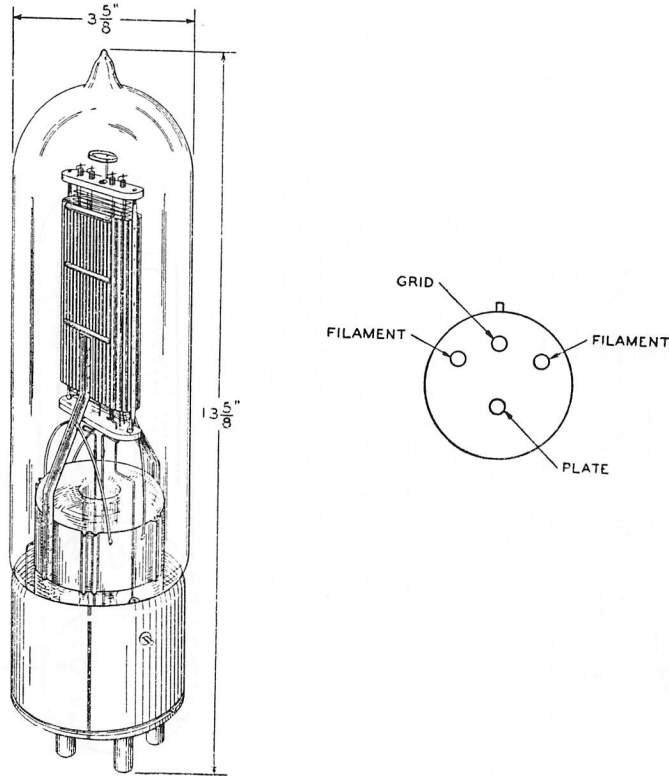


212D Vacuum Tube



Classification

The 212D Vacuum Tube is a three-element, air-cooled, general purpose tube. It may be used as an audio-frequency power amplifier or modulator.

Base and Socket

The 212D Vacuum Tube employs a four prong, bayonet pin, type base suitable for use in a Western Electric 113A or similar type socket. The arrangement of electrode connections to the base terminals is shown above.

General Ratings and Information

Filament Voltage.....	14 Volts A. C.
Nominal Filament Current.....	6 Amperes
Maximum Plate Voltage.....	2000 Volts
Maximum Plate Current.....	.300 Ampere
Average Amplification Factor.....	16
Average Plate Resistance.....	2000 Ohms
Average Mutual Conductance.....	8000 Micromhos

Approximate Direct Interelectrode Capacities

Plate to Grid.....	19 MMF.
Plate to Filament.....	12 MMF.
Grid to Filament.....	19 MMF.

***Impedance Classification**

With a plate voltage of 1500 volts grid potential at —60 volts and a filament voltage of 14, the plate current will be as follows:

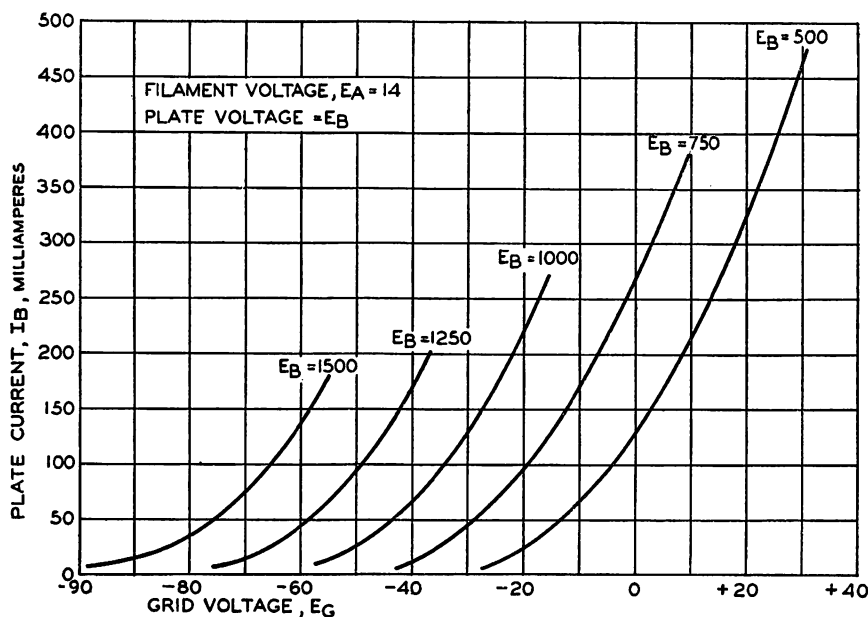
- If marked No. 1. 110–129 Milliamperes inclusive
- If marked No. 2. 130–148 Milliamperes inclusive
- If marked No. 3. 149–167 Milliamperes inclusive
- If marked No. 4. 168–185 Milliamperes inclusive

Audio-Frequency Amplifier or Modulator Rating—Peak Grid Drive Equal to or less than the Bias—Class A Service

Maximum Plate Dissipation.....	250 Watts
Plate Voltage.....	1500 Volts
Plate Current.....	.167 Ampere
Grid Bias Voltage.....	—55 Volts
Load Impedance.....	5000 Ohms
Undistorted Output.....	50 Watts

Average Static Characteristics

The accompanying curves give the static characteristics of an average 212D Vacuum Tube. These curves are taken with the filament operating on alternating current and with the plate and grid circuit returns connected to the center point of the filament transformer.



General Features

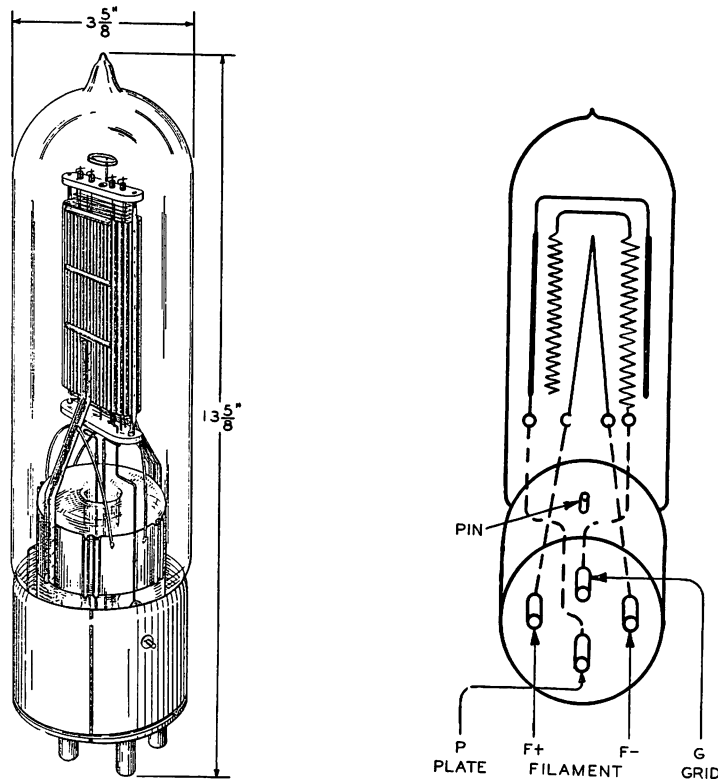
The 212D Vacuum Tube was designed primarily for audio-frequency applications or where the grid is never driven positive. For radio-frequency applications, the 270A vacuum tube is recommended because of its superior grid characteristics.

This tube employs a plate which is oxidized to improve its radiation properties. It has the highest power rating of any tube employing the efficient oxide coated type of filament.

*The impedance classification of the tube is not in any way a gradation of quality, but is to facilitate parallel operation in the ordinary system using a common grid battery. It is essential to select tubes of the same or adjacent classes in order that the load may be evenly distributed. When only single tubes are used, no one of these classes has any advantage over the other. 212D tubes cannot be ordered according to impedance classification.

212-D Vacuum Tube

Used with Western Electric Vacuum Tube Socket No. 113-A.



USE—OSCILLATOR—MODULATOR

Normal filament current.....	6.0 ± 0.3 amperes
Normal filament voltage.....	14 volts
Normal plate current for plate voltage 1500 volts and grid voltage—60 volts...	130 milliamperes
Normal plate voltage.....	1000 to 1500 volts
Maximum safe plate voltage.....	2000 volts
Normal grid voltage.....	—30 to —80 volts
Normal plate to filament impedance under conditions: plate voltage 1500 volts, grid voltage—60 volts and plate current 130 milliamperes.....	2000 ohms
Maximum safe intermittent output.....	250 watts
Maximum safe continuous output.....	200 watts
Output as unmodulated oscillator.....	250 watts
Maximum instantaneous peak voltage between filament and plate.....	3000 volts
Inter-electrode Capacitances	
Grid to filament.....	19.0 mmf.
Grid to plate.....	19.0 mmf.
Plate to filament.....	12.4 mmf.
Amplification constant.....	15 to 17

With a plate voltage at 1500 volts, the grid potential at —60 volts and the filament voltage 14: the plate current will be as follows: (See note 1).

If marked No. 1	110-129 milliamperes inclusive		
“ “ No. 2	130-148	“	“
“ “ No. 3	149-167	“	“
“ “ No. 4	168-185	“	“

NOTE

1. This classification of tubes is not in any way a gradation of quality, but is only to facilitate parallel operation in the ordinary system using a common grid battery. It is essential to select tubes of the same or adjacent classes, in order that the load may be evenly distributed. When only single tubes are used no one of these classes has any advantage over the other.

2. This tube replaces the 212-A Tube and is interchangeable with it except that it operates at a lower filament current. It has a longer life. For maximum useful life, the filament voltage should be kept as low as possible to secure the desired output and should not exceed 14 volts, since an increase of 10% in the voltage may shorten the life by as much as 50%.

The discoloration of the bulb is due to a manufacturing process and has no effect on the operation of the tube.

3. The resistance variation in the filament used in the 212-D Vacuum Tube is small enough so that division into classes according to resistance is not necessary. On all apparatus equipped with compensating resistances, the flexible lead should be connected to "E."