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# BEAM POWER TUBE

9-PIN MINIATURE TYPE

For use in mobile communications equipment  
operating from 6-cell storage-battery systems

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

Voltage range. . . . . 12 to 15 . . . . . ac or dc volts

Current (Approx.) at

13.5 volts . . . . . 0.21 . . . . . amp

Direct Interelectrode Capacitances:<sup>o</sup>

Grid No.1 to plate . . . . . 0.7 max.  $\mu\mu\text{f}$

Grid No.1 to all other electrodes

except plate . . . . . 8  $\mu\mu\text{f}$

Plate to all other electrodes

except grid No.1 . . . . . 8.5  $\mu\mu\text{f}$

### Mechanical:

Operating 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"

Diameter . . . . . 0.750" to 0.875"

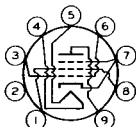
Dimensional Outline. . . . . See General Section

Bulb . . . . . T6-1/2

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

## AMPLIFIER — Class A<sub>1</sub>

### Maximum Ratings, Absolute Values:

PLATE VOLTAGE . . . . . 345 max. volts

GRID-No.2 (SCREEN-GRID) VOLTAGE . . . . . 310 max. volts

GRID-No.2 INPUT . . . . . 2 max. watts

PLATE DISSIPATION . . . . . 9 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode 120 max. volts

Heater positive with respect to cathode 120 max. volts

### Typical Operation and Characteristics:

Heater Voltage. . . . . 13.5 volts

Plate Voltage . . . . . 200 volts

Grid-No.2 Voltage . . . . . 200 volts

Grid-No.1 (Control-Grid) Voltage. . . . . -10 volts

<sup>o</sup> Without external shield.



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Peak AF Grid-No.1 Voltage . . . . .	10	volts
Zero-Signal Plate Current . . . . .	35.5	ma
Max.-Signal Plate Current . . . . .	38	ma
Zero-Signal Grid-No.2 Current . . . . .	9	ma
Max.-Signal Grid-No.2 Current . . . . .	7.5	ma
Plate Resistance (Approx.) . . . . .	60000	ohms
Transconductance . . . . .	4200	$\mu$ hos
Load Resistance . . . . .	5000	ohms
Total Harmonic Distortion . . . . .	7	%
Max.-Signal Power Output . . . . .	3	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

### CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	Min.	Max.	
Heater Current . . . . .	1	0.19	0.23	amp
Transconductance . . . . .	1,2	3100	5800	$\mu$ hos
Plate Current . . . . .	1,2	26	45	ma
Grid-No.2 Current . . . . .	1,2	-	6.5	ma
Reverse Grid-No.1 Current . . . . .	1,3	-	-2	$\mu$ a
Power Output . . . . .	1,4	2.4	-	watts
Heater-Cathode Leakage Current:				
Heater negative with respect to cathode . . . . .	1,5	-	50	$\mu$ a
Heater positive with respect to cathode . . . . .	1,5	-	50	$\mu$ a
Leakage Resistance:				
Between grid No.1 and all other electrodes tied together . . . . .	1,6	50	-	megohms
Between plate and all other electrodes tied together . . . . .	1,7	50	-	megohms

Note 1: With ac or dc heater volts = 13.5.

Note 2: With dc plate volts = 200, grid-No.2 volts = 200, grid-No.1 volts = -10, and grid No.3 connected to cathode.

Note 3: With grid-No.1 resistor (megohms) = 0.1.

Note 4: With load resistor (ohms) = 5000, and rms signal volts = 7.1.

Note 5: With 100 volts dc between heater and cathode.

Note 6: With grid No.1 100 volts negative with respect to all other electrodes tied together.

Note 7: With plate 300 volts negative with respect to all other electrodes tied together.

### SPECIAL RATINGS & PERFORMANCE DATA

#### Heater-Cycling Life Performance:

This test is performed on a sample lot of tubes from each production run. A minimum of 2000 cycles of intermittent



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operation is applied under the following conditions: heater volts = 17 cycled one minute on and four minutes off, heater 135 volts negative with respect to cathode, and all other elements connected to ground. At the end of this test, tubes are checked for heater-cathode shorts and open circuits.

### **Low-Frequency Vibration Performance:**

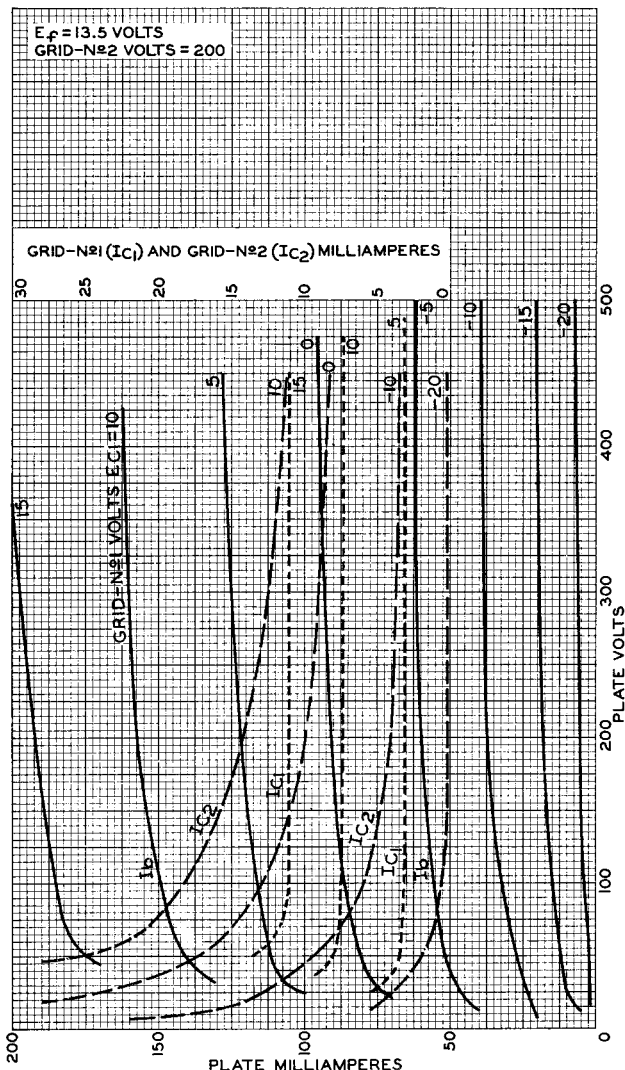
This test is performed on a sample lot of tubes from each production run under the following conditions: heater volts = 13.5, plate volts = 200, grid-No.2 volts = 200, grid-No.1 volts = -10, plate load resistor (ohms) = 2000, and vibrational acceleration of 2.5 g at 25 cps. In this test, the rms output voltage must not exceed 500 millivolts.

### **500-Hour Intermittent Life Performance:**

This test is performed on a sample lot of tubes from each production run to insure high quality of the individual tube and to guard against epidemic failures. Life testing is conducted under the following conditions: heater volts = 15, and maximum-rated plate dissipation and grid-No.2 input.



## AVERAGE CHARACTERISTICS



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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

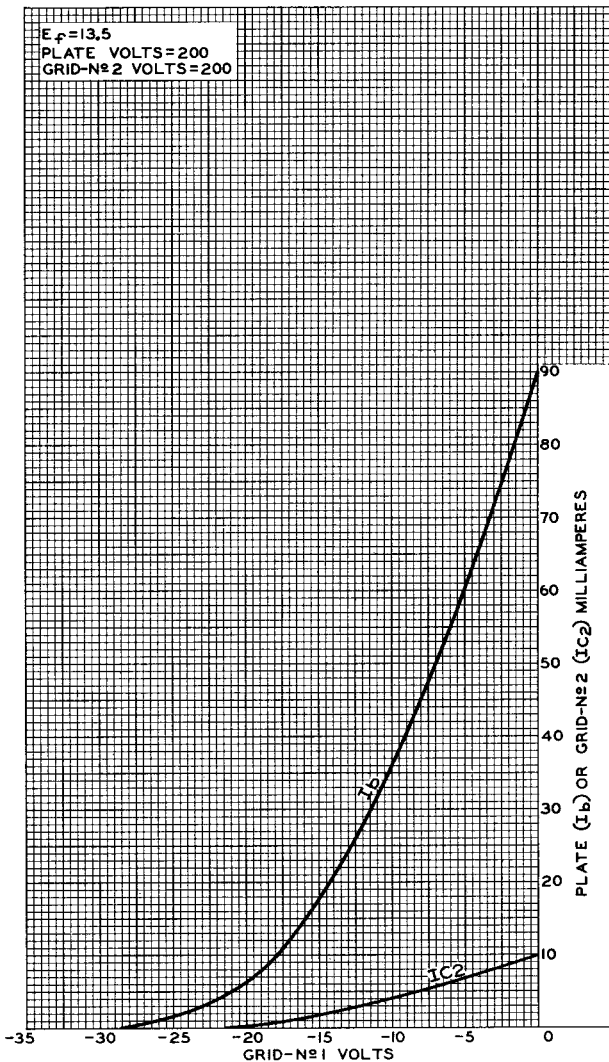
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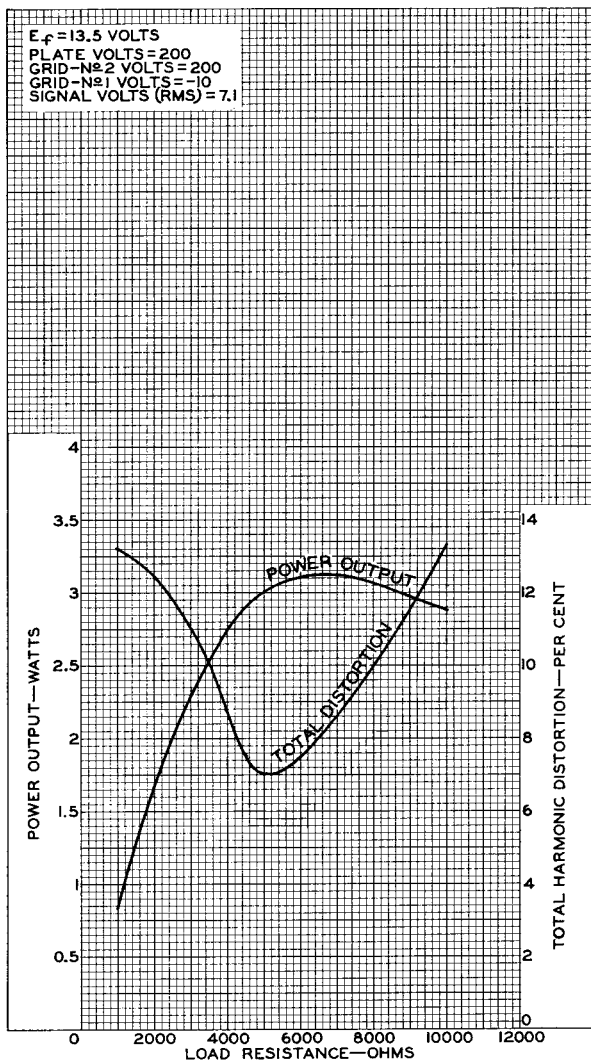


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## OPERATION CHARACTERISTICS





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### AVERAGE CHARACTERISTICS TRIODE CONNECTION

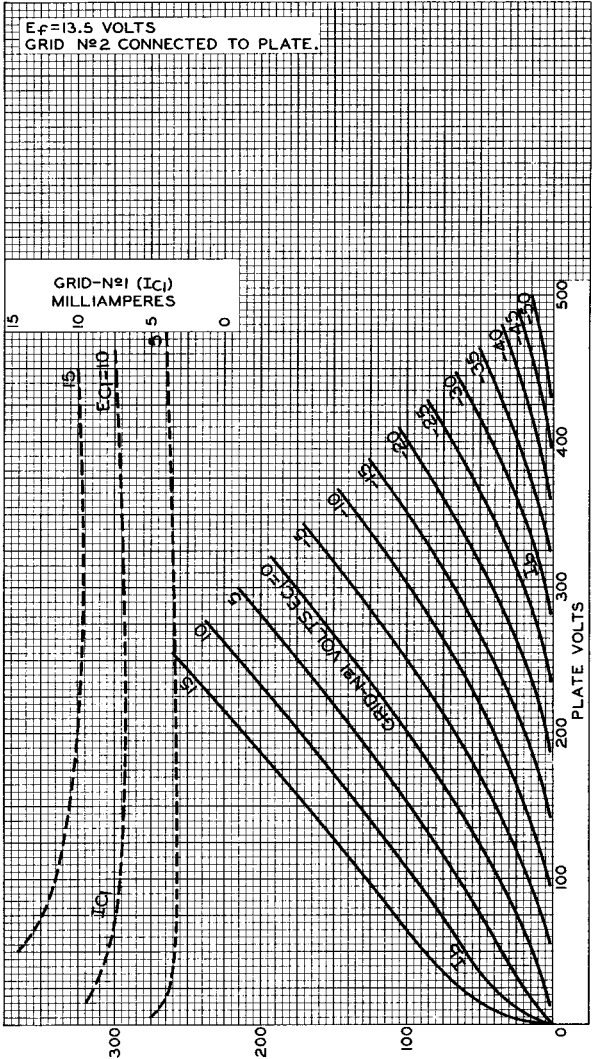


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