



12AQ5

## BEAM POWER AMPLIFIER

MINIATURE TYPE

12AQ5

## GENERAL DATA

## Electrical:

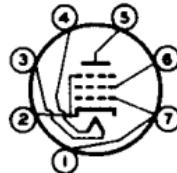
Heater, for Unipotential Cathode:	
Voltage . . . . .	12.6 . . . . . ac or dc volts
Current . . . . .	0.225 . . . . . amp
Direct Interelectrode Capacitances (Approx., without external shield):	
Grid No.1 to Plate . . .	0.35 . . . . . $\mu\text{f}$
Input . . . . .	8.3 . . . . . $\mu\text{f}$
Output . . . . .	8.2 . . . . . $\mu\text{f}$

## 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 . . . . .	3/4"
Bulb . . . . .	T-5-1/2
Base . . . . .	Small-Button Miniature 7-Pin (JETEC No.E7-1)

## BOTTOM VIEW

- Pin 1 - Grid No.1
- Pin 2 - Grid No.3,  
Cathode
- Pin 3 - Heater



- Pin 4 - Heater
- Pin 5 - Plate
- Pin 6 - Grid No.2
- Pin 7 - Grid No.1

AF POWER AMPLIFIER - Class A<sub>1</sub>

## Maximum Ratings, Design-Center Values:

PLATE VOLTAGE . . . . .	250 max. volts
GRID-No.2 (SCREEN) VOLTAGE . . . . .	250 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

## Typical Operation and Characteristics:

Plate Voltage . . . . .	180	250	volts
Grid-No.2 Voltage . . . . .	180	250	volts
Grid-No.1 (Control- Grid) Voltage . . . . .	-8.5	-12.5	volts
Peak AF Grid-No.1 Voltage . . . . .	8.5	12.5	volts
Zero-Signal Plate Current . . . . .	29	45	ma
Max.-Signal Plate Current . . . . .	30	47	ma

\* See next page.

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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Zero-Signal Grid-No.2 Current (Approx.) . . . . .	3	4.5	ma
Max.-Signal Grid-No.2 Current (Approx.) . . . . .	4	7	ma
Plate Resistance (Approx.) . . . . .	58000	52000	ohms
Transconductance . . . . .	3700	4100	$\mu$ hos
Load Resistance . . . . .	5500	5000	ohms
Total Harmonic Distortion . . . . .	8	8	per cent
Max.-Signal Power Output . . . . .	2.0	4.5	watts

## Maximum Circuit Values:

## Grid-No.1-Circuit Resistance:

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

## AF POWER AMPLIFIER - Class AB

## Maximum Ratings, Design-Center Values:

PLATE VOLTAGE . . . . .	250 max.	volts
GRID-No.2 (SCREEN) VOLTAGE . . . . .	250 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
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## Typical Operation:

Unless otherwise indicated, 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
Zero-Signal Grid-No.2 Current (Approx.) . . . . .	5	ma
Max.-Signal Grid-No.2 Current (Approx.) . . . . .	13	ma
Plate Resistance (Approx. per tube) . . . . .	60000	ohms
Transconductance (Per tube) . . . . .	3750	$\mu$ hos
Effective Load Resistance (Plate to plate) . . . . .	10000	ohms
Total Harmonic Distortion . . . . .	5	per cent
Max.-Signal Power Output . . . . .	10	watts

- High ambient temperature and shielding may necessitate a reduction in operating dissipation. When tube shields are used, it is advisable to paint the inside and outside surfaces of the tube shield a dull black and to provide ventilation slots to reduce operating temperature.

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Maximum Circuit Values Per Tube:<sup>▲</sup>Grid-No.1-Circuit Resistance:<sup>\*</sup>

For fixed bias . . . . . 0.1 max. megohm

For cathode bias . . . . . 0.5 max. megohm

\* The type of input coupling used should not introduce too much resistance in the grid-No.1 circuit. Transformer- or impedance-coupling devices are recommended.

▲ If the grid-No.1-circuit resistance is common to two tubes, the indicated maximum values per tube should be halved.

*Curves shown under Type 6V6 also apply to 12AQ5*