MEDIUM-MU TWIN TRIODE
9-PIN MINIATURE TYPE
For "on-off" control applications involving long periods of operation under cutoff conditions

GENERAL DATA

Electrical:
Heater, Pure Tungsten, for Unipotential Cathodes:
Heater arrangement Series Parallel
Voltage 12.6 ± 10% 6.3 ± 10% ac or dc volts
Current 0.15 0.3 amp
Microphonism Not Tested
Direct Interelectrode Capacitances (Approx.): 0

<table>
<thead>
<tr>
<th>Unit No. 1</th>
<th>Unit No. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to plate</td>
<td>1.5</td>
</tr>
<tr>
<td>Grid to cathode and heater</td>
<td>1.9</td>
</tr>
<tr>
<td>Plate to cathode and heater</td>
<td>0.5</td>
</tr>
<tr>
<td>Grid of unit No. 1 to grid of unit No. 2</td>
<td>0.1 max.</td>
</tr>
</tbody>
</table>

Characteristics, Class A, Amplifier (Each Unit):
Plate Voltage 67.5 volts
Grid Voltage 0 volts
Amplification Factor 21
Plate Resistance (Approx.) 6600 ohms
Transconductance 3200 μmhos
Plate Current 8.5 ma

Mechanical:
Mounting Position Any
Maximum Overall Length 2-3/16''
Maximum Seated Length 1-5/16''
Length, Base Seat to Bulb Top (Excluding tip) 1-9/16'' ± 3/32''
Maximum Diameter 7/8''
Dimensional Outline See General Section
Bulb T-6-1/2
Base Small-Button Naval 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
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

0 without external shield.

SEPT. 1, 1955
TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
MEDIUM-MU TWIN TRIODE

FREQUENCY DIVIDER IN COMPUTER SERVICE
and "ON-OFF" CONTROL SERVICE

Values are for Each Unit

Maximum Ratings, Absolute Values:

PLATE VOLTAGE: 250 max. volts
GRID VOLTAGE:
  Negative bias value: 100 max. volts
  Positive bias value: 0 max. volts
  Peak negative value: 200 max. volts
PLATE DISSIPATION: 2.5 max. watts
GRID INPUT: 0.5 max. watt
CATHODE CURRENT:
  Peak: 100 max. ma
  DC: 20 max. ma
PEAK HEATER-CATHODE VOLTAGE:
  Heater negative with respect to cathode: 90 max. volts
  Heater positive with respect to cathode: 90 max. volts
BULB TEMPERATURE (At hottest point on bulb surface): 120 max. °C

Typical Operation as Frequency Halfer:

<table>
<thead>
<tr>
<th>Cutoff Condition</th>
<th>Zero-Bias Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate-Supply Voltage</td>
<td>150</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>-15</td>
</tr>
<tr>
<td>Plate-Circuit Resistance</td>
<td>20000</td>
</tr>
<tr>
<td>Grid-Circuit Resistance</td>
<td>47000</td>
</tr>
<tr>
<td>Plate Current</td>
<td>0</td>
</tr>
</tbody>
</table>

Maximum Circuit Values:

Grid-Circuit Resistance:
  For fixed-bias operation: 0.5 max. meghohm
  For cathode-bias operation: 1.0 max. meghohm

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

<table>
<thead>
<tr>
<th>Note</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutoff Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plate Current</td>
<td>1</td>
<td>50 μamp</td>
</tr>
<tr>
<td>Difference in Plate Current Between Units</td>
<td>-</td>
<td>50 μamp</td>
</tr>
<tr>
<td>Zero-Bias Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plate Current</td>
<td>2</td>
<td>4.6 5.4 ma</td>
</tr>
<tr>
<td>Difference in Plate Current Between Units</td>
<td>-</td>
<td>0.8 ma</td>
</tr>
</tbody>
</table>

Note 1: For conditions with 12.6 volts on heater, plate-supply volts = 150, grid-supply volts = -15, plate-circuit resistance (ohms) = 20000, and grid-circuit resistance (ohms) = 47000.

Note 2: Conditions are same as for Note 1 except that grid-supply volts = 0.

SEPT. 1, 1955

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
AVERAGE OPERATION CHARACTERISTICS
FOR EACH UNIT

$E_p = 6.3$ VOLTS
PARALLEL HEATER ARRANGEMENT
GRID-CIRCUIT RESISTANCE (OHMS) = 47000

MAY 19, 1950
TUBE DEPARTMENT
92CM-7493