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:
  Grid No.1 to plate .......... 0.7 max. \( \mu \)f
  Grid No.1 to all other electrodes except plate .......... 8 \( \mu \)f
  Plate to all other electrodes except grid No.1 .......... 8.5 \( \mu \)f

Mechanical:

Operating Position .................. Any
Maximum Overall Length ............. 2-5/8"
Maximum Seated Length ............. 2-3/16"
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

AMPLIFIER — Class A

Maximum Ratings, Absolute Values:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATE VOLTAGE</td>
<td>345 max.</td>
</tr>
<tr>
<td>GRID-No.2 (SCREEN-GRID) VOLTAGE</td>
<td>310 max.</td>
</tr>
<tr>
<td>GRID-No.2 INPUT</td>
<td>2 max.</td>
</tr>
<tr>
<td>PLATE DISSIPATION</td>
<td>9 max.</td>
</tr>
<tr>
<td>PEAK HEATER—CATHODE VOLTAGE:</td>
<td></td>
</tr>
<tr>
<td>Heater negative with respect to cathode</td>
<td>120 max.</td>
</tr>
<tr>
<td>Heater positive with respect to cathode</td>
<td>120 max.</td>
</tr>
</tbody>
</table>

Typical Operation and Characteristics:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage</td>
<td>13.5</td>
</tr>
<tr>
<td>Plate Voltage</td>
<td>200</td>
</tr>
<tr>
<td>Grid-No.2 Voltage</td>
<td>200</td>
</tr>
<tr>
<td>Grid-No.1 (Control-GRID) Voltage</td>
<td>-10</td>
</tr>
</tbody>
</table>

\( \mu \): Without external shield.

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TENTATIVE DATA
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 μmhos
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

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Note</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Current</td>
<td>1</td>
<td>0.19</td>
<td>0.23</td>
</tr>
<tr>
<td>Transconductance</td>
<td>1,2</td>
<td>3100</td>
<td>5800</td>
</tr>
<tr>
<td>Plate Current</td>
<td>1,2</td>
<td>26</td>
<td>45</td>
</tr>
<tr>
<td>Grid-No.2 Current</td>
<td>1,2</td>
<td>-</td>
<td>6.5</td>
</tr>
<tr>
<td>Reverse Grid-No.1 Current</td>
<td>1,3</td>
<td>-</td>
<td>-2</td>
</tr>
<tr>
<td>Power Output</td>
<td>1,4</td>
<td>2.4</td>
<td>-</td>
</tr>
</tbody>
</table>
| Heater-Cathode Leakage Current:
  Heater negative with respect to cathode | 1,5  | -    | 50     |
  Heater positive with respect to cathode | 1,5  | -    | 50     |
| 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
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

$E_C = 13.5$ VOLTS
GRID-$N^{\#2}$ VOLTS $= 200$

GRID-$N^{\#1}$ ($I_C^1$) AND GRID-$N^{\#2}$ ($I_C^2$) MILLIAMPERES

PLATE MILLIAMPERES

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92CM-9802
$\varepsilon_f = 13.5$

Plate Volts = 200

Grid-№2 Volts = 200
E.F. = 13.5 VOLTS
PLATE VOLTS = 200
GRID-NO. 2 VOLTS = 200
GRID-NO. 1 VOLTS = -10
SIGNAL VOLTS (RMS) = 7.1
AVERAGE CHARACTERISTICS
TRIODE CONNECTION

$E_f = 13.5$ VOLTS
GRID NO. 2 CONNECTED TO PLATE.

GRID NO. 1 ($I_{C1}$)
MILLIAMPERES

PLATE MILLIAMPERES
ELECTRON TUBE DIVISION

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92CM-9801