6DS4

High-Mu Triode

NUVISTOR TYPE
HAVING EXTENDED CUTOFF CHARACTERISTIC
For Use as Grounded-Cathode, Neutralized RF-Amplifier
Tube in Tuners of VHF Television and FM Receivers
Featuring Improved Weak-Signal-Area Reception

GENERAL DATA

Electrical:
Heater Characteristics and Ratings (Design-Maximum Values):
Voltage (AC or DC) ................. 6.3 ± 0.6 volts
Current at heater volts = 6.3 .... 0.135 amp
Peak heater-cathode voltage:
Heater negative with respect to cathode .......... 100 max. volts
Heater positive with respect to cathode ........... 100 max. volts
Direct Interelectrode Capacitances (Approx.):
Grid to plate .................. 0.92 µf
Grid to cathode, shell, and heater ... 4.3 µf
Plate to cathode, shell, and heater ... 1.8 µf
Plate to cathode ................. 0.18 µf
Heater to cathode ................ 1.6 µf

Characteristics, Class AI Amplifier:
Plate Supply Voltage .................. 110 volts
Grid Supply Voltage ................. 0 volts
Cathode Resistor .................. 130 ohms
Amplification Factor ................. 63
Plate Resistance (Approx.) ........... 7000 ohms
Transconductance .................. 9000 µmhos
Plate Current ...................... 6.5 ma
Grid Voltage (Approx.) for plate $\mu a = 100$ .. -5 volts
Grid Voltage (Approx.) for plate $\mu a = 10$ .... -6.8 volts

Mechanical:
Operating Position .................. Any
Type of Cathode .................. Coated Unipotential
Maximum Overall Length ............ 0.800"
Maximum Seated Length ............. 0.625"
Maximum Diameter ................ 0.440"
Envelope ......................... Metal Shell MT4
Socket ......................... Cinch Mfg. Corp. No. 133 65 10 001, Industrial Electronic Hardware Co. No. Nu 5044 or No. Nu 5060, or equivalent
Base .................. Medium Ceramic-Wafer Twelvar 5-Pin (JEDEC No. E5-65)

→ Indicates a change.

RADIO CORPORATION OF AMERICA
Electron Tube Division
Harrison, N. J.

DATA 1
1-63
Basing Designation for BOTTOM VIEW. .......... 12AQ
Pin 1a - Do Not Use
Pin 2 - Plate
Pin 3 - Same as Pin 1
Pin 4 - Grid
Pin 5 - Same as Pin 1
Pin 6 - Same as Pin 1
Pin 7 - Same as Pin 1
Pin 8 - Cathode
Pin 9 - Same as Pin 1
Pin 10 - Heater
Pin 12 - Heater

AMPLIFIER — Class A

Maximum Ratings, Design-Maximum Values:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATE SUPPLY VOLTAGE</td>
<td>300 V max.</td>
</tr>
<tr>
<td>PLATE VOLTAGE</td>
<td>135 V max.</td>
</tr>
<tr>
<td>GRID VOLTAGE:</td>
<td></td>
</tr>
<tr>
<td>Negative-bias value</td>
<td>55 V max.</td>
</tr>
<tr>
<td>Peak-positive value</td>
<td>0 V max.</td>
</tr>
<tr>
<td>CATHODE CURRENT</td>
<td>15 mA max.</td>
</tr>
<tr>
<td>PLATE DISSIPATION:</td>
<td></td>
</tr>
<tr>
<td>With a minimum series plate-circuit resistance of 5000 ohms</td>
<td>1.5 W max.</td>
</tr>
<tr>
<td>For lower values of series plate-circuit resistance</td>
<td>See accompanying Plate-Dissipation-Rating Chart</td>
</tr>
</tbody>
</table>

Typical Operation:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>70 V</td>
</tr>
<tr>
<td>Grid Supply Voltage</td>
<td>0 V</td>
</tr>
<tr>
<td>Grid Resistor</td>
<td>47000 ohms</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>68</td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>5440 ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>12500 μmhos</td>
</tr>
<tr>
<td>Plate Current</td>
<td>7 mA</td>
</tr>
</tbody>
</table>

Maximum Circuit Values:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid-Circuit Resistance:</td>
<td></td>
</tr>
<tr>
<td>For fixed-bias operation</td>
<td>0.5 max. meghm</td>
</tr>
<tr>
<td>For cathode-bias operation</td>
<td>2.2 max. meghms</td>
</tr>
</tbody>
</table>

\( ^{a} \) Pin is of a length such that its end does not touch the socket insertion plane.

\( ^{b} \) A plate supply voltage of 300 volts may be used provided sufficient plate-circuit resistance and AGC voltage are used to limit the voltage at the plate of the tube to 135 volts under conditions of maximum-rated plate dissipation (1.5 watts).

\( ^{c} \) For operation at metal-shell temperatures up to 135° C.

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NOTE 1: MAXIMUM OUTSIDE DIAMETER OF 0.440" IS PERMITTED ALONG 0.190" LUG LENGTH.

NOTE 2: SHELL TEMPERATURE SHOULD BE MEASURED IN ZONE "A" BETWEEN BROKEN LINES.