PENTAGRID CONVERTER
RENEWAL TYPE FOR MAJESTIC RECEIVERS

Heater • Coated Unipotential Cathode
Voltage 6.3 a-c or d-c volts
Current 0.3 amp.
Overall Length 4-9/32" to 4-17/32"
Seated Height 3-21/32" to 3-29/32"
Maximum Diameter (without shield) 1-9/16"
Bulb (with form-fitting shield) ST-12
Cap Small Metal
Base ▲ Small 7-Pin

• 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.
▲ Requires a different socket than the medium 7-pin base.
* Basing arrangement is the same as for the 6A7, except that the external shield on the 6A7S is connected to cathode.

Typical Operating Conditions and Curves for the 6A7S are the same as for Type 6A8.

6A8, 6A8-G, 6A8-GT
PENTAGRID CONVERTER

Heater • Coated Unipotential Cathode
Voltage 6.3 a-c or d-c volts
Current 0.3 amp.

Direct Inter-electrode Cap. 6A8 6A8-G 6A8-GT
Grid #4 to Plate 0.06 0.26 0.26 μf
Grid #4 to Grid #2 0.1 0.19 0.19 μf
Grid #4 to Grid #1 0.09 0.16 0.16 μf
Grid #1 to Grid #2 0.8 1.1 1.1 μf
Grid #4 to All Other
Electrodes (R-F Input) 12 9.5 9.5 μf
Grid #2 to All Other Electrodes
Except Grid #1 (Osc. Output) 5 4.6 4.6 μf
Grid #1 to All Other Electrodes
Except Grid #2 (Osc. Input) 6.5 6 6 μf
Plate to All Other
Electrodes (Mixer Output) 12 12 12 μf

Overall Length
Grid #4 to Plate 3-1/8" max.
Grid #4 to Grid #2 4-15/32" max.
Grid #4 to Grid #1 2-9/16" max.
Grid #1 to Grid #2 3-21/32" max.
Max. Diameter
1-5/16" max.
Bulb Metal Shell, WT-8
Cap Miniature Skirted Min. Style C

▲ 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.
▲ With shell of 6A8 connected to cathode, and with close-fitting shield on 6A8-G and 6A8-GT connected to cathode.

Indicates a change.

Dec. 1, 1941
**PENTAGRID CONVERTER**

<table>
<thead>
<tr>
<th>Base</th>
<th>6A8</th>
<th>6A8-G</th>
<th>6A8-GT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basing Designation</td>
<td>6A8, Shell</td>
<td>G-8A</td>
<td>GT-8A</td>
</tr>
<tr>
<td>Pin 1</td>
<td>6A8-G, No Con.</td>
<td>Pin 5 - Grid #1</td>
<td>Pin 6 - Grid #2</td>
</tr>
<tr>
<td>Pin 2 - Heater</td>
<td></td>
<td>Pin 7 - Heater</td>
<td>Pin 8 - Cathode</td>
</tr>
<tr>
<td>Pin 3 - Plate</td>
<td></td>
<td></td>
<td>Cap - Grid #4</td>
</tr>
<tr>
<td>Pin 4 - Grids #3 &amp; #5</td>
<td></td>
<td></td>
<td>Any</td>
</tr>
</tbody>
</table>

**Plate Voltage**
- 300 max. volts

**Screen (Grids #3 & #5) Voltage**
- 100 max. volts

**Screen Supply Voltage**
- 300 max. volts

**Anode-Grid (Grid #2) Voltage**
- 200 max. volts

**Anode-Grid Supply Voltage**
- 300 max. volts

**Control-Grid (Grid #4) Voltage**
- 0 min. volts

**Plate Dissipation**
- 1.0 max. watt

**Screen Dissipation**
- 0.3 max. watt

**Anode-Grid Dissipation**
- 0.75 max. watt

**Total Cathode Current**
- 14 max. ma.

**Typical Operation:**

| Plate Voltage | 100 | 250 | volts |
| Screen Voltage | 50 | 100 | volts |
| Anode-Grid Voltage | 100 | | volts |
| Anode-Grid Supply Voltage | | 250* | volts |
| Control-Grid Voltage | -1.5 | -3 | volts |
| Osc.-Grid (Grid #1) Resistor | 50000 | 50000 | ohms |
| Plate Resistance | 0.6 | 0.36 | approx. ohms |
| Conversion Transconductance | 360 | 550 | μmhos |

**Conver. Transcond. (approx.)**

- with Control-Grid Bias of -20 volts
  - 3 | μmhos |

- with Control-Grid Bias of -35 volts
  - 6 | μmhos |

**Plate Current**
- 1.1 | 3.5 | ma. |

**Screen Current**
- 1.3 | 2.7 | ma. |

**Anode-Grid Current**
- 2 | 4 | ma. |

**Oscillator-Grid Current**
- 0.25 | 0.4 | ma. |

**Total Cathode Current**
- 4.6 | 10.6 | ma. |

**NOTE:** The transconductance of the oscillator portion (not oscillating)
- is 1150 micromhos under the following conditions: plate volts, 250;
  - screen volts, 55; control-grid volts, -2; anode-grid volts, 100;
  - and oscillator-grid volts, -1.

- Anode-grid supply voltages in excess of 200 volts require use of
  - 20000-ohm voltage-dropping resistor by-passed by 0.1 μf condenser.

* For Typical Circuit and Coil Design Details, refer to Type 2A7.

Indicates a change.

**DATA**

Dec. 1, 1941

---

RCA RADIOTRON DIVISION

RCA MANUFACTURING COMPANY, INC.
OPERATION CHARACTERISTICS
WITH 50000-Ohm OSCILLATOR-GRID LEAK

- $E_T = 6.3$ volts
- Plate Volts = 250
- Screen (Grids No. 3 & No. 5) Volts = 100
- Anode-Grid (Grid No. 2) Volts = 250
- Volt Supply Through 20000-Ohm Dropping Resistor
- Control-Grid (Grid No. 4) Volts = Value From Self-Biasing Resistor of 300 Ohms
- Oscillator-Grid (Grid No. 1) Leak = 50000 Ohms
- Oscillator-Grid Condenser = 50 $\mu$F

**Graph:**
- CATHODE CURRENT
- TRANSCONDUCTANCE (Gm)
- CONVERSION RESISTANCE (Rc)

**Axes:**
- CATHODE MILLIAMPERES
- OSCILLATOR-GRID MICROAMPERES ($I_{C1}$)