COMPACTRON TWIN PENTODE

FOR COLOR DEMODULATOR APPLICATIONS

- COLOR TV TYPE
- DUAL-CONTROL
- LOW LEVEL COLOR DEMODULATORS

The 6B11 is a compactron containing twin, dual-control, sharp-cutoff pentodes designed for use as color demodulators in color television receivers. Grids 1 and 3 may be used as independent control electrodes.

**GENERAL**

**ELECTRICAL**

- Cathode - Coated Unipotential

**Heater Characteristics and Ratings**

- Heater Voltage, AC or DC*: 6.3 ± 0.6 Volts
- Heater Current+: 0.9 Amperes

**Direct Interelectrode Capacitances, Each Section**

- Grid-Number 1 to Plate: (g1 to p), 0.10 pf
- Grid-Number 3 to Plate: (g3 to p), 3.2 pf
- Input: g1 to (h + k + g2 + g3 + i.s.), 7.5 pf
- Grid-Number 3 to All: (h + k + g1 + g2 + p + i.s.), 7.5 pf
- Grid-Number 1 to Grid-Number 3: (g1 to g3), 0.10 pf

**MECHANICAL**

- Operating Position - Any
- Envelope - T-9, Glass
- Base - E12-70, Button 12-Pin
- Outline Drawing - EIA 9-59

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Diameter</td>
<td>1.188 inches</td>
</tr>
<tr>
<td>Minimum Diameter</td>
<td>1.062 inches</td>
</tr>
<tr>
<td>Maximum Over-all Length</td>
<td>2.625 inches</td>
</tr>
<tr>
<td>Maximum Seated Height</td>
<td>2.250 inches</td>
</tr>
<tr>
<td>Minimum Seated Height</td>
<td>2.000 inches</td>
</tr>
</tbody>
</table>

**MAXIMUM RATINGS**

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogy electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogy tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

**PHYSICAL DIMENSIONS**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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<tr>
<td>1.188” Max.</td>
<td>2.250” Max.</td>
</tr>
<tr>
<td>1.062” Min.</td>
<td>2.000” Min.</td>
</tr>
</tbody>
</table>

**TERMINAL CONNECTIONS**

- Pin 1 - Heater
- Pin 2 - Grid Number 3 (Suppressor) (Section 2)
- Pin 3 - Plate (Section 2)
- Pin 4 - Grid Number 2 (Screen) (Section 2)
- Pin 5 - Cathode (Section 2)
- Pin 6 - Grid Number 1 (Section 2)
- Pin 7 - Grid Number 1 (Section 1)
- Pin 8 - Cathode (Section 1)
- Pin 9 - Grid Number 2 (Screen) (Section 1)
- Pin 10 - Plate (Section 1)
- Pin 11 - Grid Number 3 (Suppressor) (Section 1)
- Pin 12 - Heater and Internal Shield
MAXIMUM RATINGS (Cont'd)

DESIGN-MAXIMUM VALUES, EACH SECTION
Plate Voltage .................................................. 300 Volts
Grid-Number 3 Voltage
  Positive Value (DC and Peak) ................. 25 Volts
  Negative Value (DC and Peak) ............. 100 Volts
Screen-Supply Voltage ................................. 300 Volts
Screen Voltage - See Screen Rating Chart
Positive DC Grid-Number 1 Voltage .............. 0 Volts
Negative DC Grid-Number 1 Voltage .......... 50 Volts
Plate Dissipation ........................................... 1.7 Watts
Screen Dissipation ......................................... 1.0 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
Grid-Number 1 Circuit Resistance
  With Fixed Bias .................................. 0.22 Megohms
  With Cathode Bias ............................... 0.47 Megohms
  Grid-Number 3 Circuit Resistance .......... 0.68 Megohms

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS, EACH SECTION
Plate Supply Voltage ................................ 150 Volts
Grid-Number 3 Supply Voltage ..................... 0 Volts
Screen Supply Voltage .................................. 100 Volts
Cathode-Bias Resistor ............................... 180 Ohms
Amplification Factor, Grid-Number 3 to Plate 70
Plate Resistance, approximate ................. 0.2 Megohms
Transconductance, Grid-Number 1 to Plate .... 3700 Micromhos
Transconductance, Grid-Number 3 to Plate .... 400 Micromhos
Plate Current ......................................... 3.6 Milliamperes
Screen Current ......................................... 2.0 Milliamperes
Grid-Number 1 Voltage, approximate
  Ib = 75 Microamperes .............................. -3.0 Volts
Grid-Number 3 Voltage, approximate
  Ib = 85 Microamperes .............................. -5.5 Volts

NOTES
* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.
† Heater current of a bogey tube at Ef = 6.3 volts.
§ Without external shield.

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