Twin Dual-Control Pentodes

9-PIN MINIATURE TYPE
COMMON-CATHODE, GRID No.1 & GRID No.2, DARK HEATER

For Combined Color Demodulator and Matrix Amplifier Applications in Color TV Receivers Having High-Level Demodulation Systems

ELECTRICAL CHARACTERISTICS

Bogey Values

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage, AC or DC</td>
<td>0.63 V</td>
</tr>
<tr>
<td>Heater Current</td>
<td>760 mA</td>
</tr>
</tbody>
</table>

Direct Interelectrode Capacitances

Without external shield

<table>
<thead>
<tr>
<th>Capacitance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cg3-p</td>
<td>2.7 pF</td>
</tr>
<tr>
<td>Cg1-all</td>
<td>15.5 pF</td>
</tr>
<tr>
<td>Cg3-all</td>
<td>6.0 pF</td>
</tr>
<tr>
<td>Cp-all</td>
<td>3.7 pF</td>
</tr>
<tr>
<td>Cg3-g3</td>
<td>0.10 pF</td>
</tr>
</tbody>
</table>

For the following characteristics, with both units operating, see Conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Resistance</td>
<td>50000 Ω</td>
</tr>
<tr>
<td>Grid-No.1-to-Plate Transconductance</td>
<td>5800 μmhos</td>
</tr>
<tr>
<td>Grid-No.3-to-Plate Transconductance</td>
<td>350 μmhos</td>
</tr>
<tr>
<td>DC Plate Current</td>
<td>7.6 mA</td>
</tr>
<tr>
<td>DC Grid-No.2 Current&lt;sup&gt;a&lt;/sup&gt;</td>
<td>14.5 mA</td>
</tr>
<tr>
<td>Cutoff DC Grid-No.1 Voltage</td>
<td>-6.3 V</td>
</tr>
<tr>
<td>Cutoff DC Grid-No.3 Voltage&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-16.5 V</td>
</tr>
</tbody>
</table>

Conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage</td>
<td>6.3 V</td>
</tr>
<tr>
<td>DC Plate Voltage</td>
<td>100 V</td>
</tr>
<tr>
<td>DC Grid-No.3 (Control-Grid) Voltage</td>
<td>0 V</td>
</tr>
<tr>
<td>DC Grid-No.2 (Screen-Grid) Voltage</td>
<td>100 V</td>
</tr>
<tr>
<td>DC Grid-No.1 (Control-Grid) Voltage</td>
<td>-2.5 V</td>
</tr>
</tbody>
</table>
MECHANICAL CHARACTERISTICS

Operating Position. ......................... Any
Type of Cathode ......................... Coated Unipotential
Maximum Overall Length .................. 3-1/16 in
Maximum Seated Length .................. 3-13/16 in
Length, Base Seat to Bulb Top ................ 2-7/16 ± 3/32 in
          Excluding tip
Diameter. ......................... 0.750 to 0.875 in
Envelope. ......................... JEDEC T6-1/2
Dimensional Outline (JEDEC 6-4) ................. See General Section
Base. ......................... Small-Button Noval 9-Pin (JEDEC E9-1)

TERMINAL DIAGRAM (Bottom View)

Pin 1 - Plate of Unit No. 2
Pin 2 - Grid No. 3 of Unit No. 2
Pin 3 - Cathode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Plate of Unit No. 1
Pin 7 - Grid No. 3 of Unit No. 1
Pin 8 - Grid No. 2
Pin 9 - Grid No. 1

DESIGN MAXIMUM RATINGS

DC Plate Voltage (Each unit) .................. \( E_b \) 300 V
DC Grid-No.2 Voltage .................. \( E_{c2} \) 150 V
Heater-Cathode Voltage
                    Peak. ......................... \( e_{hk,m} \) \{+200 V
                    Average \(^{c}\) .................. \( E_{hk,av} \) 100 V
Heater Voltage, AC or DC .................. \( E_f \) 5.7 to 6.9 V
Grid-No.2 Input .................. \( P_{g2} \) 2 W
Plate Dissipation (Each unit) .................. \( P_b \) 2 W

\(^a\) Units in parallel (PP1 connected to PP2; G3P1 connected to G3P2).
\(^b\) For this test, \( E_{c1} = -3 \) V so that the Grid-No.2 Input rating will not be exceeded.
\(^c\) Measured with a dc meter.
Typical Plate Characteristics
Each Unit, with Both Units Operating

$E_f = 6.3 \text{ VOLTS}$
GRID-NO.2 VOLTS = 100
GRID-NO.1 VOLTS = -2.5

PLATE VOLTS

PLATE MILLIAMPERES

0 50 100 150 200

2.5

5

7.5

10

12

GRID-NO.3 VOLTS (EACH UNIT) = $E_{C3 TO}$

Typical Plate Characteristics
Each Unit, with Both Units Operating

$E_f = 6.3 \text{ VOLTS}$
GRID-NO.3 VOLTS = 0 (EACH UNIT)
GRID-NO.2 VOLTS = 100

PLATE VOLTS

PLATE MILLIAMPERES

0 50 100 150 200

0

5

10

15

20

25

30

35

GRID-NO.1 VOLTS $E_{C1} = 0$

92CS-13460