



TRIODE

DESCRIPTION

The GL-9C24 is a three-electrode tube designed for use as a grounded-grid class B r-f amplifier and class C r-f amplifier and oscillator. The anode is

water-cooled and capable of dissipating 5 kilowatts. The cathode is a pure-tungsten filament. Maximum ratings apply up to 220 megacycles.

TECHNICAL INFORMATION

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

GENERAL CHARACTERISTICS

Number of electrodes	3		
Electrical	Minimum	Bogey	Maximum
Filament voltage		6.3	6.6 volts
Filament current at 6.3 volts	230	240	250 amperes
Filament starting current			360 amperes
Filament cold resistance		0.003	ohms
Amplification factor			
$I_b = 1.0$ amp $E_c = -50$ volts	17	21	25
Interelectrode capacitances			
Grid-plate	13.8	15.7	17.6 micromicrofarads
Grid-filament	20	24	28 micromicrofarads
Grid-filament*	0.35	0.47	0.60 micromicrofarads
Frequency for maximum ratings			220 megacycles

* Measured with 10-inch outer diameter and $3\frac{5}{8}$ -inch inner diameter flat shield on grid terminal.



GENERAL ELECTRIC

TECHNICAL INFORMATION (CONT'D)

Mechanical

Mounting position.....	vertical, anode down
Type of cooling.....	water and forced air
Water flow to filament terminal†.....	0.25 gallon per minute
Water flow on anode at rated anode dissipation.....	8 gallons per minute
Maximum outgoing water temperature.....	70 centigrade
Air flow around circumference of grid-anode seal, approximate.....	10 cubic feet per minute
Air flow around circumference of grid-cathode seal, approximate.....	10 cubic feet per minute
Maximum incoming air temperature.....	45 centigrade
Maximum glass temperature.....	150 centigrade
Net weight, approximate.....	3.5 pounds

† The filament terminals must be water-cooled. The center terminal is cooled internally by injecting water at the bottom of the well in the center filament terminal. The outer terminal is cooled by a contact cooler.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

RADIO-FREQUENCY POWER AMPLIFIER—CLASS B—VIDEO SERVICE

Synchronizing peak conditions per tube in a grounded-grid circuit. 5 megacycles bandwidth

Maximum Ratings, Absolute Values.....	CCS‡	
D-c plate voltage.....	5000	volts
D-c plate current.....	2	amperes
Plate input.....	10	kilowatts
Plate dissipation.....	5	kilowatts
Typical Operation†.....	CCS	
D-c plate voltage.....	4000	volts
D-c grid voltage.....	-180	volts
Peak r-f grid voltage.....	540	volts
D-c plate current.....	1.7	amperes
D-c grid current, approximate.....	0.10	ampere
Total driving power, **approximate.....	650	watts
Power output, **approximate.....	3.4	kilowatts

‡ Continuous Commercial Service.

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

Key-down conditions per tube without modulation in a grounded-grid circuit ¶

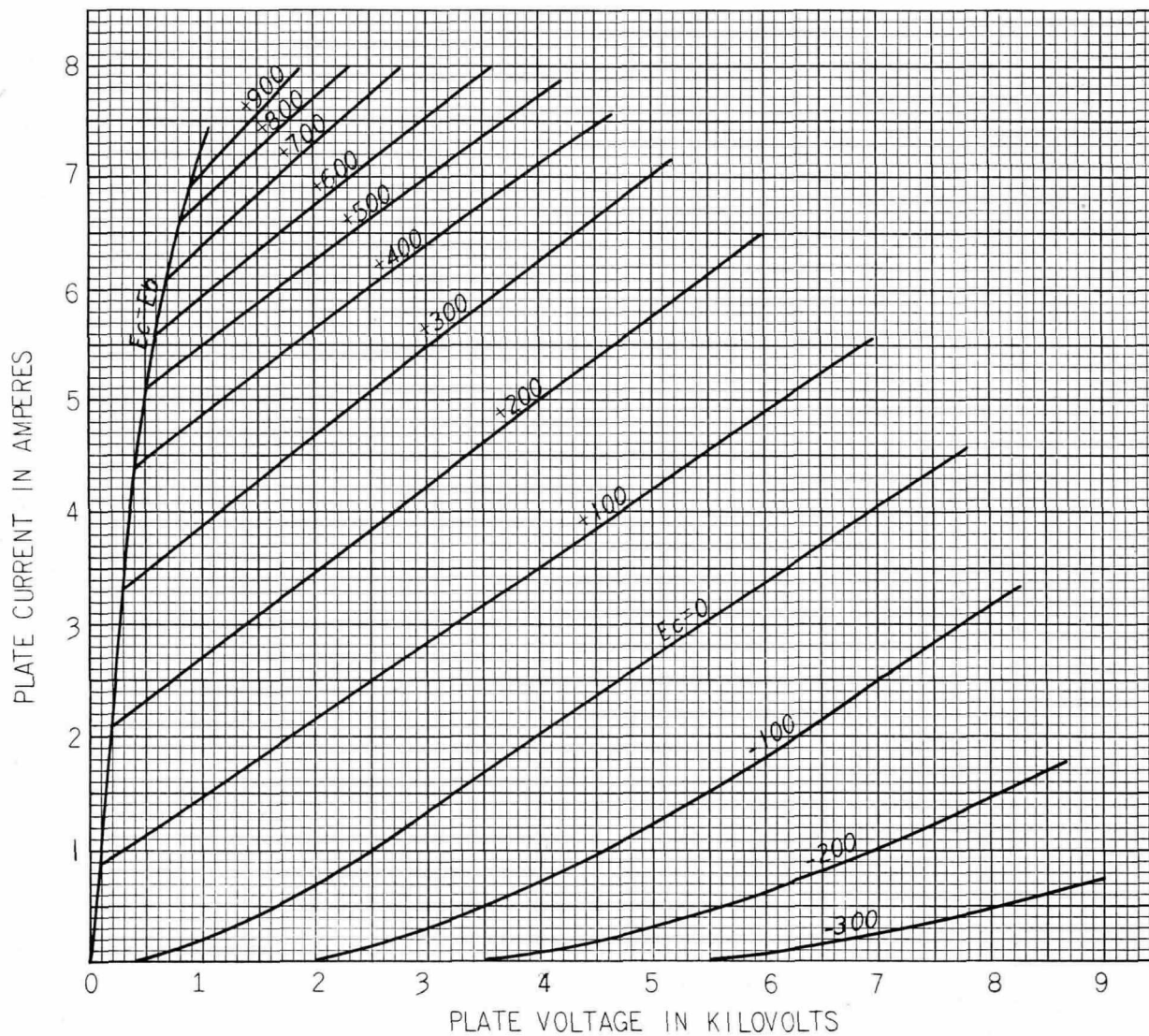
Maximum Ratings, Absolute Values.....	CCS‡	
D-c plate voltage.....	6500	volts
D-c grid voltage.....	-850	volts
D-c plate current.....	2.0	amperes
D-c grid current.....	0.25	ampere
Plate input.....	12	kilowatts
Plate dissipation.....	5	kilowatts
Typical Operation.....	CCS‡	CCS‡
D-c plate voltage.....	6000	6000 volts
D-c grid voltage.....	-680	-655 volts
Peak r-f grid voltage.....	1100	1275 volts
D-c plate current.....	1.3	1.8 amperes
D-c grid current, approximate.....	0.125	0.240 ampere
Total driving power, **approximate.....	1460	2300 watts
Power output, **approximate.....	6.4	9.0 kilowatts

** This value includes power transferred from driver to output.

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

‡ Continuous Commercial Service.

GL-9C24
AVERAGE PLATE CHARACTERISTICS
 $E_f = 6.3$ VOLTS

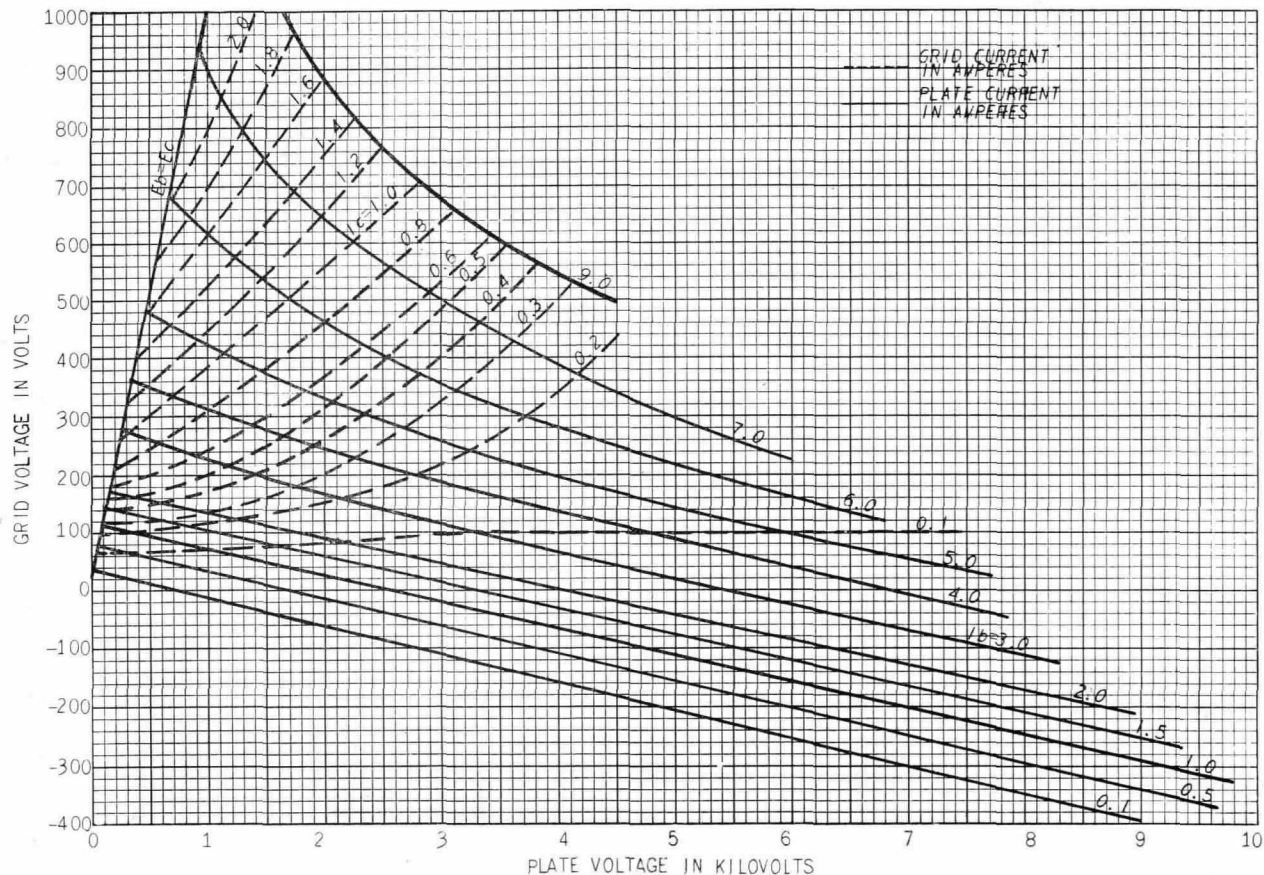


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GL-9C24 CHARACTERISTICS

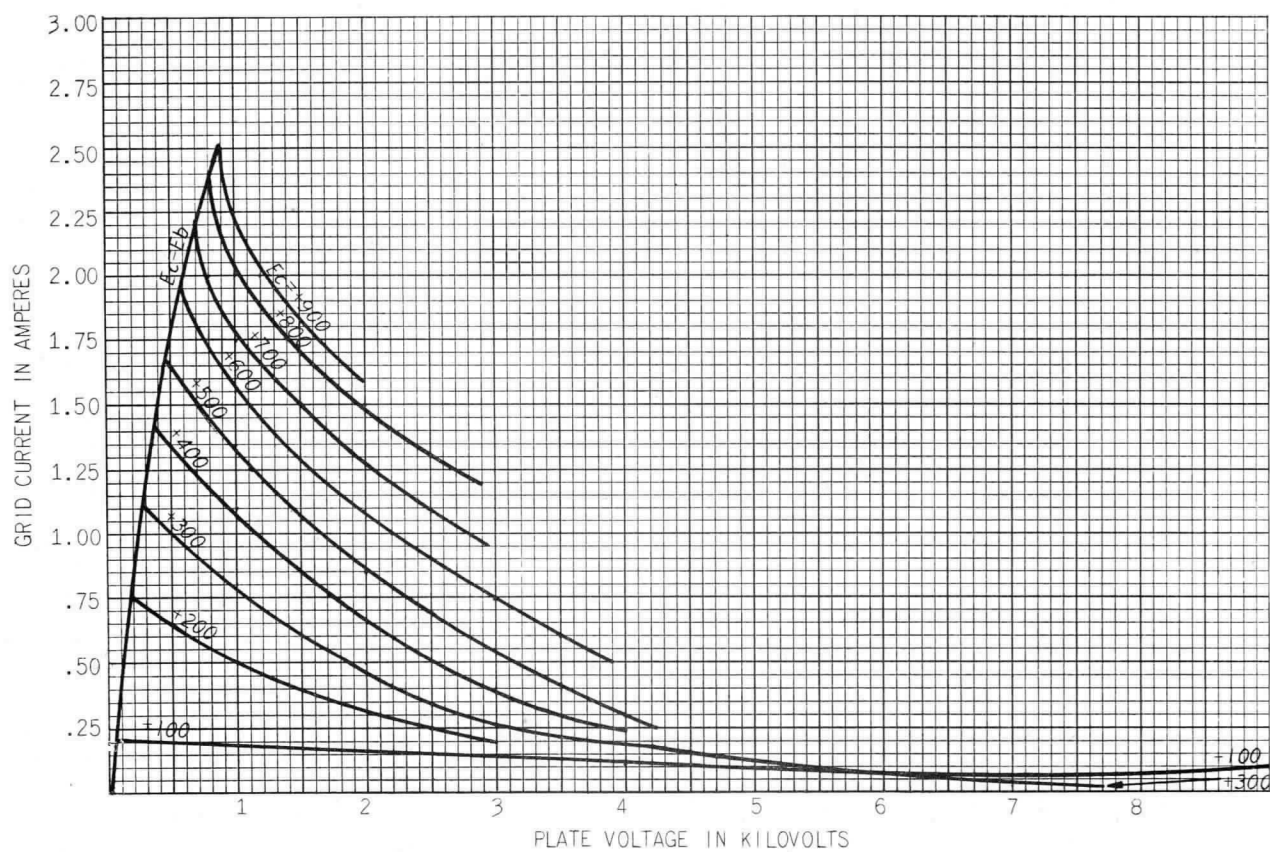
$E_f = 6.3$ VOLTS



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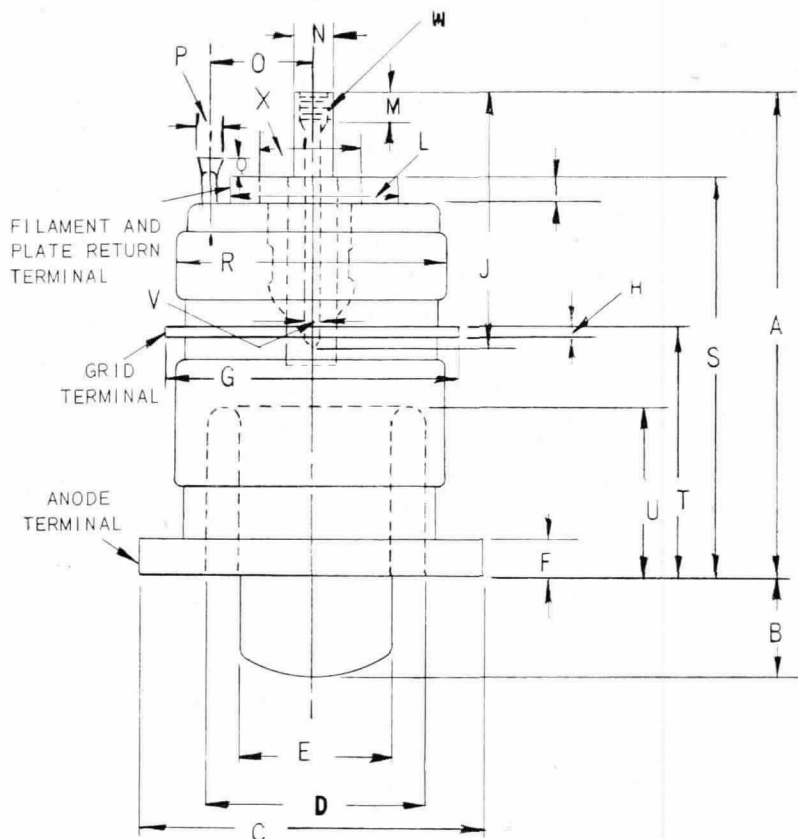
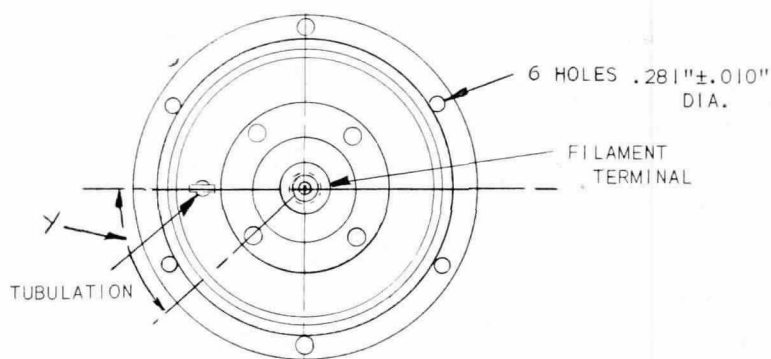
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GL-9C24 AVERAGE GRID CHARACTERISTICS
 $E_f = 6.3$ VOLTS



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DIMENSION

A	6 1/8 in. ± 5/32 in.
B	1 1/8 in. ± 1/8 in.
C	4.505 in. ± .025 in. dia.
D	2.750 in. ± .025 in. dia.
E	2.022 in. ± .030 in. dia.
F	.505 in. ± .020 in.
G***	3.875 in. ± .025 in. dia.
H	.127 ± .007 in.
J	2 1/4 in. min.
K	.375 in. .015 in.
L*	2.250 in. ± .025 in. dia.
M	5/16 in. min.
N**	.500 in. +.005 in. dia. -.004 in. dia.
O	1.344 in. ± .031
P	.437 in. max.
Q	.625 in. max.
R	3.625 in. max. dia.
S	5 1/8 in. ± 1/8 in.
T	3.312 in. ± .062 in.
U	2.000 in. min.
V	.187 in. min.
W	5/16 in.—18 thd.
X	1.375 in. ± .025 in. dia.
Y	45 deg ± 5 deg.

*Eccentricity .060 in. from center line of bolt holes in anode terminal.

**Eccentricity .060 in. from center line of bolt holes in plate-return terminal.

***Eccentricity .030 in. from center line of bolt holes in anode terminal.

GL-9C24 OUTLINE

N-20706AZ

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Holes in filament and plate-return terminal positioned to fit four No. 10-24 screws inserted 1/4 in. min. through a gage 1/8 in. thick with four .218 in. +.002 in. diameter holes located on a circle 1.812 in. ± .003 in. diameter at angles of 90 ± 0 deg 10'.

Holes in anode terminal positioned to fit six .250 in. +.002 in. diameter pins inserted to depth of flange and located on a circle 4.000 in. ± .003 in. diameter at angles of 60 ± 0 deg 10'.

Holes in anode flange not indexed with respect to holes in filament and plate-return terminal.

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