COMPACTRON DISSIMILAR DOUBLE TRIODE
FOR TV VERTICAL-DEFLECTION OSCILLATOR AND AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6FY7 is a compactron containing two dissimilar triode sections, designed for use as a combined vertical-deflection oscillator and amplifier in television receivers. Section 1 is intended for service as an oscillator and Section 2 as an amplifier.

GENERAL

ELECTRICAL
Cathode - Coated Unipotential
Heater Characteristics and Ratings
Heater Voltage, AC or DC* . . . 6.3±0.6 Volts
Heater Current† . . . . . 1.05 Amperes
Direct Interelectrode Capacitances, approximate§
Section 1 Section 2
Grid to Plate: (g to p) 4.4 9.5 pf
Input: g to (h + k) . . 2.2 6.5 pf
Output: p to (h + k). . 0.4 1.2 pf

MECHANICAL
Operating Position - Any
Envelope - T-9, Glass
Base - E12-70, Button 12-Pin
Outline Drawing - EIA 9-60
Maximum Diameter . . . . . 1.188 Inches
Maximum Over-all Length . . . 2.875 Inches
Maximum Seated Height . . . . 2.500 Inches

MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey 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 bogey 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

TERMINAL CONNECTIONS
Pin 1 - Heater
Pin 2 - No Connection
Pin 3 - Grid (Section 2)
Pin 4 - No Connection
Pin 5 - Plate (Section 2)
Pin 6 - No Connection
Pin 7 - Cathode (Section 2)
Pin 8 - Internal Connection - Do Not Use
Pin 9 - Cathode (Section 1)
Pin 10 - Grid (Section 1)
Pin 11 - Plate (Section 1)
Pin 12 - Heater

BASING DIAGRAM

EIA 12E0

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### MAXIMUM RATINGS (Cont’d)

#### DESIGN-MAXIMUM VALUES

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Oscillator Service (Section 1)</th>
<th>Deflection Amplifiers (Section 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Plate Voltage</td>
<td>330</td>
<td>275 Volts</td>
</tr>
<tr>
<td>Peak Positive Pulse Plate Voltage</td>
<td>---</td>
<td>2000 Volts</td>
</tr>
<tr>
<td>Peak Negative Grid Voltage</td>
<td>400</td>
<td>250 Volts</td>
</tr>
<tr>
<td>Plate Dissipation</td>
<td>1.0</td>
<td>7.0§ Watts</td>
</tr>
<tr>
<td>DC Cathode Current</td>
<td>20</td>
<td>50 Milliamperes</td>
</tr>
<tr>
<td>Peak Cathode Current</td>
<td>70</td>
<td>175 Milliamperes</td>
</tr>
</tbody>
</table>

Heater-Cathode Voltage
- DC Positive with Respect to Cathode
  - DC Component                      | 100                          | 100 Volts                       |
  - Total DC and Peak.                | 200                           | 200 Volts                       |
- Heater Negative with Respect to Cathode
  - Total DC and Peak.                | 200                           | 200 Volts                       |
- Grid Circuit Resistance           | 2.2                            | 2.2 Megohms                     |

#### CHARACTERISTICS AND TYPICAL OPERATION

##### AVERAGE CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Oscillator Service (Section 1)</th>
<th>Amplifier (Section 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>250</td>
<td>60</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>-3.0</td>
<td>0§</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>65</td>
<td>-17.5</td>
</tr>
<tr>
<td>Plate Resistance, approximate</td>
<td>40500</td>
<td>920</td>
</tr>
<tr>
<td>Transconductance</td>
<td>1600</td>
<td>6500</td>
</tr>
<tr>
<td>Plate Current</td>
<td>1.4</td>
<td>95</td>
</tr>
<tr>
<td>Plate Current, approximate Ec = -25 Volts.</td>
<td>---</td>
<td>6 Milliamperes</td>
</tr>
<tr>
<td>Grid Voltage, approximate Ih = 30 Microamperes.</td>
<td>-5.5</td>
<td>---</td>
</tr>
<tr>
<td>Grid Voltage, approximate Ih = 50 Microamperes.</td>
<td>---</td>
<td>-36 Volts</td>
</tr>
</tbody>
</table>

#### 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.

¶ 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.

# 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.

© Applied for short interval (two seconds maximum) so as not to damage tube.