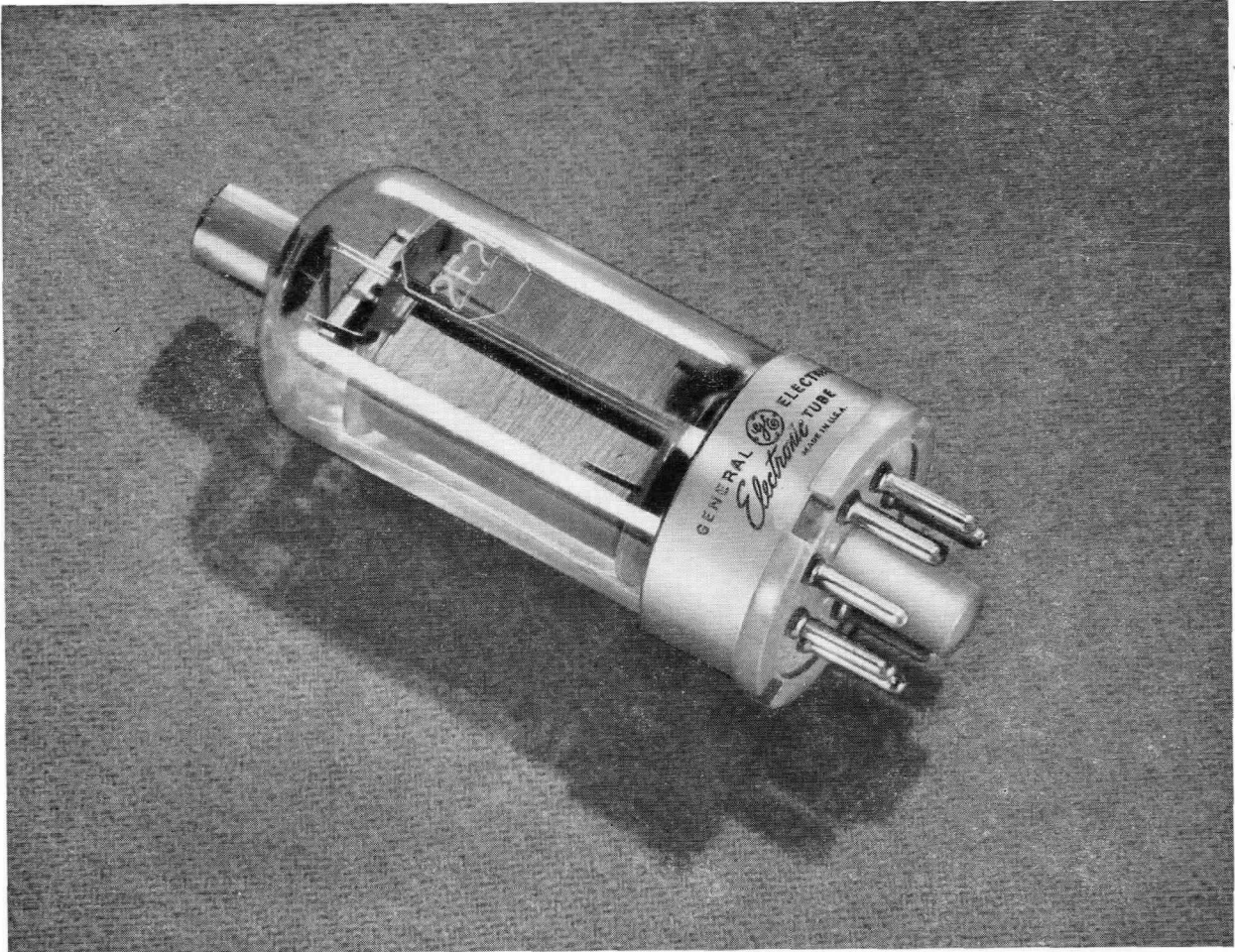


8716100
 2E24



BEAM POWER TUBE

The GL-2E24 is a five-electrode beam power amplifier tube designed for use as a Class C radio-frequency amplifier and oscillator. The anode is capable of dissipating 13.5 watts, and cooling is accomplished by radiation. The cathode is a coated filament. Maximum ratings apply up to 125 megacycles.

This tube is designed for use in mobile and emergency-communications equipment. The quick-heating filament requires only about 4 watts, provides wide latitude in operating-voltage range, and requires less than 2 seconds heating time before power may be turned on. Having high power sensi-

tivity and high efficiency, the GL-2E24 can be operated at relatively low plate voltage to give high power output with low driving power. The filament is designed for intermittent operation only and must not be operated continuously.

The basing arrangement, which provides triple base-pin connections for grid number 3 and filament center tap (both joined to an internal shield inside the tube), permits effective radio-frequency grounding. The metal sleeve of the base has a base-pin terminal and serves to shield the input to the tube and to isolate it from the output circuit.

TECHNICAL INFORMATION

GENERAL

Number of Electrodes 5

Electrical

Filament Voltage 6.3 $\pm 10\%$ Volts

⊕ Filament Current 0.65 Amperes

Transconductance, $I_b = 16$ ma 3200 Micromhos

Grid-Screen Amplification Factor 7.5

⊕ Denotes a change.

GENERAL  ELECTRIC

TECHNICAL INFORMATION (CONT'D)

Interelectrode Capacitances*

Grid No. 1—Plate	0.11 $\mu\mu\text{f}$
Input	8.5 $\mu\mu\text{f}$
Output	6.5 $\mu\mu\text{f}$

Mechanical

Mounting Position—Vertical or Horizontal with Plane of Electrodes Vertical.

New Weight, approximate. 1½ Ounces

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

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

Maximum Ratings, Absolute Values	ICAS†	
DC Plate Voltage	500	Max Volts
DC Grid No. 2 Voltage	200	Max Volts
DC Grid No. 1 Voltage	—175	Max Volts
DC Plate Current	.60	Max Milliamperes
DC Grid No. 1 Current	3.5	Max Milliamperes
Plate Input	.27	Max Watts
Grid No. 2 Input	2.3	Max Watts
Plate Dissipation	.9	Max Watts

Typical Operation	ICAS†	
DC Plate Voltage	500	Volts
DC Grid No. 2 Voltage‡	180	Volts
From a Series Resistor of	40,000	Ohms
DC Grid No. 1 Voltage**	—45	Volts
From a Grid Resistor of	18,000	Ohms
Peak RF Grid No. 1 Voltage	.62	Volts
DC Plate Current	.54	Milliamperes
DC Grid No. 2 Current	.8	Milliamperes
DC Grid No. 1 Current, approximate	2.5	Milliamperes
Driving Power, approximate	0.16	Watts
Power Output, approximate	.18	Watts

Maximum Circuit Values

Grid—No. 1—Circuit Resistance° 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.

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

Key-Down Conditions per Tube Without Modulation ϕ

Maximum Ratings, Absolute Values	ICAS†	
DC Plate Voltage	600	Max Volts
DC Grid No. 2 Voltage	200	Max Volts
DC Grid No. 1 Voltage	—175	Max Volts
DC Plate Current	.85	Max Milliamperes
DC Grid No. 1 Current	3.5	Max Milliamperes
Plate Input	.40	Max Watts
Grid No. 2 Input	2.5	Max Watts
Plate Dissipation	13.5	Max Watts

TECHNICAL INFORMATION (CONT'D)

Typical Operation	Up to 125 Mc Max	At 160 Mc
D-c plate voltage	600	350 volts
D-c grid No. 2 voltage #	195	170 volts
From a series resistor of	40,500	18,000 ohms
D-c grid No. 1 voltage	-50	-50 volts
From a grid resistor of	16,700	16,500 ohms
Peak r-f grid No. 1 voltage	71	70 volts
D-c plate current	66	85 milliamperes
D-c grid No. 2 current	10	10 milliamperes
D-c grid No. 1 current, approximate	3	3 milliamperes
Driving power, approximate	0.21	2.0 watts
Power output, approximate	27	16.5 watts
Maximum circuit values		
Grid—No. 1—circuit resistance [°]	30,000 max ohms	

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

#Obtained preferably from a separate source, or from the plate-supply voltage with a voltage divider, or through a series resistor of the value shown. The grid-number 2 voltage must not exceed 600 volts under key-up conditions.

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

† ICAS = Intermittent Commercial and Amateur Service.

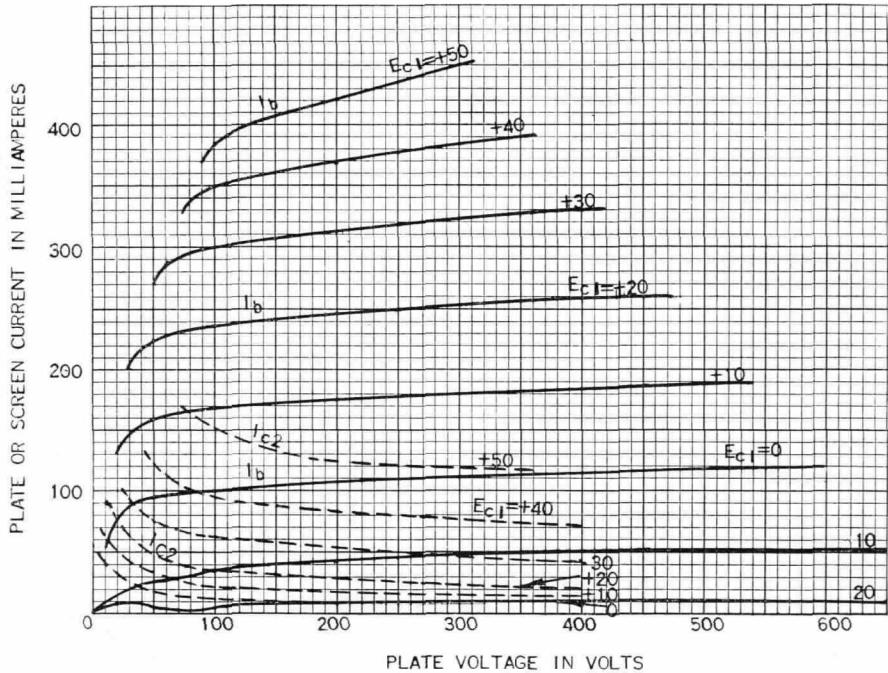
APPLICATION NOTES

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 maxi-

mum 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 plated modulated	100	83	75	68 per cent
Class C unmodulated	100	83	75	68 per cent

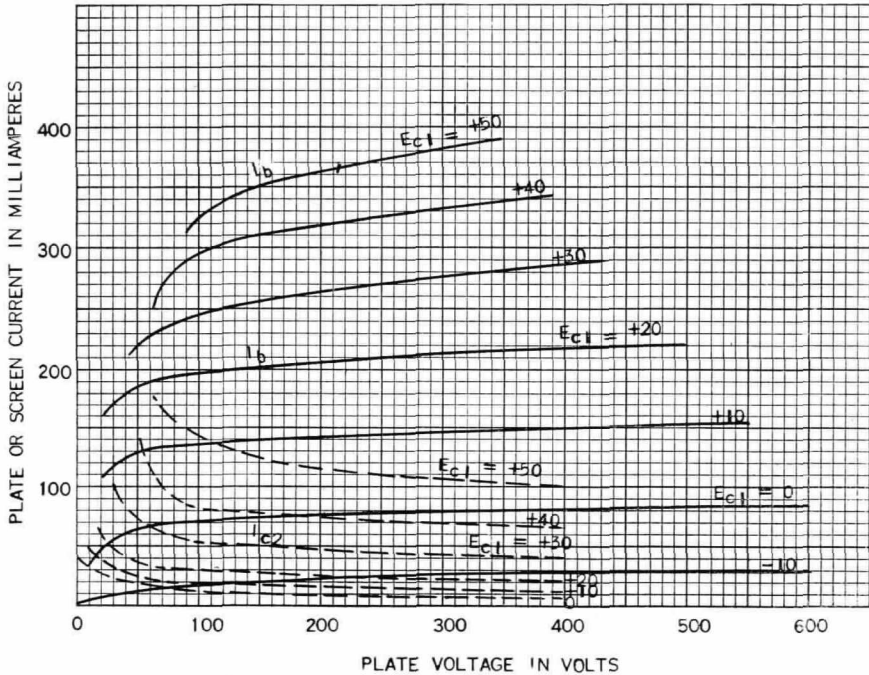
GL-2E24
AVERAGE PLATE CHARACTERISTICS
 $E_f = 6.3$ VOLTS
SCREEN VOLTAGE = 200



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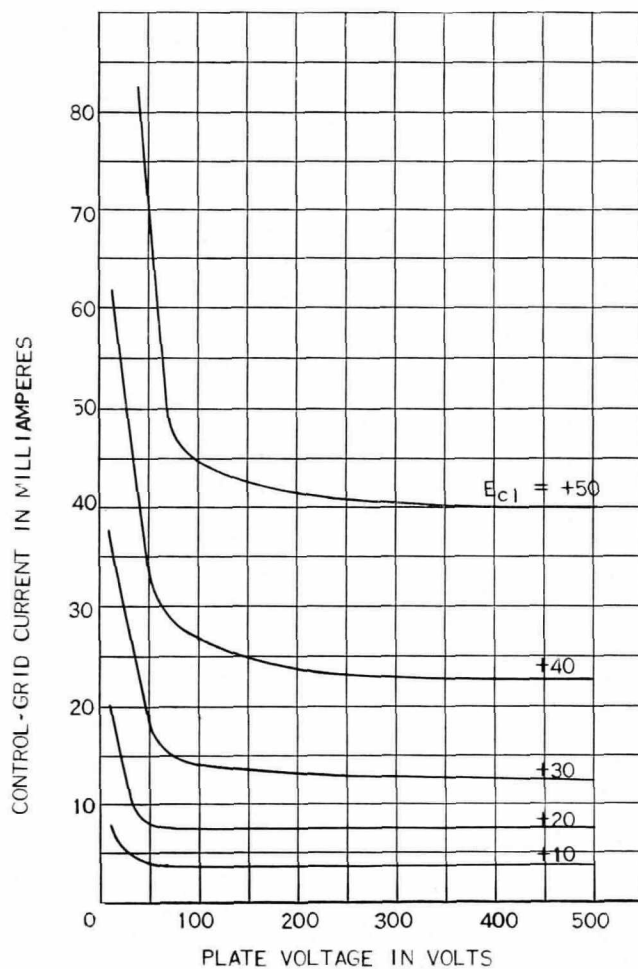
GL-2E24
AVERAGE PLATE CHARACTERISTICS
 $E_f = 6.3$ VOLTS
SCREEN VOLTAGE = 160



K-69087-72A126

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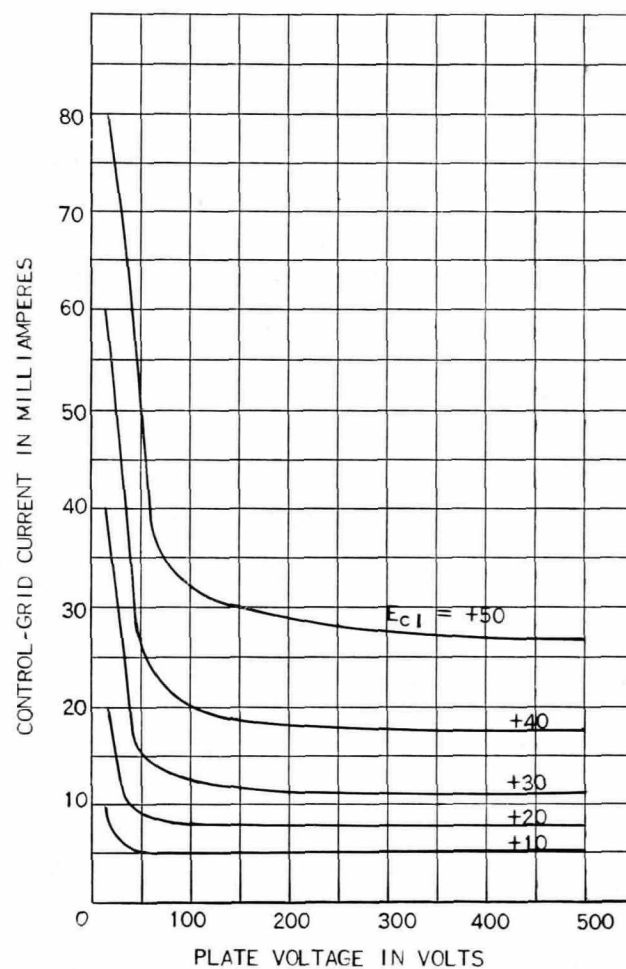
GL-2E24
AVERAGE CHARACTERISTICS
 $E_f = 6.3$ VOLTS
SCREEN VOLTAGE = 160



K-69087-72A123

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GL-2E24
AVERAGE CHARACTERISTICS
 $E_f = 6.3$ VOLTS
SCREEN VOLTAGE = 200



K-69087-72A124

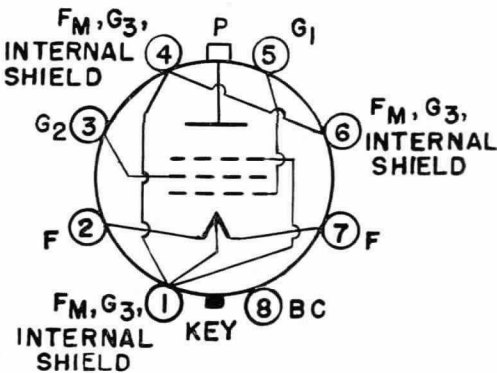
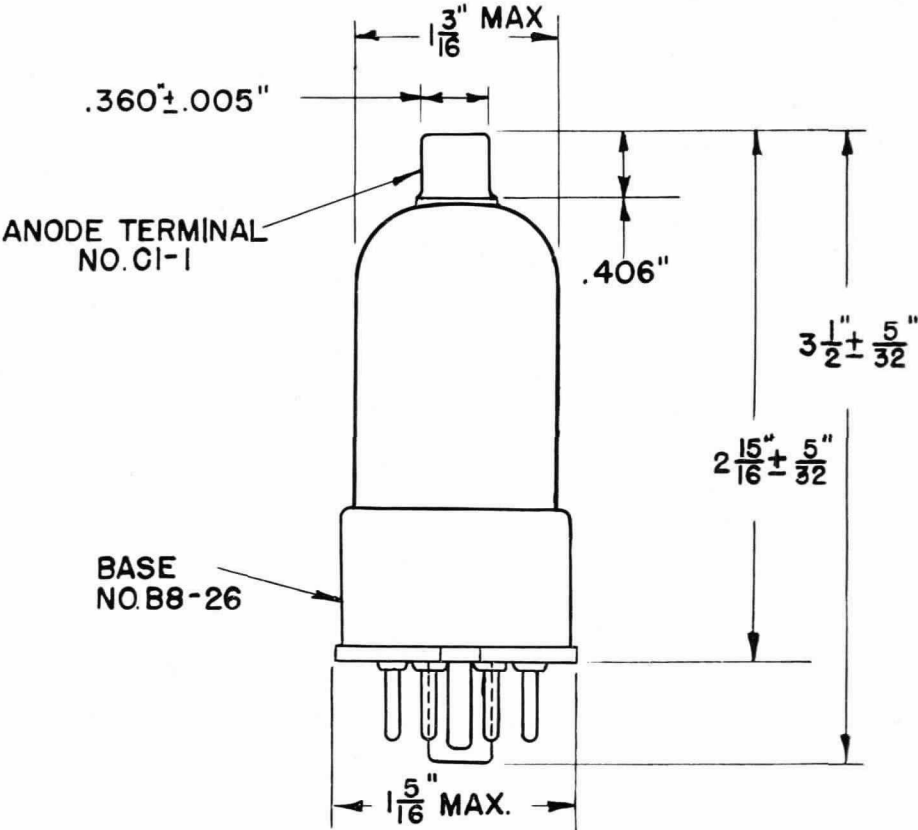
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GL-2E24

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OUTLINE
GL-2E24

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