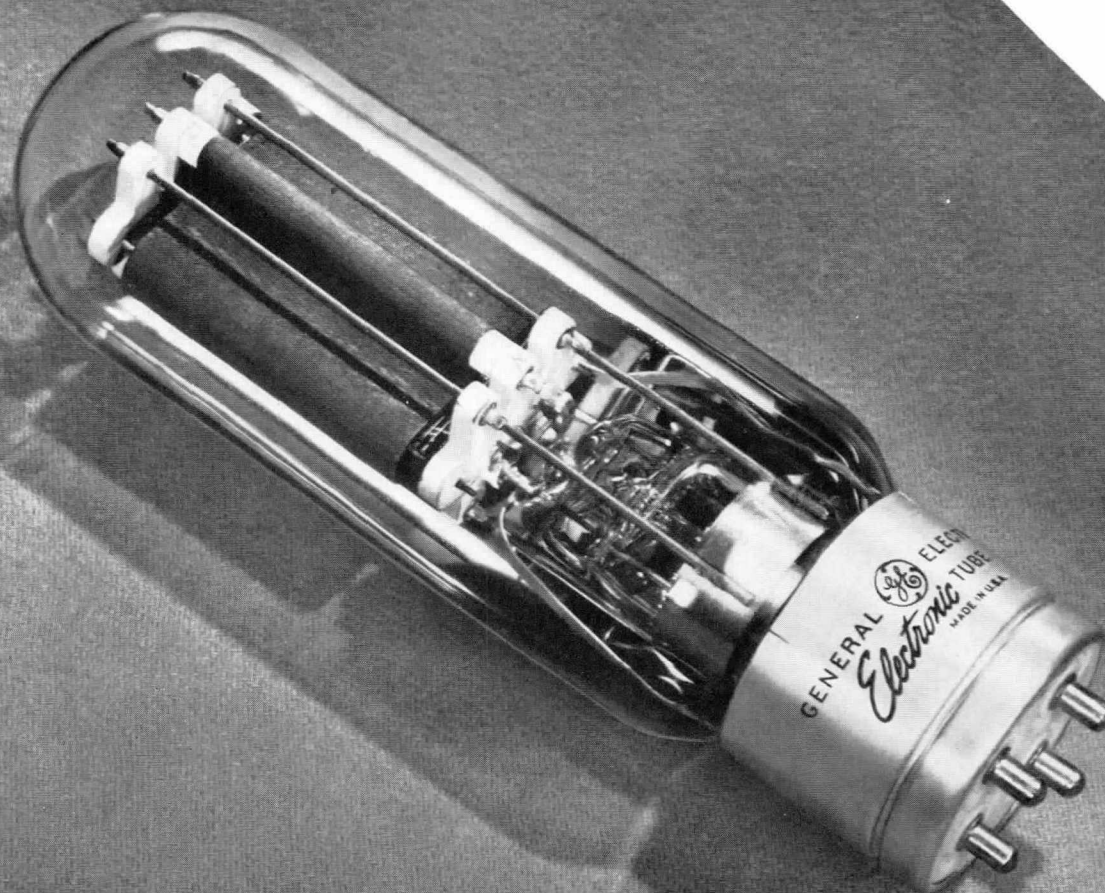




TRIODE

DESCRIPTION

The GL-242-C is a three-electrode tube designed for use as a Class B and C radio-frequency power amplifier and Class C oscillator. It also serves as an

audio-frequency amplifier or modulator (Class A or B). The GL-242-C can be operated at maximum ratings at frequencies as high as 6 megacycles.

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	10 volts
Filament current	3.25 amperes
Amplification factor ($I_b = .068$)	12.5
Grid-plate transconductance	3600 micromhos
Direct interelectrode capacitances	
Grid-plate	13 micromicrofarads
Grid-cathode	6.1 micromicrofarads
Plate-cathode	4.7 micromicrofarads
Frequency for maximum ratings	6 megacycles
Mechanical	
Base description	jumbo 4-large pin
Net weight, approx.	8 ounces
Shipping weight, approx.	4 pounds
Mounting position	vertical, base up or down—horizontal, filament in vertical plane


Electronic
TUBE

GENERAL  ELECTRIC

Supersedes ETX-136 dated 5-46

TECHNICAL INFORMATION (CONT'D)

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

CLASS A AUDIO-FREQUENCY AMPLIFIER AND MODULATOR

Maximum Ratings, Absolute Values

D-c plate voltage.....	1250 volts
Plate dissipation.....	85 watts

Typical Operation

D-c plate voltage.....	1000	1250 volts
D-c grid voltage.....	-56	-75 volts
Peak grid swing, approx.....	56	75 volts
D-c plate current.....	0.053	0.060 ampere
Plate resistance.....	3800	3600 ohms
Load resistance.....	7600	9200 ohms
Plate power output, 5 per cent second harmonic.....	12	20 watts

CLASS B AUDIO-FREQUENCY POWER AMPLIFIER (TWO TUBES)

Maximum Ratings, Absolute Values

D-c plate voltage.....	1250 volts
Max signal plate current, per tube†.....	0.150 ampere
D-c max signal plate input, per tube†.....	188 watts
Plate dissipation, per tube†.....	100 watts

Typical Operation

D-c plate voltage.....	1000	1250 volts
D-c grid voltage.....	-72	-95 volts
Peak a-f grid input voltage.....	370	400 volts
Zero signal plate current.....	0.020	0.020 ampere
Max signal plate current.....	0.300	0.300 ampere
Max signal plate input†.....	300	375 watts
Max signal driving power, approx.....	7.5	8 watts
Effective load, plate-to-plate.....	6000	7600 ohms
Max signal plate power output.....	165	200 watts

CLASS B RADIO-FREQUENCY POWER AMPLIFIER

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

Maximum Ratings, Absolute Values

D-c plate voltage.....	1250 volts
D-c plate current.....	0.150 ampere
Plate input.....	150 watts
Plate dissipation.....	100 watts

Typical Operation

D-c plate voltage.....	1000	1250 volts
D-c grid voltage.....	-72	-95 volts
D-c plate current.....	0.150	0.120 ampere
Peak r-f grid input voltage.....	135	160 volts
Driving power, approx‡.....	12	12 watts
Plate power-output.....	50	50 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

Maximum Ratings, Absolute Values

D-c plate voltage.....	1000 volts
D-c grid voltage.....	-400 volts
D-c plate current.....	0.150 ampere
D-c grid current.....	0.050 ampere
Plate input.....	150 watts
Plate dissipation.....	67 watts

Typical Operation

D-c plate voltage.....	750	1000 volts
D-c grid voltage.....	-200	-260 volts
D-c plate current.....	0.150	0.150 ampere
D-c grid current, approx.....	0.035	0.035 ampere
Peak r-f grid input voltage, approx.....	350	410 volts
Driving power, approx.....	12	14 watts
Plate power output.....	65	100 watts

TECHNICAL INFORMATION (CONT'D)

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

Key-down conditions per tube without modulation†

Maximum Ratings, Absolute Values

D-c plate voltage.....	1250 volts
D-c grid voltage.....	-400 volts
D-c plate current.....	0.150 ampere
D-c grid current, approx.....	0.050 ampere
Plate input.....	188 watts
Plate dissipation.....	100 watts

Typical Operation

D-c plate voltage.....	1000	1250 volts
D-c grid voltage.....	-175	-225 volts
D-c plate current.....	0.150	0.150 ampere
D-c grid current, approx.....	0.020	0.020 ampere
Peak r-f grid input voltage, approx.....	315	375 volts
Driving power, approx.....	6	7 watts
Plate power output.....	100	130 watts

†Average over any audio-frequency cycle.

‡At crest of audio-frequency cycle.

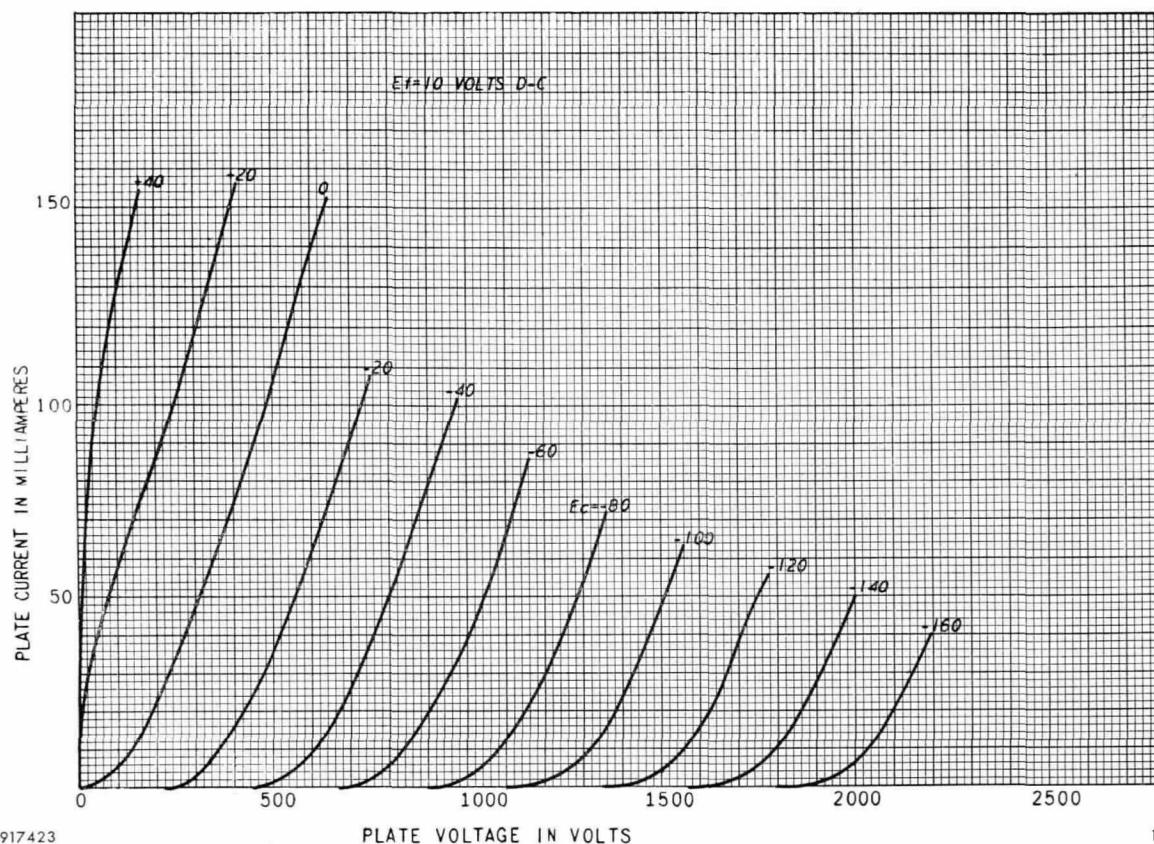
§Modulation, essentially negative, may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.

APPLICATION NOTES

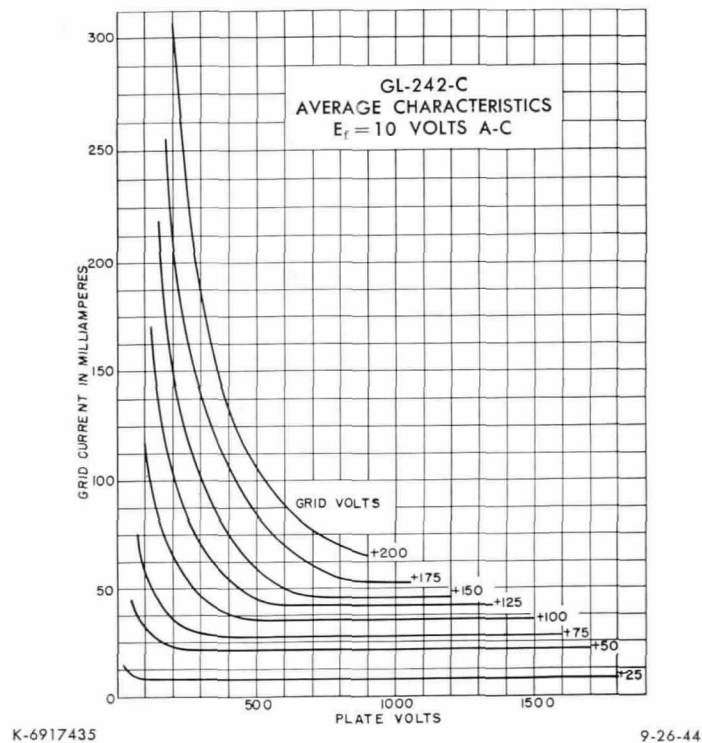
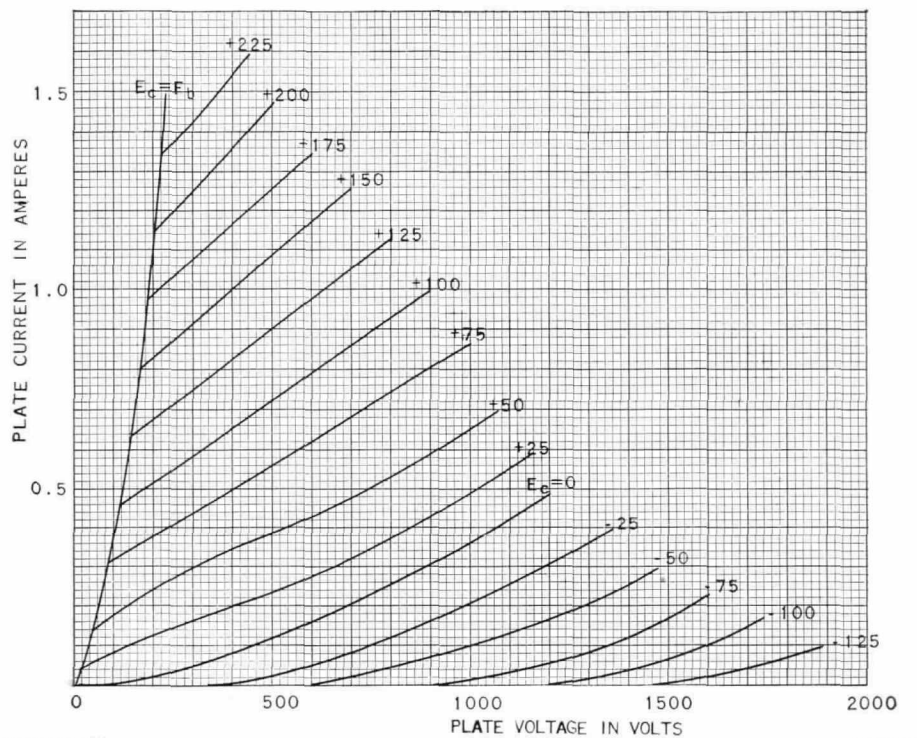
The GL-242-C can be operated at frequencies as high as 6 megacycles. The tube may be operated at higher frequencies provided that maximum values of plate voltage and power input are reduced as the frequency is raised (other maximum ratings are the same as shown above). The tabulation below shows the highest percentage of maximum plate voltage and power input that can be used up to 30 megacycles for the various classes of service. Special attention should be given to adequate ventilation of the bulb at these frequencies.

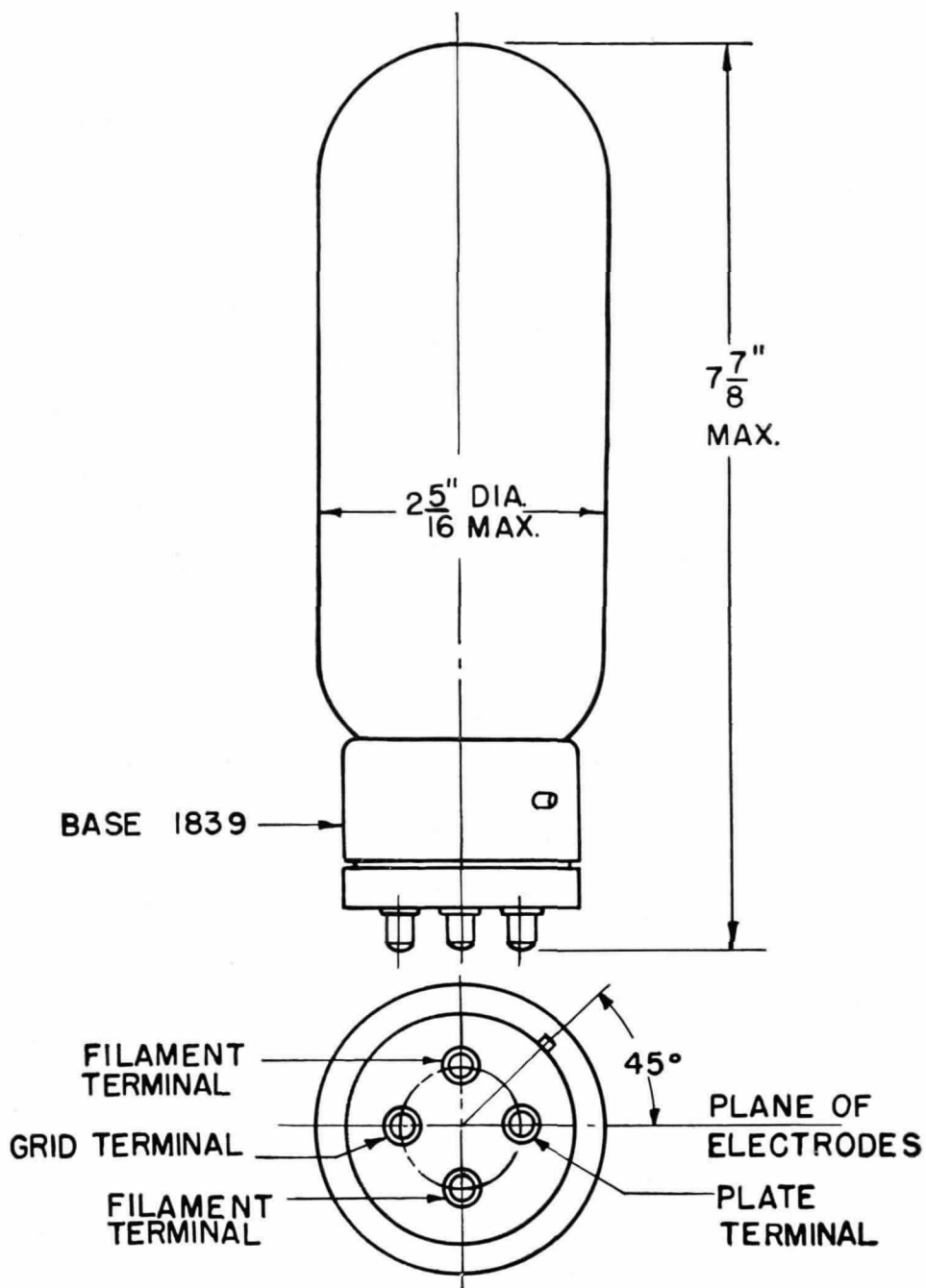
Frequency.....	6	15	30 megacycles
Maximum permissible percentage of maximum rated plate voltage and plate input:			
Class B, r-f.....	100	85	70 per cent
Class C { plate modulated.....	100	75	50 per cent
unmodulated.....			

GL-242-C AVERAGE PLATE CHARACTERISTICS



GL-242-C
AVERAGE PLATE CHARACTERISTICS
 $E_f = 10$ VOLTS A-C





GL-242-C OUTLINE

K-4909036

8-7-45

Electronics Department
GENERAL ELECTRIC
Schenectady, N. Y.