6SN7-GTA
MEDIUM-MU TWIN TRIODE

GENERAL DATA

Electrical:
Heater, for Unipotential Cathodes:
Voltage ................. 6.3 .... ac or dc volts
Current ................. 0.6 .... amp

Direct Interelectrode Capacitances (With no external shield):

<table>
<thead>
<tr>
<th>Unit No. 1</th>
<th>Unit No. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to plate</td>
<td>4</td>
</tr>
<tr>
<td>Grid to cathode and heater</td>
<td>2.2</td>
</tr>
<tr>
<td>Plate to cathode and heater</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Characteristics, Class A 1 Amplifier (Each Unit):

| Plate Voltage | 90 | 250 | volts |
| Grid Voltage | 0 | -8 | volts |
| Amplification Factor | 20 | 20 | volts |
| Plate Resistance (Approx.) | 6700 | 7700 | ohms |
| Transconductance | 3000 | 2600 | μmhos |
| Plate Current | 10 | 9 | ma |
| Plate Current for grid voltage of -12.5 volts | - | 1.3 | ma |
| Grid Voltage (Approx.) for plate current of 10 μamp | -7 | -18 | volts |

Mechanical:
Mounting Position ................. Any
Maximum Overall Length .......... 3-5/16"
Maximum Seated Length .......... 2-3/4"
Maximum Diameter ................. 1-9/32"
Bulb .......... T-9
Base ........ Short Intermediate-Shelf Octal 8-Pin with External Barriers (JETEC No.B8-58)

Basing Designation for BOTTOM VIEW .......... 8BD

Pin 1 – Grid of Unit No.2
Pin 2 – Plate of Unit No.2
Pin 3 – Cathode of Unit No.2
Pin 4 – Grid of Unit No.1

Pin 5 – Plate of Unit No.1
Pin 6 – Cathode of Unit No.1
Pin 7 – Heater
Pin 8 – Heater

AMPLIFIER – Class A 1
Values are for Each Unit

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE ................. 450 max. volts
CATHODE CURRENT ................. 20 max. ma

JUNE 14, 1954
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

TUBE DIVISION
TENTATIVE DATA 1
# 6SN7-GTA

**MEDIUM-MU TWIN TRIODE**

<table>
<thead>
<tr>
<th><strong>PLATE DISSIPATION:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Either plate</td>
<td>5 max. watts</td>
</tr>
<tr>
<td>Both plates (Both units operating)</td>
<td>7.5 max. watts</td>
</tr>
</tbody>
</table>

**PEAK HEATER-CATHODE VOLTAGE:**
- Heater negative with respect to cathode: 200 max. volts
- Heater positive with respect to cathode: 200* max. volts

**Maximum Circuit Values:**
- Grid-Circuit Resistance: For fixed-bias operation: 1 max. megohm

**Typical Operation as Resistance-Coupled Amplifier:**
See RESISTANCE-COUPLED AMPLIFIER CHART No.29 at front of this Section

## HORIZONTAL DEFLECTION OSCILLATOR

*Values are for Each Unit*

**Maximum Ratings, Design-Center Values:**
*For operation in a 525-line, 30-frame system*

<table>
<thead>
<tr>
<th><strong>DC PLATE VOLTAGE</strong></th>
<th>450 max. volts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PEAK NEGATIVE-PULSE GRID VOLTAGE</strong></td>
<td>600 max. volts</td>
</tr>
</tbody>
</table>

**CATHODE CURRENT:**
- Peak: 300 max. ma
- Average: 20 max. ma

<table>
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</table>

**PEAK HEATER-CATHODE VOLTAGE:**
- Heater negative with respect to cathode: 200 max. volts
- Heater positive with respect to cathode: 200* max. volts

**Maximum Circuit Values:**
- Grid-Circuit Resistance: For fixed-bias, grid-resistor bias, or cathode-bias operation: 2.2 max. megohms

## VERTICAL DEFLECTION OSCILLATOR

*Values are for Each Unit*

**Maximum Ratings, Design-Center Values:**
*For operation in a 525-line, 30-frame system*

<table>
<thead>
<tr>
<th><strong>DC PLATE VOLTAGE</strong></th>
<th>450 max. volts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PEAK NEGATIVE-PULSE GRID VOLTAGE</strong></td>
<td>400 max. volts</td>
</tr>
</tbody>
</table>

**CATHODE CURRENT:**
- Peak: 70 max. ma
- Average: 20 max. ma

*a,b,c,d:* See next page.

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*June 14, 1954  Tube Division  Tentative Data*
# 6SN7-GTA

## MEDIUM-MU TWIN TRIODE

<table>
<thead>
<tr>
<th>Plate Dissipation:</th>
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<td>Both plates (Both units operating)</td>
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<thead>
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<th>Peak Heater-Cathode Voltage:</th>
</tr>
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<tbody>
<tr>
<td>Heater negative with respect to cathode</td>
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<tr>
<td>Heater positive with respect to cathode</td>
</tr>
</tbody>
</table>

**Maximum Circuit Values:**

**Grid-Circuit Resistance:**
- For fixed-bias, grid-resistor bias, or cathode-bias operation: 2.2 max. megohms

## Vertical Deflection Amplifier

Values are for Each Unit

### Maximum Ratings, Design-Center Values Except as Noted:

For operation in a 525-line, 30-frame system:

<table>
<thead>
<tr>
<th>DC Plate Voltage</th>
<th>450 max. volts</th>
</tr>
</thead>
</table>

### Peak Positive-Pulse Plate Voltage:
- (Absolute Maximum): 1500 max. volts

### Peak Negative-Pulse Grid Voltage:
- 250 max. volts

### Cathode Current:
- Peak: 70 max. ma
- Average: 20 max. ma

### Plate Dissipation:
- Either plate: 5 max. watts
- Both plates (Both units operating): 7.5 max. watts

### Peak Heater-Cathode Voltage:
- Heater negative with respect to cathode: 200 max. volts
- Heater positive with respect to cathode: 200 max. volts

**Maximum Circuit Values:**

**Grid-Circuit Resistance:**
- For cathode-bias operation: 2.2 max. megohms

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*The dc component must not exceed 100 volts.

*As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

*This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

*This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

*Under no circumstances should this absolute value be exceeded.

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**June 14, 1954**

**Tube Division**

**Tentative Data 2**

**Radio Corporation of America, Harrison, New Jersey**
6SN7-GTA

AVERAGE PLATE CHARACTERISTICS FOR EACH UNIT

$E_p = 6.3$ VOLTS

PLATE MILLIAMPERES

PLATE VOLTS

APRIL 28, 1954
TUBE DIVISION
RADIO CORPORATION OF AMERICA, HAVERHILL, NEW JERSEY

92CM-8322
6SN7-GTA

AVERAGE CHARACTERISTICS
FOR EACH UNIT

$E_c = 6.3$ VOLTS
PLATE VOLTS ($E_b$) = 250

AMPLIFICATION FACTOR (A)

0.06
0.06
0.06
0.06
0.06

TRANSCONDUCTANCE ($g_{m}$) MICROHMS
3000
2000
1000

GRID VOLTS
-25 -20 -15 -10 -5 0