**DESCRIPTION AND RATING**

The 6CF6 is a miniature sharp-cutoff pentode designed especially for use as a gain-controlled intermediate-frequency amplifier in television receivers. Except for the plate-current cutoff characteristic, the 6CF6 is identical to the 6CB6; and like that tube features high transconductance and low interelectrode capacitances. The tube is also useful as a radio-frequency amplifier in VHF television tuners.

The 3CF6 is identical to the 6CF6 except for heater ratings. The 3CF6 in addition incorporates a controlled heater warm-up characteristic which makes it especially suited for use in television receivers that employ 600-milliampere, series-connected heaters.

**GENERAL**

**ELECTRICAL**

<table>
<thead>
<tr>
<th>Description</th>
<th>3CF6</th>
<th>6CF6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cathode—Coated Unipotential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heater Voltage, AC or DC</td>
<td>3.15</td>
<td>6.3 ± 10% Volts</td>
</tr>
<tr>
<td>Heater Current</td>
<td>0.6 ± 6%</td>
<td>0.3 Ampere</td>
</tr>
<tr>
<td>Heater Warm-up Time*</td>
<td>11</td>
<td>11 Seconds</td>
</tr>
</tbody>
</table>

Direct Interelectrode Capacitances

<table>
<thead>
<tr>
<th>Description</th>
<th>With Shield</th>
<th>Without Shield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid-Number 1 to Plate, maximum</td>
<td>0.015 μf</td>
<td>0.025 μf</td>
</tr>
<tr>
<td>Input</td>
<td>6.5 μf</td>
<td>6.5 μf</td>
</tr>
<tr>
<td>Output</td>
<td>3.0 μf</td>
<td>2.0 μf</td>
</tr>
</tbody>
</table>

**MECHANICAL**

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

**TERMINAL CONNECTIONS**

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

**PHYSICAL DIMENSIONS**
MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES
Plate Voltage ........................................... 330 Volts
Screen-Supply Voltage .............................. 330 Volts
Screen Voltage—See Screen Rating Chart
Positive DC Grid-Number 1 Voltage .......... 0 Volts
Plate Dissipation ................................. 2.3 Watts
Screen Dissipation ................................. 0.55 Watts
Heater-Cathode Voltage
   Heater Positive with Respect to Cathode
      DC Component ................................ 100 Volts
      Total DC and Peak .................. 200 Volts
   Heater Negative with Respect to Cathode
      Total DC and Peak .................. 200 Volts

Design-Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur for the types of service for which the tube is rated. Therefore, the equipment designer must establish the circuit design so that initially and throughout equipment life no design-maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A1 AMPLIFIER
Plate Voltage ........................................... 125 125 Volts
Suppressor, Connected to Cathode at Socket
Screen Voltage ......................................... 125 125 Volts
Grid-Number 1 Voltage .............................. -3.0 Volts
Cathode-Bias Resistor ............................... 56 Ohms
Plate Resistance, approximate .................. 0.3 Megohms
Transconductance ................................ 7800 Micromhos
Plate Current ........................................... 2.2 12.5 Milliamperes
Screen Current ......................................... 3.7 Milliamperes
Grid-Number 1 Voltage, approximate
   lb—20 Microamperes ............................ -6.0 Volts

* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† With external shield (RETMA 316) connected to pin 2.