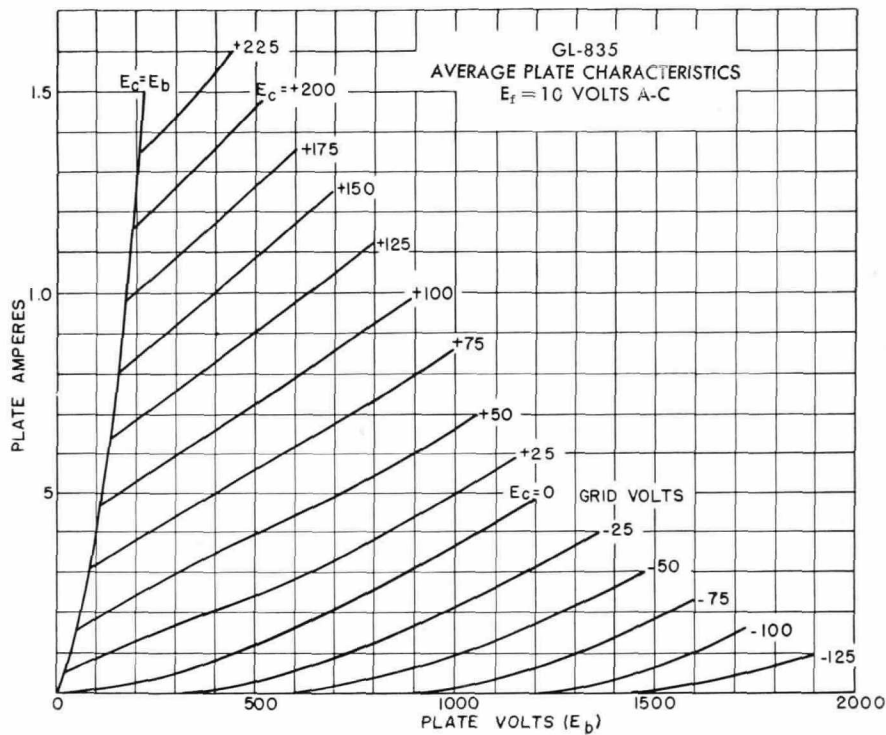
Frequency.....	20	40	100 megacycles
Maximum permissible percentage of maximum rated plate voltage and plate input:			
Class B telephony.....	100	85	70 per cent
Class C { telephony, plate-modulated..... { telegraphy.....	100	80	50 per cent

GL-835 AVERAGE PLATE CHARACTERISTICS



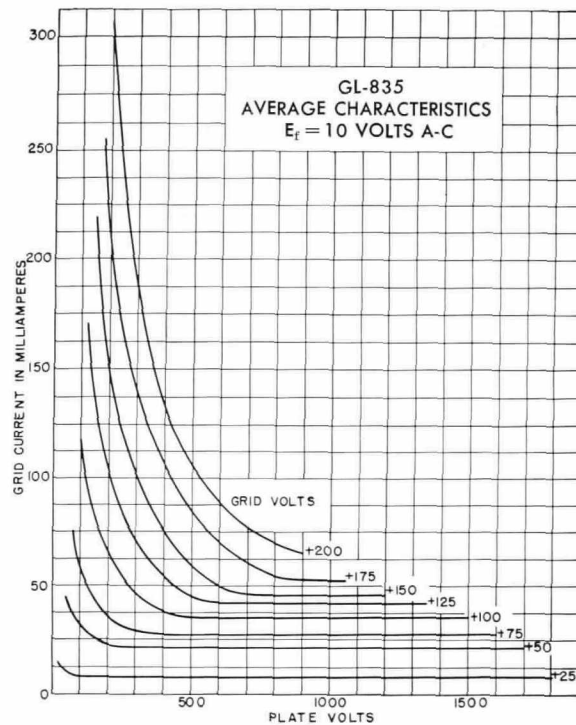
K-6917423

12-10-45



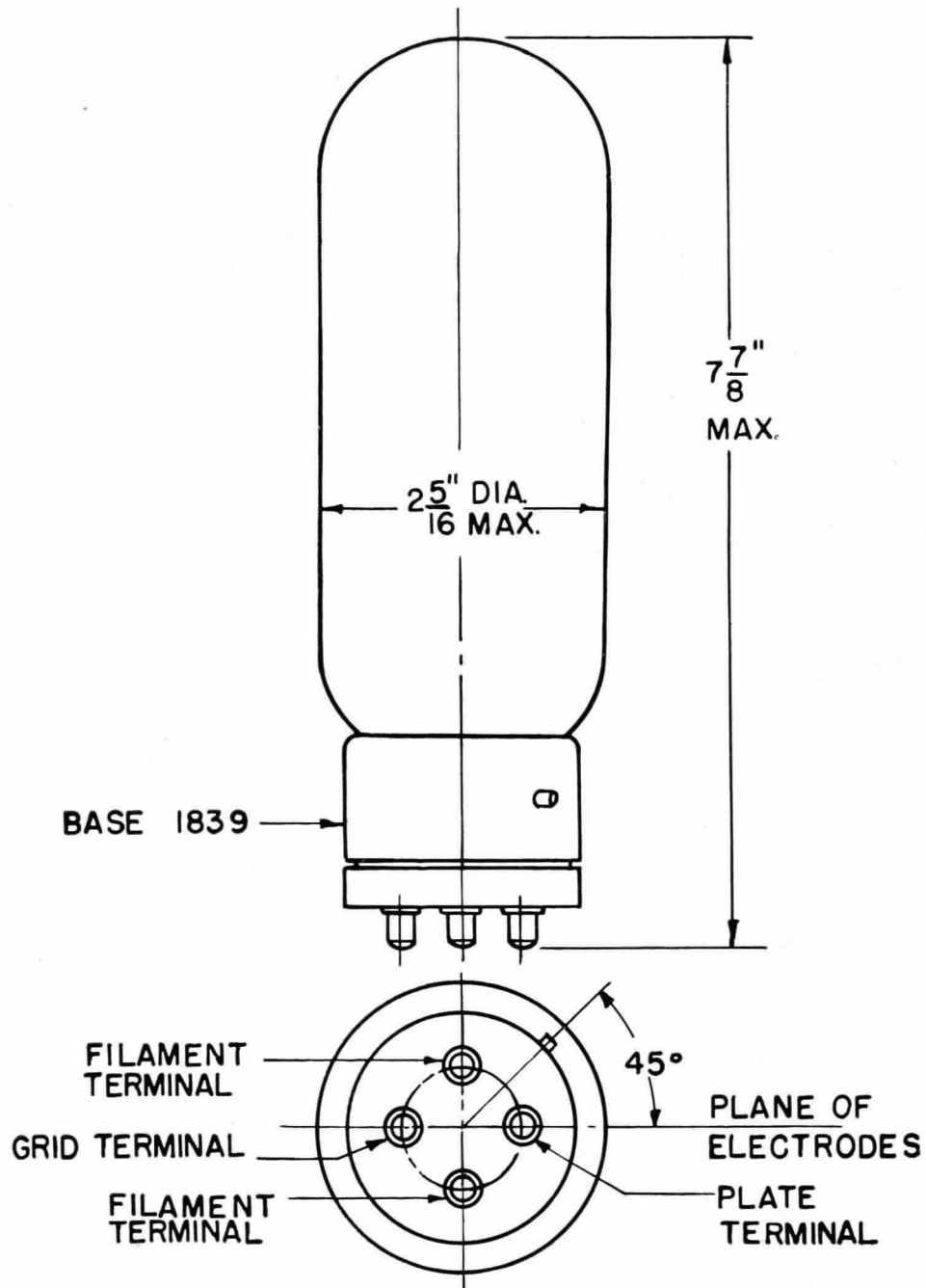
K-6917437

9-26-44



K-6917435

9-26-44



GL-835 OUTLINE

Electronics Department
GENERAL ELECTRIC
Schenectady, N. Y.