# 12AT7
## HIGH-MU TWIN TRIODE
### 9-PIN MINIATURE TYPE

### GENERAL DATA

**Electrical:**
- **Heater, for Unipotential Cathodes:**
  - **Heater Arrangement:** Series/Parallel
  - **Voltage:** 12.6/6.3 ac or dc volts
  - **Current:** 0.15/0.3 amp
- **Direct Inter-electrode Capacitances (Approx.)**
  - Unit No. 1: 1.5, 2.2, 0.5, 2.4, 0.2, 4.6, 1.8, 0.005 max.
  - Unit No. 2: 1.5, 2.2, 0.4, 2.4, 0.2, 4.6, 1.8

  *With no external shield.*

**Mechanical:**
- **Mounting Position:** Any
- **Maximum Overall Length:** 2-3/16" ± 3/32"
- **Maximum Seated Length:** 1-15/16" ± 3/32"
- **Length, Base Seat to Bulb Top (Excluding tip):** 1-9/16" ± 3/32"
- **Maximum Diameter:** 7/8" ± 3/32"
- **Bulb Diameter:** T-6-1/2"
- **Base Diameter:** Small-Button Noval 9 Pin (JETEC No.E9-1)

**Basing Designation for BOTTOM VIEW:** 9A

**Diagram:**
- A diagram showing pin connections labeled as follows:
  - Pin 1—Plate of Unit No. 2
  - Pin 2—Grid of Unit No. 2
  - Pin 3—Cathode of Unit No. 2
  - Pin 4—Heater
  - Pin 5—Heater
  - Pin 6—Plate of Unit No. 1
  - Pin 7—Grid of Unit No. 1
  - Pin 8—Cathode of Unit No. 1
  - Pin 9—Heater Center-Tap

**AMPLIFIER—Class A1**
**Values are for each unit**

**Maximum Ratings, Design-Center Values:**
- **PLATE VOLTAGE:** 300 max. volts
- **GRID VOLTAGE:**
  - Negative Bias Value: -50 max. volts
  - Plate Dissipation: 2.5 max. watts

---

MARCH 1, 1954

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, MARRISON, NEW JERSEY
# HIGH-MU TWIN TRIODE

**PEAK HEATER–CATHODE VOLTAGE:**
- Heater negative with respect to cathode .. 90 max. volts
- Heater positive with respect to cathode .. 90 max. volts

**Characteristics:**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Supply Voltage</td>
<td>100</td>
<td>250</td>
<td>volts</td>
</tr>
<tr>
<td>Cathode–Bias Resistor</td>
<td>270</td>
<td>200</td>
<td>ohms</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>60</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>15000</td>
<td>10900</td>
<td>ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>4000</td>
<td>5500</td>
<td>μmhos</td>
</tr>
<tr>
<td>Grid Voltage (Approx.)</td>
<td>-5</td>
<td>-12</td>
<td>volts</td>
</tr>
<tr>
<td>for plate current of 10 μamp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plate Current</td>
<td>3.7</td>
<td>10</td>
<td>ma</td>
</tr>
</tbody>
</table>

*→ Indicates a change*