6AC7
Description and Rating
RADIO-FREQUENCY AMPLIFIER PENTODE

GENERAL DESCRIPTION
Principal Application: The 6AC7 is a sharp-cutoff high-transconductance pentode intended for service as a wide-band video or radio-frequency amplifier. It is also suitable for use as a mixer or oscillator at low frequencies, but it is not recommended for low-level audio-frequency applications unless the heater voltage is obtained from a d-c source. The use of cathode-bias is recommended.

Cathode ................ Coated Unipotential
Heater Voltage (A-C or D-C) .... 6.3 Volts
Heater Current ............. 0.45 Ampere
Envelope ................ MT-B, Metal Shell
Base .............. BB-21, Small Wafer Octal 8-Pin

Mounting Position ........... Any
Direct Inter-electrode Capacitances: #
Grid 1 to Plate (Max) ........ 0.015 µµf
Input .................. 11 µµf
Output .................. 5 µµf

PHYSICAL DIMENSIONS

TERMINAL CONNECTIONS

Pin 1 - Shell and Internal Shield
Pin 2 - Heater
Pin 3 - Grid Number 3 (Suppressor)
Pin 4 - Grid Number 1
Pin 5 - Cathode
Pin 6 - Grid Number 2 (Screen)
Pin 7 - Heater
Pin 8 - Plate

MAXIMUM RATINGS

Plate Voltage .................. 300 Volts
Screen Supply Voltage .......... 300 Volts
Screen Voltage ................ 150 Volts
Plate Dissipation .............. 3.0 Watts
Screen Dissipation ........... 0.38 Watt
Heater-Cathode Voltage ....... 90 Volts

Grid Circuit Resistance: *
  With Fixed Screen Voltage .......... 0.25 Megohm
  With Series Screen Resistor ........ 0.5 Megohm

# With pin 1 connected to pin 5
* For maximum voltage conditions and with cathode bias

GENERAL ELECTRIC
Supersedes E1-1263 dated 6-46
CHARACTERISTICS AND TYPICAL OPERATION

CLASS A1 AMPLIFIER

<table>
<thead>
<tr>
<th></th>
<th>Condition 1</th>
<th>Condition 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Suppressor Voltage **</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Screen Supply Voltage</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Screen Voltage</td>
<td>150</td>
<td>---</td>
</tr>
<tr>
<td>Screen Resistor</td>
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<td>60000</td>
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<tr>
<td>Cathode Bias Resistor (Minimum) ##</td>
<td>160</td>
<td>160</td>
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<tr>
<td>Plate Resistance (Approx)</td>
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<tr>
<td>Transconductance</td>
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<tr>
<td>Plate Current</td>
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<tr>
<td>Screen Current</td>
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</tr>
<tr>
<td></td>
<td>Volts</td>
<td>Volts</td>
</tr>
<tr>
<td></td>
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<td>Ohms</td>
</tr>
<tr>
<td></td>
<td>Megohms</td>
<td>Micromhos</td>
</tr>
<tr>
<td></td>
<td>Milliamperes</td>
<td>Milliamperes</td>
</tr>
</tbody>
</table>

* When a fixed screen voltage is used, as shown in condition 1, a sharp-cutoff characteristic is obtained.

** When a screen resistor is used, as shown in condition 2, an extended-cutoff characteristic is obtained which may be utilized in applications where the gain is controlled by variation of the grid bias.

### In r-f and i-f stages, the suppressor should be connected directly to ground to minimize feedback.

## The cathode bias resistor should be adjusted to give a plate current of 10 Milliamperes.

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**AVERAGE CHARACTERISTICS**

- \( E_f = 6.3 \) VOLTS
- \( E_b = 300 \) VOLTS
- \( E_{GD} = 0 \) VOLTS

```plaintext
GRID NUMBER 1 VOLTAGE IN VOLTS
```

```plaintext
SCREEN CURRENT IN MILLIAMPERES
```

```plaintext
PLATE CURRENT IN MILLIAMPERES
```

```plaintext
GRID NUMBER 1 VOLTAGE IN VOLTS
```