MECHANICAL DATA

Bulb ........................................... T-12
Base ............................................ Short Shell Octal 6-Pin
Outline ......................................... See Drawing
Basing ........................................... Modified 7S
Mounting Position ......................... Any
Cathode ......................................... Coated Unipotential

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage .................................. 6.3 Volts
Heater Current .................................. 1600 Ma
Maximum Heater-Cathode Voltage
Heater Negative with Respect to Cathode
Total DC and Peak .................................. 200 Volts
Heater Positive with Respect to Cathode
DC .................................................. 100 Volts
Total DC and Peak .................................. 200 Volts

DIRECT INTERELECTRODE CAPACITANCES

Grid No. 1 to Plate .................................. 0.9 pf
Input ............................................. 22 pf
Output ............................................ 9.0 pf

RATINGS (Design Maximum Values)

Plate Voltage ..................................... 660 Volts Max.
Grid No. 2 Voltage .................................. 500 Volts Max.
Plate Dissipation1 .................................. 35 Watts Max.
Grid No. 2 Dissipation2 .................................. 5 Watts Max.
Cathode Current ................................... 200 Ma Max.
Grid No. 1 Circuit Resistance
Fixed Bias ........................................... 0.1 Megohm Max.
Cathode Bias ....................................... 0.25 Megohms Max.

AVERAGE CHARACTERISTICS

Plate Voltage ..................................... 300 Volts
Grid No. 2 Voltage .................................. 300 Volts
Grid No. 1 Voltage .................................. −12 Volts
Plate Current ..................................... 100 Ma
Grid No. 2 Current .................................. 5.5 Ma
Transconductance .................................. 23,000 μmhos
Plate Resistance .................................. 16,000 Ohms
Amplification Factor (Triode Connected) ....... 16.5
Grid Voltage for Ib = 1 Ma ......................... −37 Volts

TYPICAL OPERATION

Class AB1 Ultra-Linear Push-Pull3

Values for
2 Tubes

Plate Supply Voltage ................................ 445 Volts
Grid No. 1 Voltage .................................. −25 Volts
Peak AF Grid to Grid Voltage ....................... 45 Volts
Zero Signal Plate Current ................................ 146 Ma
Maximum Signal Plate Current ....................... 314 Ma
Effective Load (Plate to Plate) ..................... 3500 Ohms
Total Harmonic Distortion .......................... 2.5 Percent
Maximum Signal Power Output ..................... 70 Watts

The Sylvania Type 8417 is a beam-power pentode featuring a T-12 bulb and an octal 6-pin base. It is intended for service in high power, high-fidelity audio equipment and is capable of 100 watts output in push-pull circuitry. It also finds application as a regulator tube.

SYLVANIA ELECTRIC PRODUCTS INC.

Electronic Components Group
ELECTRONIC TUBE DIVISION
EMPORIUM, PA.

A Technical Publication
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PAGE 1 OF 4
For Under
RECEIVING TUBES
TYPICAL OPERATION (Cont'd)

Class AB1 Pentode Connected

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Values for 2 Tubes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Supply Voltage</td>
<td>400 560 Volts</td>
</tr>
<tr>
<td>Grid No. 2 Supply Voltage</td>
<td>275 300 Volts</td>
</tr>
<tr>
<td>Grid No. 1 Voltage</td>
<td>-13 -15 Volts</td>
</tr>
<tr>
<td>Peak AF Grid to Grid Voltage</td>
<td>24 29 Volts</td>
</tr>
<tr>
<td>Zero Signal Plate Current</td>
<td>150 124 Ma</td>
</tr>
<tr>
<td>Maximum Signal Plate Current</td>
<td>294 290 Ma</td>
</tr>
<tr>
<td>Zero Signal Screen Current</td>
<td>4.4 3.6 Ma</td>
</tr>
<tr>
<td>Maximum Signal Screen Current</td>
<td>34 39 Ma</td>
</tr>
<tr>
<td>Effective Load (Plate to Plate)</td>
<td>2800 4200 Ohms</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>2.5 2.5 Percent</td>
</tr>
<tr>
<td>Maximum Signal Power Output</td>
<td>65 100 Watts</td>
</tr>
</tbody>
</table>

NOTES:

1. It is essential to maintain free circulation of air around the tube for proper cooling.
2. Grid No. 2 dissipation may reach 8 watts during intervals of maximum speech and music signals.
3. Screen tapped at 40% of primary turns. Plate current includes screen current.
AVERAGE TRANSFER CHARACTERISTICS

$E_f = \text{RATED VALUE}$

$E_b = 500 \text{ VOLTS}$

AVERAGE PLATE CHARACTERISTICS

(Triode Connected)

$E_f = \text{RATED VALUE}$

GRID NO. 2 CONNECTED TO PLATE

CURRENT IN mA

GRID VOLTAGE

CURRENT IN mA

PLATE VOLTAGE