Medium-Mu Twin Triode

9-PIN MINIATURE TYPE
With Heater Having Controlled Warm-Up Time

GENERAL DATA

Electrical:
Heater, for Unipotential Cathodes:
  Voltage (AC or DC) .......... 6.3 volts
  Current .................. 0.6 ± 6% amp
  Warm-up time (Average) .......... 11 sec
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>3.6</td>
</tr>
<tr>
<td>Grid to cathode and heater</td>
<td>2.4</td>
</tr>
<tr>
<td>Plate to cathode and heater</td>
<td>0.34</td>
</tr>
<tr>
<td>Plate of unit No.1 to plate of unit No.2</td>
<td>1</td>
</tr>
</tbody>
</table>

Characteristics, Class A \(_1\) Amplifier (Each Unit):

| Plate Voltage | 90 | 250 | volts |
| Grid Voltage | 0 | -8 | volts |
| Amplification Factor | 20 | 20 |
| Plate Resistance (Approx.) | 6700 | 7700 | ohms |
| Transconductance | 3000 | 2600 | μmhos |
| Plate Current | 10 | 9 | ma |
| Plate Current for grid volts = 12.5 | - | 1.3 | ma |
| Grid Voltage (Approx.) for plate \(μa = 10\) | -7 | -18 | volts |

Mechanical:

Operating Position: ................. Any
Maximum Overall Length: ................. 2-5/8"
Maximum Seated Length: ................. 2-3/8"
Length, Base Seat to Bulb Top (Excluding tip): 2" ± 3/32"
Diameter: 0.750" to 0.875"
Dimensional Outline: See General Section
Bulb: T6-1/2
Base: Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW: 9LP

Pin 1—Plate of Unit No.2
Pin 2—Grid of Unit No.2
Pin 3—Cathode of Unit No.2
Pin 4—Heater
Pin 5—Heater
Pin 6—Plate of Unit No.1
Pin 7—Grid of Unit No.1
Pin 8—Cathode of Unit No.1
Pin 9—No Connection
6FQ7

AMPLIFIER — Class A1
Values are for Each Unit

Maximum Ratings, Design-Maximum Values:
PLATE VOLTAGE: 330 max. volts
GRID VOLTAGE:
Positive-bias value: 0 max. volts
CATHODE CURRENT: 22 max. ma
PLATE DISSIPATION:
Either plate: 4 max. watts
Both plates (Both units operating): 5.7 max. watts
PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode: 200 max. volts
Heater positive with respect to cathode: 200a max. volts

Typical Operation as Resistance-Coupled Amplifier:
See RESISTANCE-COUPLED AMPLIFIER CHART No.29 at front of this Section

Maximum Circuit Values:
Grid-Circuit Resistance:
For fixed-bias operation: 1 max. megohm

HORIZONTAL-DEFLECTION OSCILLATOR
Values are for Each Unit

Maximum Ratings, Design-Maximum Values:
For operation in a 525-line, 30-frame systemc
DC PLATE VOLTAGE: 330 max. volts
PEAK NEGATIVE-PULSE GRID VOLTAGE: 660 max. volts
CATHODE CURRENT:
Peak: 330 max. ma
Average: 22 max. ma
PLATE DISSIPATION:
Either plate: 4 max. watts
Both plates (Both units operating): 5.7 max. watts
PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode: 200 max. volts
Heater positive with respect to cathode: 200b max. volts

Maximum Circuit Values:
Grid-Circuit Resistance: 2.2 max. megohms

VERTICAL-DEFLECTION OSCILLATOR
Values are for Each Unit

Maximum Ratings, Design-Maximum Values:
For operation in a 525-line, 30-frame systemc
DC PLATE VOLTAGE: 330 max. volts
PEAK NEGATIVE-PULSE GRID VOLTAGE: 440 max. volts
CATHODE CURRENT:
Peak: 77 max. ma
Average: 22 max. ma
PLATE DISSIPATION:
  Either plate. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 4 max. watts
  Both plates (Both units operating). . . 5.7 max. watts

PEAK HEATER-CATHODE VOLTAGE:
  Heater negative with
    respect to cathode. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200 max. volts
  Heater positive with
    respect to cathode. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 200\(^b\) max. volts

Maximum Circuit Values:
Grid-Circuit Resistance . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 2.2 max. megohms

\(^a\) Without external shield.
\(^b\) The dc component must not exceed 100 volts.
\(^c\) As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.
AVERAGE PLATE CHARACTERISTICS
Each Unit

$E_f = 6.3 \text{ VOLTS}$

PLATE MILLIAMPERES