6JE6A, 24JE6A
BEAM POWER TUBES

RCA Dark Heater
For Color-TV Horizontal-Deflection Amplifier Circuits
Using 270 V to over 400 V “B” Supplies
T12 Novar Types

RCA-6JE6A and 24JE6A are double-ended, high-
efficiency beam power tubes of the novar type having a
T12 envelope. These types are especially useful as
horizontal-deflection-amplifier tubes in color-TV
receivers. The 6JE6A has all the performance features of
the 6J66 and will directly replace the 6J66 in all applica-
tions. In addition, it has a higher plate dissipation
(30 watts) and offers the advantage of smaller size for
compact equipment designs. The 6JE6A and 24JE6A can
provide full-deflection power and high voltage in equip-
ment using “B” supply voltages ranging from as low as
270 volts to as high as 400 volts or more.

Both the 6JE6A and 24JE6A have a maximum plate
dissipation rating of 30 watts and a maximum grid-No.2
input rating of 5 watts. These ratings, in addition to
high maximum ratings for peak positive-pulse plate volt-
age (7500 volts) and peak cathode current (1200 milli-
amperes), indicate the capability of these tubes to meet
the stringent requirements of color-television deflection
circuits. Other electrical features which contribute to
the high performance of these tubes are high zero-bias
plate current at low plate and grid-No.2 voltages, and a
high operating ratio of plate current to grid-No.2 current.

The 6JE6A and 24JE6A feature a special plate
structure designed to minimize secondary-electron
emission from the plate and eliminate “knee” discon-
tinuities in the zero-bias region of the Eb-lb character-
istic. A separate base-pin connection to grid No.3 is
provided so that positive voltage can be applied to grid
No.3 to minimize interference from “snippets” and to
increase power output.

The 24JE6A has a 0.600-ampere/24.0-volt heater
having a controlled 11-second warm-up time for use in
series heater-string arrangements.

ELECTRICAL CHARACTERISTICS—Bogey Values
6JE6A 24JE6A

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage, ac or dc</td>
<td>E_h 6.3 24.0 V</td>
</tr>
<tr>
<td>Heater Current</td>
<td>I_h</td>
</tr>
<tr>
<td>Heater Warm-Up Time</td>
<td>t_w</td>
</tr>
</tbody>
</table>
| Direct Interelectrode Capacita-
  tions:                        |      |
| Grid No.1 to plate             | C_{g1-p} | 0.56 pF |
| Input: G1 to (K, G3, C2, H)    | C_s | 22 pF |
| Output: P to (K, G3, C2, H)    | C_o | 11 pF |

Information furnished by RCA is believed to be accurate and
reliable. However, no responsibility is assumed by RCA for its use;
nor for any infringements of patents or other rights of third
parties which may result from its use. No license is granted by
implication or otherwise under any patent or patent rights of RCA.

MECHANICAL CHARACTERISTICS

| Dimensional Outline            | JEDEC No.12-116 |
| Envelope                       | T12 Designation |
| Top Cap                        | Small (JEDEC Designation C1-1) |
| Base                           | Large-Button Novar 9-Pin with Exhaust Tip (JEDEC Designation B9-88) |
| Terminal Connections           | (See TERMINAL DIAGRAM) |
| Type of Cathode                | Coated Unipotential |
| Operating Position             | Any |

MAXIMUM RATINGS—Design-Maximum Values

For operation as a Horizontal-Deflection-Amplifier Tube
in a 525-line, 30-frame system

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Plate Supply Voltage</td>
<td>E_{db}</td>
</tr>
</tbody>
</table>
| Peak Positive-Pulse Plate Volt-
  age                       | E_{bm} | 7500 V |
| Peak Negative-Pulse Plate Volt-
  age                       | E_{cn} | 1100 V |
| DC Grid-No.3 Voltage          | E_{c3} | 75 V |
| DC Grid-No.2 (Screen-Grid) Volt-
  age                       | E_{c2} | 220 V |
| Peak Negative-Pulse Grid-No.1  |
  (Control-Grid) Voltage       | E_{clm} | 330 V |
| Heater-Cathode Voltage:       | E_{ckm} | 1200 V |
| Average                        | E_{ck} | 100 V |
| Heater Voltage, ac or dc (6JE6A)| E_h | 5.7 to 6.9 V |
| Heater Current (24JE6A)        | I_h | 560 to 640 mA |
| Cathode Current:               |      |
| Peak                           | I_{km} | 1200 mA |
| Average                        | I_{kvm} | 350 mA |
| Grid-No.2 Input                | I_{g2} | 5 W |
| Plate Dissipation              | P_h | 30 W |
| Envelope Temperature (at hottest point on envelop surface) | T_e | 250 °C |

6JE6A, 24JE6A 2-66

RADIO CORPORATION OF AMERICA
Electronic Components and Devices
Harrison, N. J.

Trademark(s) ® Registered
Supersedes 6JE6A issue dated 2-65
Printed in U.S.A.
MAXIMUM CIRCUIT VALUES

Grid-No.1- Circuit Resistance: \( R_g (\text{ohm}) \approx 0.47 \text{ M}\Omega \)
For grid-No.1-resistor-bias operation ........................................... 10 \text{ M}\Omega
For plate-pulsed operation (horizontal-deflection circuits only) ..................

\( a \) Measured without external shield in accordance with the current issue of EIA Standard RS-191.
\( b \) With grid-No.3 and grid-No.2 connected, respectively, to cathode and plate at socket.
\( c \) Conditions: \( E_g = E_{g2} = 125 \text{ V}, E_{c1} = -25 \text{ V} \).
\( d \) Conditions: \( E_g = E_{g2} = 145 \text{ V}, E_{c1} = -35 \text{ V} \).
\( e \) This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.

Under pulse-duration condition specified in Footnote \( m \).
\( g \) Designed to mate with connector for 0.360-inch cap, generally available from your local RCA Distributor.
\( h \) Designed to mate with "Novar 9-Contact" Socket generally available from your local RCA Distributor.
\( i \) As defined in the current issue of EIA Standard RS-239.

This rating is applicable when the duration of the voltage pulse does not exceed 15% of one horizontal scanning cycle. In a 525-line, 30-frame system, 15% of one horizontal scanning cycle is 10 \text{ ms}.

In horizontal-deflection-amplifier service, a positive voltage should be applied to grid No.3 to reduce interference from "sweeps", which may occur in both vhf and uhf television receivers, and to increase power output. A typical value for this voltage is 30 volts.

An adequate bias resistor or other means is required to protect the tube in the absence of excitation.

TYPICAL CHARACTERISTICS

DIMENSIONAL OUTLINE JEDEC No. 12-116
Dimensions in Inches

TERMINAL DIAGRAM (Bottom View)

Pin 1 - Grid No.2
Pin 2 - Grid No.1
Pin 3 - Cathode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Grid No.1
Pin 7 - Grid No.2
Pin 8 - Grid No.3
Pin 9 - Do Not Use
Top Cap - Plate

* Applies to the minimum diameter except in the area of the seal.