High-Mu Twin Triode

9-PIN MINIATURE TYPE
For High-Fidelity Audio-Amplifier Applications Critical as to Noise and Hum

GENERAL DATA

Electrical:
Heater, for Unipotential Cathodes:

<table>
<thead>
<tr>
<th>Series</th>
<th>Parallel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage (AC or DC)</td>
<td>12.6</td>
</tr>
<tr>
<td>Current</td>
<td>0.15 ± 6%</td>
</tr>
</tbody>
</table>

Direct Interelectrode Capacitances (Approx.):

<table>
<thead>
<tr>
<th>Unit No. 1</th>
<th>Unit No. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to plate</td>
<td>1.7</td>
</tr>
<tr>
<td>Grid to cathode and heater</td>
<td>1.6</td>
</tr>
<tr>
<td>Plate to cathode and heater</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Equivalent Noise and Hum Voltage (Referenced to Grid, Each Unit):

Average Value (RMS) | 1.8 μvolts
Measured in "true rms" units under the following conditions: Heater volts (AC) = 6.3; center-tap of heater transformer connected to ground; plate supply volts (DC) = 250; plate load resistor (megohms) = 0.1; cathode resistor (ohms) = 2700; cathode bypass capacitor (μf) = 100; grid resistor (ohms) = 0; amplifier frequency range 25 to 10000 cps.

Characteristics, Class A1 Amplifier (Each Unit):

| Plate Voltage | 100 | 250 volts |
| Grid Voltage | -1 | -2 volts |
| Amplification Factor | 100 | 100 |
| Plate Resistance (Approx.) | 80000 | 62500 ohms |
| Transconductance | 1250 | 1600 μmhos |
| Plate Current | 0.5 | 1.2 ma |

Mechanical:

Operating Position | Any |
Maximum Overall Length | 2-3/16" |
Maximum Seated Length | 1-15/16" |
Length, Base Seat to Bulb Top (Excluding tip) | 1-9/16" + 3/32" |
Diameter | 0.750" to 0.875" |
Dimensional Outline | See General Section |
Bulb | Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW ............... 9A

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

AMPLIFIER — CLASS A1

Values are for Each Unit

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE: ..................... 330 max. volts
GRID VOLTAGE:
    Negative-bias value. .............. 55 max. volts
    Positive-bias value. .............. 0 max. volts
PLATE DISSIPATION. .................. 1.2 max. watts
PEAK HEATER-CATHODE VOLTAGE:
    Heater negative with respect to cathode. 200 max. volts
    Heater positive with respect to cathode. 200* max. volts

Typical Operation as Resistance-Coupled Amplifier:

See RESISTANCE-COUPLED-AMPLIFIER CHART No. 25
at front of this Section

△ Without external shield.
● The dc component must not exceed 100 volts.
E_f = 6.3 VOLTS
PARALLEL HEATER ARRANGEMENT.