The 6V6-GT is a beam-power pentode designed for use in the audio-frequency power output stage of television and radio receivers. In this application, it is capable of supplying high power output with high sensitivity, high efficiency, and low third and higher-order harmonic distortion. The 6V6-GT may also be used as a triode-connected vertical-deflection amplifier in television receivers.

Except for heater ratings, the 5V6-GT is identical to the 6V6-GT. In addition, the 5V6-GT, as a result of its controlled heater warm-up characteristic, is especially suited for use in television receivers which employ series-connected heaters. When the 5V6-GT is used in conjunction with other 600-milliampere types which exhibit essentially the same heater warm-up characteristic, heater voltage surges across the individual tubes are minimized during the warm-up period.

**GENERAL**

**ELECTRICAL**
- Cathode—Coated Unipotential
- Heater Voltage, AC or DC: 4.7 Volts
- Heater Current: 0.6 Amperes
- Heater Warm-up Time*: 11 Seconds
- Direct Interelectrode Capacitance, approximate: Grid-Number 1 to Plate: 0.7 μF, Input: 9.0 μF, Output: 7.5 μF

**MECHANICAL**
- Mounting Position—Any
- Envelope—T-9, Glass
- Base—B6-81 or B7-7, Intermediate Shell Octal
  - or B6-84 or B7-59, Short Intermediate Shell Octal

**MAXIMUM RATINGS**

**DESIGN-CENTER VALUES UNLESS OTHERWISE INDICATED**

<table>
<thead>
<tr>
<th>Class A Amplifier</th>
<th>Vertical-Deflection Amplifier (Triode Connection) V</th>
<th>5V6-GT</th>
<th>6V6-GT</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Plate Voltage</td>
<td>315 Volts</td>
<td>315 Volts</td>
<td>1200 Volts</td>
</tr>
<tr>
<td>Peak Positive Pulse Plate Voltage</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Screen-Supply Voltage</td>
<td>315 Volts</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Screen Voltage</td>
<td>285 Volts</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Peak Negative Grid-Number 1 Voltage</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Plate Dissipation</td>
<td>12 Watts</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Screen Dissipation</td>
<td>2.0 Watts</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>DC Cathode Current</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Peak Cathode Current</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Heater-Cathode Voltage</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Heater Positive with Respect to Cathode</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>DC Component</td>
<td>100 Volts</td>
<td>100 Volts</td>
<td>—</td>
</tr>
<tr>
<td>Total DC and Peak</td>
<td>200 Watts</td>
<td>200 Watts</td>
<td>—</td>
</tr>
<tr>
<td>Heater Negative with Respect to Cathode</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Total DC and Peak</td>
<td>200 Volts</td>
<td>200 Volts</td>
<td>—</td>
</tr>
<tr>
<td>Grid-Number 1 Circuit Resistance</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>With Fixed Bias</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>With Cathode Bias</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**TERMINAL CONNECTIONS**
- Pin 1—No Connection
- Pin 2—Heater
- Pin 3—Plate
- Pin 4—Grid Number 2 (Screen)
- Pin 5—Grid Number 1
- Pin 7—Heater
- Pin 8—Cathode and Beam Plates

**PHYSICAL DIMENSIONS**

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General Electric
Supersedes ET-T351D, dated 6-53
CHARACTERISTICS AND TYPICAL OPERATION

CLASS A1 AMPLIFIER
Plate Voltage ........................................ 180 250 315 Volts
Screen Voltage ...................................... 180 250 225 Volts
Grid-Number 1 Voltage .......................... -8.5 -12.5 -13.0 Volts
Peak AF Grid-Number 1 Voltage .............. 8.5 12.5 13.0 Volts
Plate Resistance, approximate .............. 50000 50000 80000 Ohms
Transconductance ............................ 3700 4100 3750 Micromhos
Zero-Signal Plate Current ..................... 29 45 34 Milliamperes
Maximum-Signal Plate Current .............. 30 47 35 Milliamperes
Zero-Signal Screen Current ................... 3.0 4.5 2.2 Milliamperes
Maximum-Signal Screen Current .............. 4.0 7.0 6.0 Milliamperes
Load Resistance .............................. 5500 5000 8500 Ohms
Total Harmonic Distortion, approximate .... 8 8 12 Percent
Maximum-Signal Power Output .............. 2.0 4.5 5.5 Watts

PUSH-PULL CLASS AB1 AMPLIFIER, VALUES FOR TWO TUBES
Plate Voltage ........................................ 250 285 Volts
Screen Voltage ...................................... 250 285 Volts
Grid-Number 1 Voltage .......................... -15 -19 Volts
Peak AF Grid-to-Grid Voltage ............... -15 -19 Volts
Zero-Signal Plate Current ..................... 30 70 Milliamperes
Maximum-Signal Plate Current .............. 79 92 Milliamperes
Zero-Signal Screen Current ................... 5.0 4.0 Milliamperes
Maximum-Signal Screen Current .............. 13 13.5 Milliamperes
Effective Load Resistance, Plate-to-Plate ... 10000 8000 Ohms
Total Harmonic Distortion .................... 5 3.5 Percent
Maximum-Signal Power Output .............. 10 14 Watts

AVERAGE CHARACTERISTICS, TRIODE CONNECTION π
Plate Voltage ........................................ 250 Volts
Grid-Number 1 Voltage .......................... -12.5 Volts
Amplification Factor ............................ 9.8
Plate Resistance, approximate .............. 1960 Ohms
Transconductance ............................ 5000 Micromhos
Plate Current ..................................... 49.5 Milliamperes
Grid-Number 1 Voltage, approximate .... 49.5 Milliamperes
Ih = 0.5 Milliamperes .......................... -36 Volts

* Heater warm-up time is defined as the time required in the circuit shown at the right for the voltage across the heater terminals to increase from zero to the heater test voltage (Vh). For this type, E = 18.7 volts (RMS or DC), Vh = 3.73 volts (RMS or DC), and R = 23.5 ohms.

† Without external shield.
§ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.
π With screen connected to plate.
▲ Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.
♦ In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.
AVERAGE TRANSFER CHARACTERISTICS

\[ E_f = \text{RATED VALUE} \]
\[ E_b = 250 \text{ VOLTS} \]

GRID-NUMBER 1 VOLTAGE IN VOLTS

PLATE CURRENT IN MILLIAMPERES

AVERAGE TRANSFER CHARACTERISTICS

\[ E_f = \text{RATED VALUE} \]
\[ E_b = 250 \text{ VOLTS} \]

GRID-NUMBER 1 VOLTAGE IN VOLTS

SCREEN CURRENT IN MILLIAMPERES
**Operational Characteristics**

- $E_f = \text{Rated Value}$
- $E_b = 250 \text{ Volts}$
- $E_{c2} = 250 \text{ Volts}$
- $E_{c1} = -12.5 \text{ Volts}$
- $E_{sig} = 8.8 \text{ Volts (RMS)}$

**Graphs:**
- Plate Current
- Power Output
- Total Harmonic Distortion
- Screen Current
- Load Resistance vs. Current
- Maximum Signal Plate or Screen Current in Milliamperes

TUBE DEPARTMENT

GENERAL ELECTRIC

Schenectady 5, N.Y.