RADIOTRON
6J7-G
TRIPLE-GRID DETECTOR AMPLIFIER

Heater - Coated Unipotential Cathode
Voltage 6.5 0-6 or 6-6 volts
Current 0.3 amp.

Direct Interelectrode Capacitances:

Pentode Connection Triode Connection
Grid to Plate 0.007 max. 1.6 pF
Input 4.6 Grid to Cathode 8.6 pF
Output 12.0 Plate to Cathode 17.0 pF

Maximum Overall Length 4-15/32"
Maximum Seated Height 5-59/64"
Maximum Diameter 1-9/16"

Bulb 67-12
Cap Skirted Miniature
Base Small Shell Octal 7-Pin
Pin 1 - Internal shield Pin 5 - Suppressor
Pin 2 - Heater Pin 7 - Heater
Pin 3 - Plate Pin 8 - Cathode
Pin 4 - Screen Cap - Grid
Mounting Position Any

**BOTTOM VIEW (G-72)**

Maximum Ratings are Design-Centre Values:

**P-F AMPLIFIER - CLASS A1.**

- Plate Voltage 300 max. volts
- Screen Voltage 250 max. volts
- Screen Supply Voltage 500 max. volts
- Grid Voltage 0 min. volts
- Plate Dissipation 1.6 max. watts
- Screen Dissipation 0.35 max. watt

Typical Operation:

- Plate Voltage 100 250 volts
- Screen Voltage 100 100 volts
- Grid Voltage -6 -6 volts
- Suppressor Connected to cathode at socket
- Plate Resistance 1.0 + megohm
- Grid Conductance 1128 1828 mhos
- Grid Bias (approx.) 0 0 volts
- Plate Current 2.0 2.0 ma.
- Screen Current 0.8 0.5 ma.

**PENTODE POWER AMPLIFIER**

- Plate Voltage 500 max. volts
- Screen Voltage 250 max. volts
- Screen Supply Voltage 500 max. volts
- Grid Voltage 0 min. volts
- Plate Dissipation 3.6 max. watts
- Screen Dissipation .55 max. watt

Typical Operation:

- Plate Voltage 250 250 volts
- Screen Voltage 100 197 volts
- Grid Voltage -9.5 -4 volts
- Suppressor Connected to cathode at socket
- Plate Bias Resist. 800 440 ohms
- Peak P-F Grid Volts 2.5 4 volts
- Zero-Sig. Plate Current 2.0 7.5 ma.
- Max.-Sig. Plate Current 8.3 4 ma.
- Zero-Sig. Screen Current 0.7 1.6 ma.
- Max.-Sig. Screen Current 0.9 4 ma.
- Plate Resistance - 0 ohms
- Conductance 1270 (approx.) 3 mhos
- Load Resistance 56000 28000 ohms
- Max.-Signal Power Output 0.58 0.69 watt

* With close fitting shield connected to cathode.
* Screen and suppressor connected to plate at the socket; without shield—can.

For other footnotes see back of sheet.

AMALGAMATED WIRELESS VALVE CO. PTY. LTD.
MAY, 1945
SYDNEY, AUSTRALIA
TRIPLE-GRID DETECTOR AMPLIFIER

TRIODE POWER AMPLIFIER

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>250 max. volts</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>0 min. volts</td>
</tr>
<tr>
<td>Plate &amp; Screen Dissipation (total)</td>
<td>1.75 max. watts</td>
</tr>
</tbody>
</table>

Typical Operation:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>180 volts</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>-5.0 volts</td>
</tr>
<tr>
<td>Cathode Bias Resistor</td>
<td>1000 ohms</td>
</tr>
<tr>
<td>Zero-Signal Plate Current</td>
<td>0.2 mA</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>80</td>
</tr>
<tr>
<td>Plate Resistance</td>
<td>10000 ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>1900 µhos</td>
</tr>
<tr>
<td>Load Resistance</td>
<td>22000 ohms</td>
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<tr>
<td>Second Harmonic Distortion</td>
<td>5%</td>
</tr>
<tr>
<td>Power Output</td>
<td>0.375 watt</td>
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</tbody>
</table>

DETECTOR

Typical Operating Conditions as Biased Detector:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Supply Voltage</td>
<td>100 volts</td>
</tr>
<tr>
<td>Screen Voltage</td>
<td>100 volts</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>-1.4 volts</td>
</tr>
<tr>
<td>Cathode Bias Resistor</td>
<td>10000 ohms</td>
</tr>
<tr>
<td>Suppressor</td>
<td>Connected to Cathode at socket</td>
</tr>
<tr>
<td>Zero-Sig.Cathode Cur.</td>
<td>0.055 mA</td>
</tr>
<tr>
<td>Plate Load Resistor</td>
<td>0.055 µhos</td>
</tr>
<tr>
<td>Coupling Condenser</td>
<td>0.03 µF</td>
</tr>
<tr>
<td>Grid Resistor oo</td>
<td>0.03 µmhos</td>
</tr>
<tr>
<td>R-F Signal (MHz)</td>
<td>1.08 MHz</td>
</tr>
<tr>
<td></td>
<td>1.00 MHz</td>
</tr>
</tbody>
</table>

In circuits where the cathode is not directly connected to the heater, the potential difference between heater and cathode should be kept as low as possible.

◆ The grid circuit resistance should not exceed 1 megohm as a pentode or triode power amplifier or 3 megohms as a conventional r-f or i-f amplifier. Where the circuit constants are such that the plate current cannot exceed 1 mA, the grid circuit resistance may be as high as 10 megohms; for higher values of grid circuit resistance it is essential to operate with reduced heater voltage.

† Greater than 1 megohm.

△ For cathode current cut-off.

# The voltage at the plate will be the "Plate Supply Voltage" minus the voltage drop across the plate load resistor caused by the plate current.

## For the following valve.

### For these signal values modulated 20%, the voltage output under each set of conditions is 17 peak volts at the grid of the following amplifier. This value is sufficient to ensure full audio output from a type 6F5-G (Class A pentode service) with 250 volts on the plate.

* Screen and suppressor connected to plate.

** The requisite negative bias may be obtained from an external source or, alternatively, may be derived from a cathode bias resistor of the stated value. For this particular service type of bias has negligible effect on the operation.

For recommended operating conditions as a resistance-coupled a-f voltage amplifier refer to sheet headed "Resistance-Coupled Pentodes."

← Indicates a change.
RADIOTRON
6J7-G

AVERAGE PLATE CHARACTERISTICS

$E_f = 6.3$ VOLTS  SCREEN VOLTS = 100  SUPPRESSOR VOLTS = 0

PLATE MILLIAMPERES  92C-4741R1

AMALGAMATED WIRELESS VALVE Co. Pty. Ltd.
MAY. 1945
SYDNEY, AUSTRALIA
PLATE CURRENT MILLIAMPERES

GRID \[ E_{G1} \text{ VOLTS} \]

PLATE \[ E_{P} \text{ VOLTS} = 6.3 \]

PLATE LOAD \[ 20 \text{ MΩ} \]

\[ V_{CC} = 5 \text{ V} \]

A.W.V. 174
$E_f = 6.3\ \text{VOLTS}$
SCREEN AND SUPPRESSOR TIED TO PLATE
E_f = 6.3 VOLTS
SCREEN AND SUPPRESSOR TIED TO PLATE.