



12AB5

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BEAM POWER TUBE

9-PIN MINIATURE TYPE

For use in automobile radio receivers
operating from 12-volt storage batteries

GENERAL DATA

Electrical:

Heater*, for Unipotential Cathode:

Voltage range. . . . 10.0 to 15.9 dc volts

This voltage range is on an absolute basis. For longest life, it is recommended that the heater be operated within the voltage range of 11 to 14 volts.

Current (Approx.),
at 12.6 volts. . . . 0.2 amp

Direct Interelectrode Capacitances:^oGrid No.1 to plate 0.7 max. μf

Grid No.1 to cathode & grid No.3,
grid No.2, and heater. 8 μf

Plate to cathode & grid No.3,
grid No.2, and heater. 8.5 μf

Mechanical:

Mounting Position. Any

Maximum Overall Length 2-5/8"

Maximum Seated Length. 2-3/8"

Length, Base Seat to Bulb Top (Excluding tip). . . 2" $\pm$ 3/32"

Maximum Diameter 7/8"

Dimensional Outline. See General Section

Bulb T-6-1/2

Base Small-Button Noval 9-Pin (JETEC No.E9-1)

Basing Designation for BOTTOM VIEW 9EU

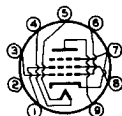
Pin 1 - Grid No.2

Pin 2 - No Connection

Pin 3 - Grid No.1

Pin 4 - Heater

Pin 5 - Heater



Pin 6 - Grid No.1

Pin 7 - Cathode, Grid No.3

Pin 8 - Grid No.2

Pin 9 - Plate

AF POWER AMPLIFIER - Class A₁

Maximum Ratings, Design-Center Values:

For application of these design-center ratings to storage-battery operation, see Operating Considerations

PLATE VOLTAGE. 315 max. volts

GRID-No.2 (SCREEN) VOLTAGE 285 max. volts

PLATE DISSIPATION. 12 max. watts

GRID-No.2 INPUT. 2 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode. . . . 90 max. volts

Heater positive with respect to cathode. . . . 90 max. volts

BULB TEMPERATURE (At hottest point
on bulb surface) 250 max. °C

* °: see next page.

SEPT. 1, 1955

TUBE DIVISION

TENTATIVE DATA 1

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



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Characteristics with 12.6 volts on heater:

Plate Voltage.	250	250	volts
Grid-No.2 Voltage.	200	250	volts
Grid-No.1 (Control-Grid) Voltage	-	-12.5	volts
Cathode-Bias Resistor.	270	-	ohms
Peak AF Grid-No.1 Voltage.	10.5	12.5	volts
Zero-Signal Plate Current.	33.5	45	ma
Max.-Signal Plate Current.	36	47	ma
Zero-Signal Grid-No.2 Current (Approx.)	1.6	4.5	ma
Max.-Signal Grid-No.2 Current (Approx.)	3.2	7	ma
Plate Resistance (Approx.)	75000	50000	ohms
Transconductance	4000	4100	μmhos
Load Resistance.	6000	5000	ohms
Total Harmonic Distortion.	8	8	%
Max.-Signal Power Output	3.3	4.5	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

PUSH-PULL AF POWER AMPLIFIER - Class AB₁

Maximum Ratings, Design-Center Values:

For application of these design-center ratings to storage-battery operation, see Operating Considerations

PLATE VOLTAGE.	315 max.	volts
GRID-No.2 (SCREEN) VOLTAGE	285 max.	volts
PLATE DISSIPATION.	12 max.	watts
GRID-No.2 INPUT.	2 max.	watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode.	90 max.	volts
Heater positive with respect to cathode.	90 max.	volts
BULB TEMPERATURE (At hottest point on bulb surface)	250 max.	°C

Characteristics with 12.6 volts on heater:

Values are for 2 tubes

Plate Voltage.	250	volts
Grid-No.2 Voltage.	250	volts
Grid-No.1 (Control-Grid) Voltage	-15	volts
Peak Af Grid-No.1-to- Grid-No.1 Voltage	30	volts
Zero-Signal Plate Current.	70	ma
Max.-Signal Plate Current.	79	ma

- Operation of heater in series with other heaters is not recommended.
- without external shield.

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Zero-Signal Grid-No.2 Current (Approx.) . .	5	ma
Max.-Signal Grid-No.2 Current (Approx.) . .	13	ma
Effective Load Resistance (Plate to plate)	10000	ohms
Total Harmonic Distortion.	5	%
Max.-Signal Power Output	10	watts

Maximum Circuit Values:**Grid-No.1-Circuit Resistance:**

For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

OPERATING CONSIDERATIONS

The *maximum ratings* in the tabulated data for the 12AB5 are working design-center maximums established according to the standard design-center system of rating electron tubes. Tubes so rated will give satisfactory performance in storage-battery-operated equipment provided the following stipulations are observed:

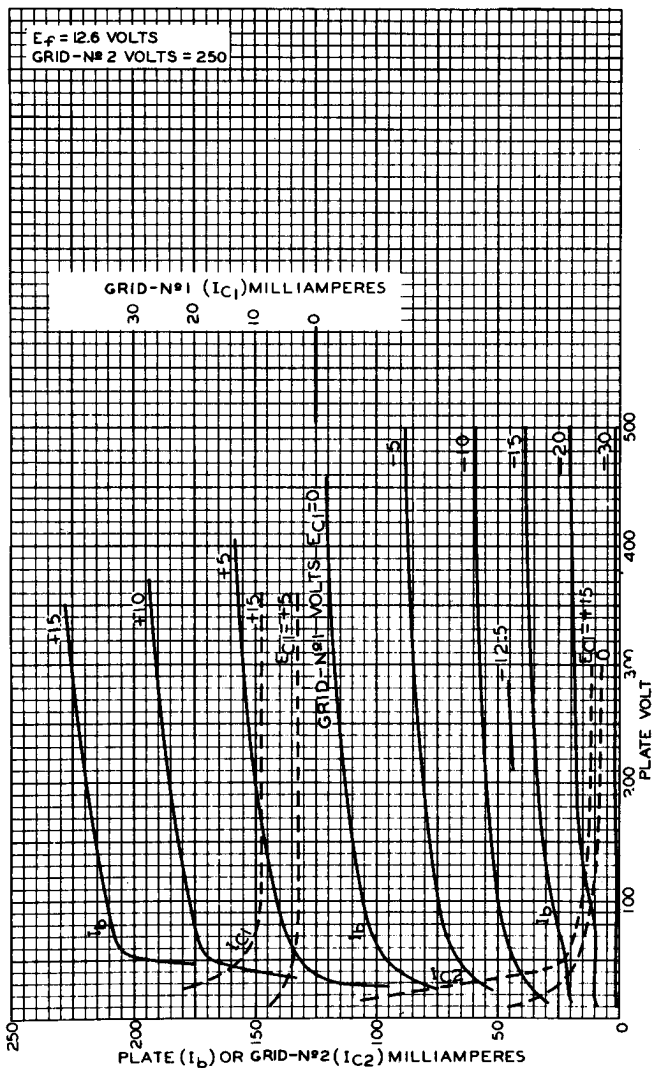
In the case of storage-battery-with-charger supply or similar supplies, the normal battery-voltage fluctuation may be as much as 35 per cent or more. This fluctuation imposes severe operating conditions on tubes. Under these conditions, the equipment should be designed so that 90 per cent of the design-center maximum values of plate voltage, grid-No.2 voltage, plate dissipation, and grid-No.2 input is never exceeded for a battery terminal potential of 13.2 volts. Although the operating voltages of the 12AB5 in this service will, at times, exceed the design-center maximum values, satisfactory performance with probable sacrifice in life will be obtained.

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AVERAGE CHARACTERISTICS



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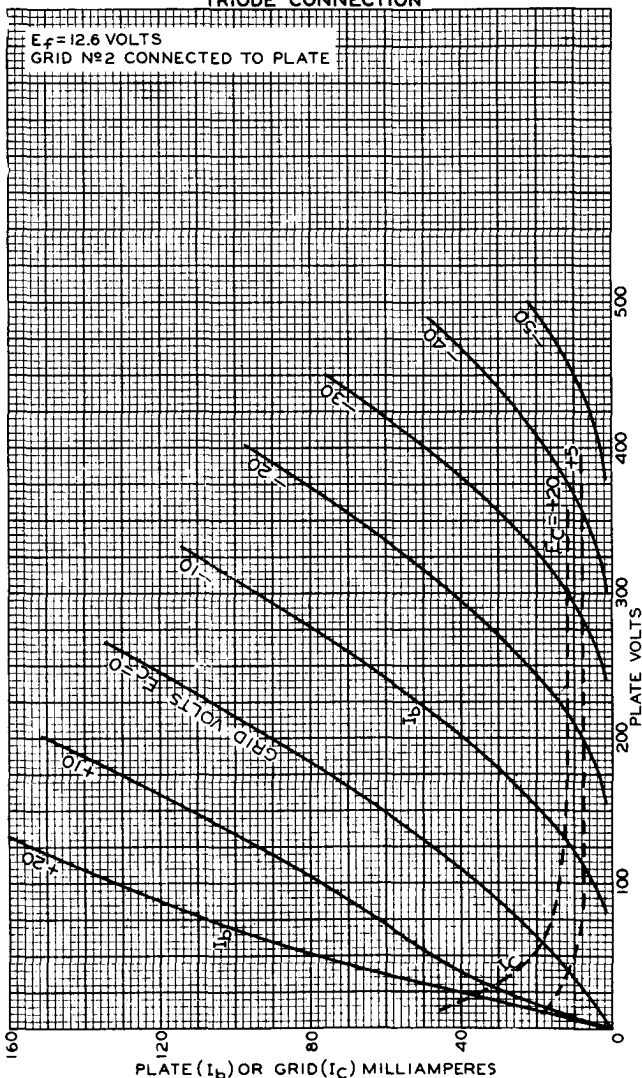


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AVERAGE CHARACTERISTICS TRIODE CONNECTION

$E_f = 12.6$ VOLTS
GRID N°2 CONNECTED TO PLATE



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PLATE (I_b) OR GRID (I_c) MILLIAMPERES

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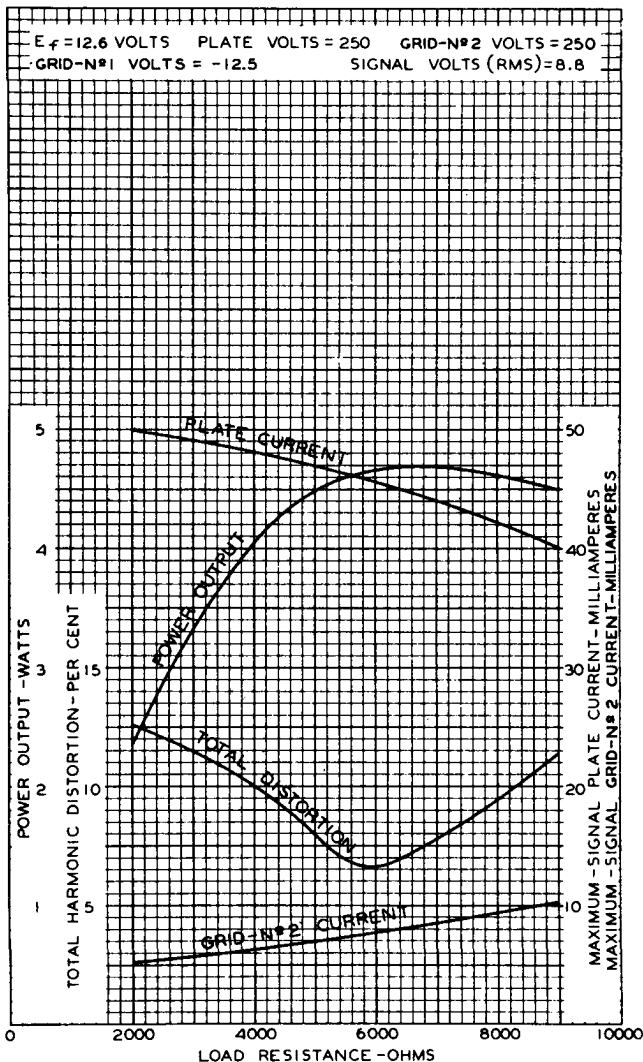
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OPERATION CHARACTERISTICS



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