MEDIUM-MU TWIN TRIODE
9-PIN MINIATURE TYPE

Intended for use in equipment having series heater-string arrangement

GENERAL DATA

Electrical:
Heater, for Unipotential Cathodes:

<table>
<thead>
<tr>
<th>Heater arrangement</th>
<th>Series</th>
<th>Parallel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>12.6</td>
<td>6.3</td>
</tr>
<tr>
<td>Current</td>
<td>0.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Warm-up time (Average)</td>
<td>—</td>
<td>11</td>
</tr>
</tbody>
</table>

For definition of heater warm-up time and method of determining it, see sheet HEATER WARM-UP TIME MEASUREMENT at front of this Section.

Direct Interelectrode Capacitances (Approx.):\(^0\)

<table>
<thead>
<tr>
<th></th>
<th>Unit No. 1</th>
<th>Unit No. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to plate</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Grid to cathode</td>
<td>3.2</td>
<td>3.2</td>
</tr>
<tr>
<td>Plate to cathode</td>
<td>0.5</td>
<td>0.4</td>
</tr>
<tr>
<td>Plate of unit No.1 to plate of unit No.2</td>
<td>0.8</td>
<td>µµf</td>
</tr>
</tbody>
</table>

Mechanical:

Mounting Position ................................................ Any
Maximum Overall Length................................. 2-5/8"
Maximum Seated Length................................. 2-3/8"
Length, Base Seat to Bulb Tap (Excluding tip) ... 2" ± 3/32"
Maximum Diameter........................................ 7/8"
Bulb. ................................................... T-6-1/2
Base. ..................................................... Small-Button Noval 9-Pin (JETEC No.E9-1)
Basing Designation for BOTTOM VIEW .................. 9A

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

AMPLIFIER - Class A\(^1\)
Values are for Each Unit

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE ........................................ 300 max. volts

\(^0\) Without external shield.

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TENTATIVE DATA 1
GRID VOLTAGE:
- Negative bias value ................. 50 max. volts
- Positive bias value ................. 0 max. volts
CATHODE CURRENT .................. 20 max. ma
PLATE DISSIPATION .................. 3.5 max. watts
PEAK HEATER-CATHODE VOLTAGE:
  Heater negative with respect to cathode .. 200 max. volts
  Heater positive with respect to cathode .. 200 max. volts

Characteristics:
Plate Voltage .................................. 250 volts
Grid Voltage .................................. -10.5 volts
Amplification Factor ....................... 16.5
Plate Resistance (Approx.) ................ 5300 ohms
Transconductance ......................... 3100 μhos
Plate Current ................................ 11.5 ma
Plate Current for grid voltage of -14 volts ................ 4 ma
Grid Voltage (Approx.) for plate current of 50 μamp .......... -23 volts

Maximum Circuit Values:
Grid-Circuit Resistance:
  For fixed-bias operation .............. 0.25 max. megohm
  For cathode-bias operation ........... 1.0 max. megohm

HORIZONTAL DEFLECTION OSCILLATOR
Values are for Each Unit

Maximum Ratings, Design-Center Values:
For operation in a 525-line, 30-frame system:
DC PLATE VOLTAGE .......................... 450 max. volts
PEAK NEGATIVE-PULSE GRID VOLTAGE  .... 600 max. volts
CATHODE CURRENT:
  Peak ..................................... 300 max. ma
  Average ................................ 20 max. ma
PLATE DISSIPATION ...................... 3.5 max. watts
PEAK HEATER-CATHODE VOLTAGE:
  Heater negative with respect to cathode .. 200 max. volts
  Heater positive with respect to cathode .. 200 max. volts

Maximum Circuit Values:
Grid-Circuit Resistance:
  For fixed-bias, grid-resistor bias, or cathode-bias operation ........ 2.2 max. megohms

* This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

▲ O: See next page.

MAR, 1, 1955
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

TUBE DIVISION
TENTATIVE DATA 1
VERTICAL DEFLECTION OSCILLATOR

Values are for Each Unit

Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system

VC PLATE VOLTAGE .................. 450 max. volts
PEAK NEGATIVE-PULSE GRID VOLTAGE ........ 400 max. volts

CATHODE CURRENT:
Peak .................................... 70 max. ma
Average ................................ 20 max. ma

PLATE DISSIPATION .................... 3.5 max. watts

PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode. 200 max. volts
Heater positive with respect to cathode. 200 max. volts

Maximum Circuit Values:

Grid-Circuit Resistance:
For fixed-bias, grid-resistor bias, or cathode-bias operation .............. 2.2 max. megohms

VERTICAL DEFLECTION AMPLIFIER

Values are for Each Unit

Maximum Ratings, Design-Center Values Except as Noted:

For operation in a 525-line, 30-frame system

DC PLATE VOLTAGE .................. 450 max. volts
PEAK POSITIVE-PULSE PLATE VOLTAGE†
(Absolute Maximum) .................. 1500 max. volts
PEAK NEGATIVE-PULSE GRID VOLTAGE ........ 250 max. volts

CATHODE CURRENT:
Peak .................................... 70 max. ma
Average ................................ 20 max. ma

PLATE DISSIPATION .................... 3.5 max. watts

PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode. 200 max. volts
Heater positive with respect to cathode. 200 max. volts

Maximum Circuit Values:

Grid-Circuit Resistance:
For cathode-bias operation .............. 2.2 max. megohms

† The dc component must not exceed 100 volts.

‡ As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

§ This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milli-seconds.

¶ Under no circumstances should this absolute value be exceeded.

MAR. 1, 1955

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AVERAGE PLATE CHARACTERISTICS
EACH TRIODE UNIT

$E_F = 12.6$ VOLTS
SERIES HEATER ARRANGEMENT

PLATE MILLIAMPERES

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