



BEAM POWER TUBE

DESCRIPTION

The GL-2E26 is a five-electrode beam power amplifier tube designed for use in FM transmitters, either in low-power driver stages, or in the output stage when only low power output is required. It is also useful in audio-frequency power and modulator service. The anode is capable of dissipating 12.5 watts, and cooling is accomplished by radiation. The cathode is the indirectly heated type. Maximum ratings apply up to 125 megacycles.

The 2E26 has high power sensitivity and high

efficiency and can be operated at relatively low plate voltage to give large power output with small driving power.

The base of this tube has a short metal sleeve which shields the input to the tube so completely that no other external shielding is required. Separation of input and output circuits is accomplished by bringing the plate lead out of the bulb to a cap opposite the base.

TECHNICAL INFORMATION

GENERAL CHARACTERISTICS

Number of electrodes 5

Electrical

Heater voltage, a-c or d-c	6.3 volts
Heater current	0.8 ampere
Transconductance, $I_b = 20$ ma	3500 micromhos
Grid-screen amplification factor	6.5
Interelectrode capacitances*	
Grid-plate	0.20 micromicrofarads
Input	13 micromicrofarads
Output	7 micromicrofarads

GENERAL  ELECTRIC


Electronic
TUBE

TECHNICAL INFORMATION (CONT'D)

Mechanical

Mounting position—any

Net weight, approximate 1½ ounces

* With no external shielding and base sleeve connected to ground.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS A₁

Maximum ratings, absolute values	CCS†	
D-c plate voltage	300 max	volts
D-c grid No. 2 voltage	200 max	volts
Grid No. 2 input	2.5 max	watts
Plate dissipation	10 max	watts
Peak heater—cathode voltage		
Heater negative with respect to cathode	100 max	volts
Heater positive with respect to cathode	100 max	volts
Typical operation	CCS†	
D-c plate voltage	250	volts
D-c grid No. 2 voltage	160	volts
D-c grid No. 1 voltage	—12	volts
Peak a-f grid voltage	12	volts
Zero-signal d-c plate current	35	milliamperes
Maximum-signal d-c plate current	42	milliamperes
Zero-signal d-c grid No. 2 current	7	milliamperes
Maximum-signal d-c grid No. 2 current	10	milliamperes
Load resistance	5500	ohms
Total harmonic distortion	10	per cent
Power output	5.3	watts
Maximum circuit values		
Grid—No. 1—circuit resistance	30,000 max	ohms

PUSH-PULL AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS AB₂

Maximum ratings, absolute values	CCS†	ICAS†	
D-c plate voltage	400 max	500 max	volts
D-c grid No. 2 voltage	200 max	200 max	volts
Maximum signal d-c plate current†	75 max	75 max	milliamperes
Maximum signal plate input†	30 max	37.5 max	watts
Maximum signal grid No. 2 input†	2.5 max	2.5 max	watts
Plate dissipation†	10 max	12.5 max	watts
Peak heater-cathode voltage			
Heater negative with respect to cathode	100 max	100 max	volts
Heater positive with respect to cathode	100 max	100 max	volts
Typical operation	CCS†	ICAS†	
Values are for two tubes, unless otherwise specified			
D-c plate voltage	400	500	volts
D-c grid No. 2 voltage*** Δ	125	125	volts
D-c grid No. 1 voltage, fixed bias	—15	—15	volts
Peak A-f grid—No. 1—to—grid No. 1 voltage	60	60	volts
Zero-signal d-c plate current	20	22	milliamperes
Maximum signal d-c plate current	150	150	milliamperes
Maximum signal d-c grid—No. 2 current	32	32	milliamperes
Effective load resistance, plate to plate	6200	8000	ohms
Maximum signal driving power**, approximate	0.36	0.36	watts
Maximum signal power output, approximate	42	54	watts

TECHNICAL INFORMATION (CONT'D)

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

** Driver stage should be capable of supplying the No. 1 grids of the class AB₂ stage with the specified driving power at load distortion. The effective resistance per grid No. 1 circuit of the class AB₂ stage should be kept below 500 ohms and the effective impedance at the highest response frequency should not exceed 700 ohms.

*** Preferably obtained from a separate source, or from the plate-voltage supply with a voltage divider.

△ In applications requiring the use of screen voltages above 135 volts, provision should be made for the adjustment of grid—no. 1 bias for each tube separately. The necessity for this adjustment at the lower screen voltages depends on the distortion requirements and on whether the plate-dissipation rating is exceeded at zero-signal plate current.

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

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

Maximum ratings, absolute values.....	CCS†	ICAS†
D-c plate voltage.....	400 max	500 max volts
D-c grid No. 2 voltage.....	200 max	200 max volts
D-c grid No. 1 voltage.....	—175 max	—175 max volts
D-c plate current.....	60 max	60 max milliamperes
D-c grid No. 1 current.....	3.5 max	3.5 max milliamperes
Plate input.....	20 max	27 max watts
Grid No. 2 input.....	1.7 max	2.3 max watts
Plate dissipation.....	6.7 max	9 max watts
Maximum ratings, absolute values.....	CCS†	ICAS†
Peak heater—cathode voltage.....		
Heater negative with respect to cathode.....	100 max	100 max volts
Heater positive with respect to cathode.....	100 max	100 max volts
Typical operation.....	CCS†	ICAS†
D-c plate voltage.....	400	500 volts
D-c grid—No. 2 voltage****.....	160	180 volts
	32,000	35,500 ohms
D-c grid—No. 1 voltage*****.....	—50	—50 volts
	20,000	20,000 ohms
Peak r-f grid—No. 1 voltage.....	60	60 volts
D-c plate current.....	50	54 milliamperes
D-c grid—No. 2 current.....	7.5	9 milliamperes
D-c grid—No. 1 current, approximate.....	2.5	2.5 milliamperes
Driving power, approximate.....	0.15	0.15 watts
Power output, approximate.....	13.5	18 watts
Maximum circuit values.....		
Grid—No. 1 circuit resistance°.....	30,000 max	30,000 max ohms

**** Obtained preferably from a separate source modulated with the plate supply, or from the modulated plate supply through series resistor of the value shown.

***** Obtained from grid resistor of value shown or by partial self-bias methods.

° Any additional bias required must be supplied by a cathode resistor or a fixed supply.

TECHNICAL INFORMATION (CONT'D)

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

Key-down conditions per tube without modulation θ

Maximum ratings, absolute values	CCS†	ICAS‡
D-c plate voltage	500 max	600 max volts
D-c grid No. 2 voltage	200 max	200 max volts
D-c grid No. 1 voltage	-175 max	-175 max volts
D-c plate current	75 max	75 max milliamperes
D-c grid No. 1 current	3.5 max	3.5 max milliamperes
Plate input	30 max	40 max watts
Grid No. 2 input	2.5 max	2.5 max watts
Plate dissipation	10 max	13.5 max watts
Peak heater-cathode voltage		
Heater negative with respect to cathode	100 max	100 max volts
Heater positive with respect to cathode	100 max	100 max volts

Typical operation	Up to 125 Mc	At 160 Mc	Up to 125 Mc	At 160 Mc	
D-c plate voltage	400	500	300	600	volts
D-c grid No. 2 voltage Δ	190	185	170	185	volts
	19000	28500	18000	41500	ohms
D-c grid No. 1 voltage ϕ	-30	-40	-75	-45	volts
	10000	13500	30000	15000	ohms
Peak r-f grid No. 1 Voltage	41	50	85	57	105 volts
D-c plate current	75	60	75	66	85 milliamperes
D-c grid No. 2 current	11	11	6	10	7 milliamperes
D-c grid No. 1 current, approximate	3	3	2.5	3	3 milliamperes
Driving power, approximate	0.12	0.15	1.5	0.17	2 watts
Power output, approximate	20	20	13	27	16.5 watts

Maximum circuit values

Grid No. 1 circuit resistance $\blacklozenge$	30000 max	30000 max ohms
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 $\blacklozenge$ Any additional bias required must be supplied by a cathode resistor or a fixed supply. θ Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of the carrier conditions. Δ Obtained preferably from a separate source, or from the plate-voltage supply with a voltage divider, or through a series resistor of the value shown. The grid No. 2 voltage must not exceed 600 volts under key-up conditions. ϕ Obtained from fixed supply, or by grid No. 1 resistor of value shown.

† CCS = Continuous Commercial Service.

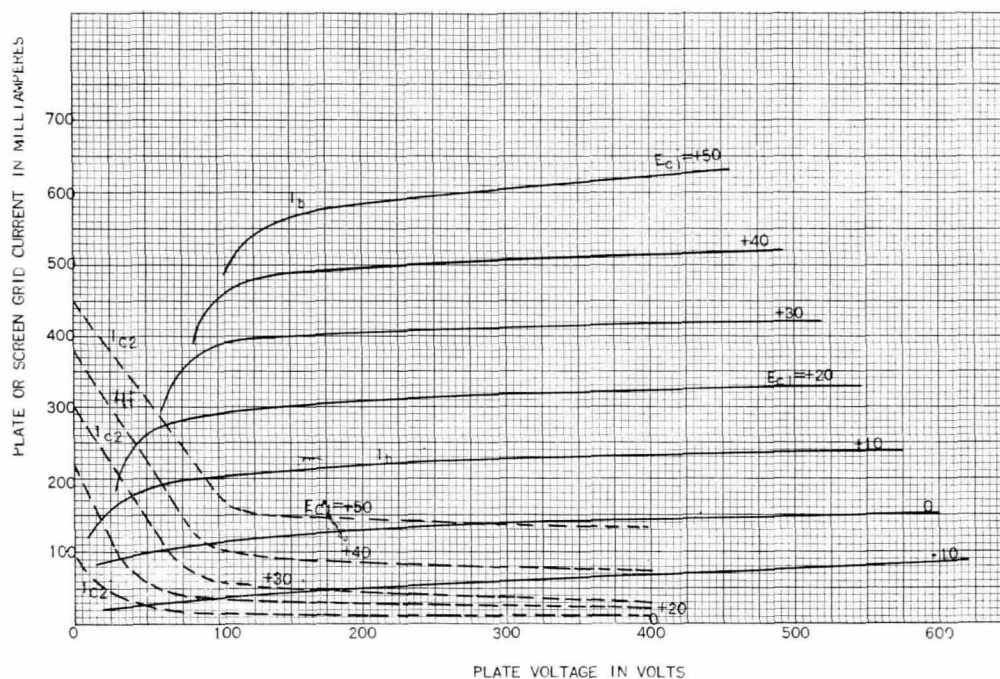
‡ IGAS = Intermittent Commercial and Amateur Service.

APPLICATION NOTES

Maximum ratings apply up to 125 megacycles. The tube may be operated at higher frequencies provided the maximum values of plate voltage and power input are reduced according to the tabulation below (other maximum ratings are the same as shown above). Special attention should be given to adequate ventilation of the bulb at these frequencies.

Frequency	125	150	160	175 megacycles
Percentage of maximum rated plate voltage and plate input				
Class C plate modulated	100	83	75	68 per cent
Class C unmodulated	100	83	75	68 per cent

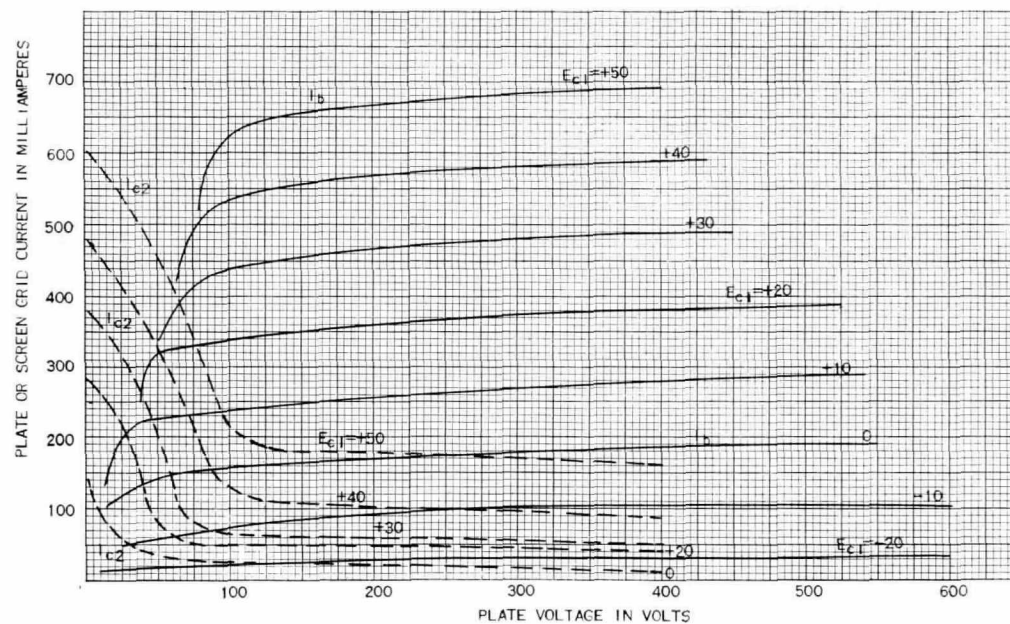
GL-2E26
AVERAGE PLATE CHARACTERISTICS
 $E_i = 6.3$ VOLTS
SCREEN VOLTAGE = 200



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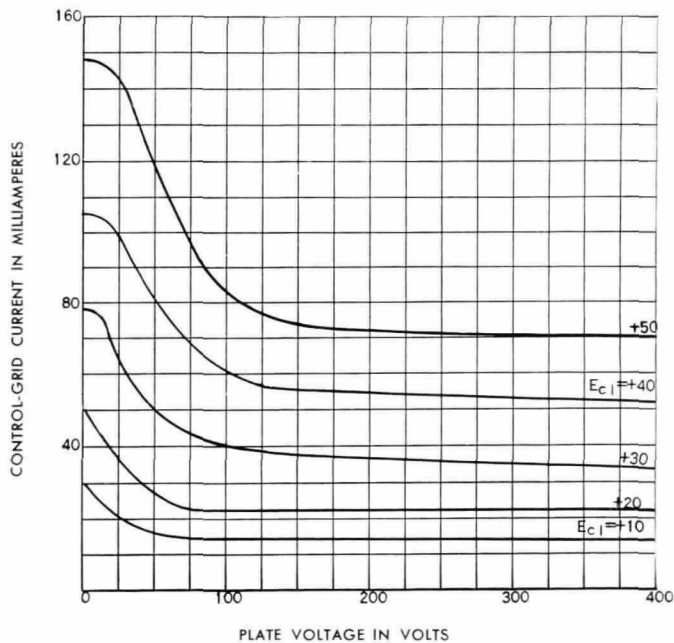
GL-2E26
AVERAGE PLATE CHARACTERISTICS
 $E_i = 6.3$ VOLTS
SCREEN VOLTAGE = 160



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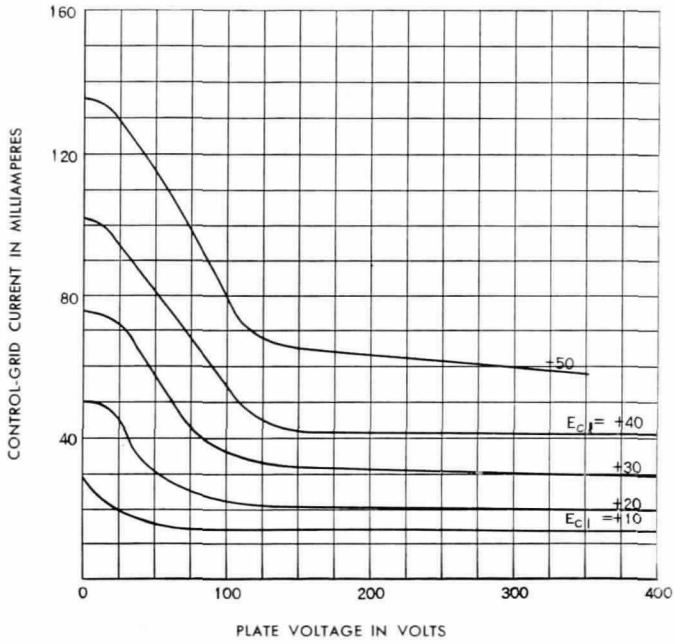
GL-2E26
TYPICAL CHARACTERISTICS
 $E_i = 6.3$ VOLTS
SCREEN VOLTAGE = 160



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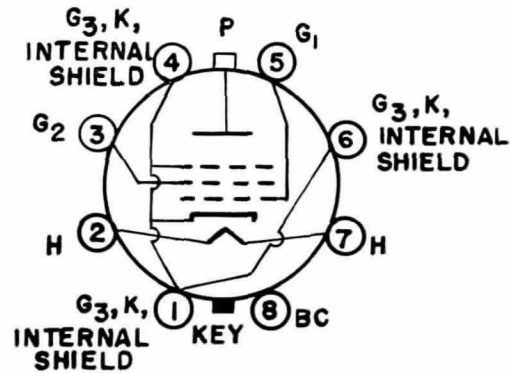
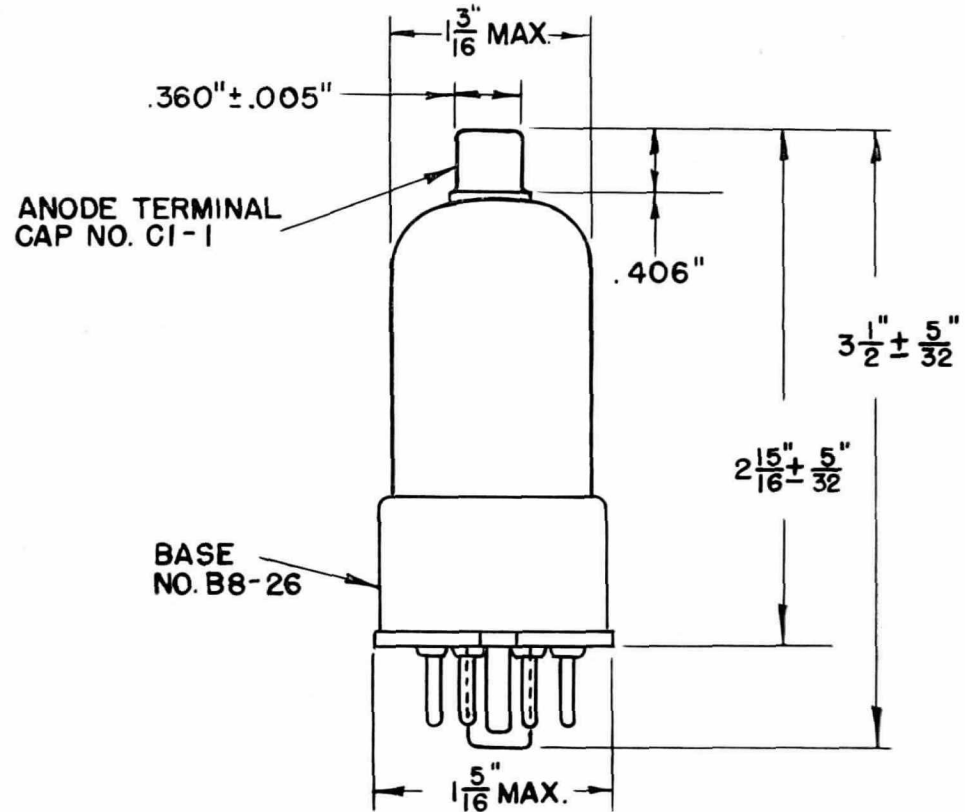
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GL-2E26
TYPICAL CHARACTERISTICS
 $E_i = 6.3$ VOLTS
SCREEN VOLTAGE = 200



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OUTLINE GL-2E26

Electronics Department
GENERAL ELECTRIC
Schenectady, N. Y.