RCA-6SF5

HIGH-MU TRIODE
Single-Ended Metal Type

The 6SF5 is a new metal high-mu triode featuring single-ended construction with interlead shielding between grid and heater within the base. The shielding reduces the hum voltage picked up by the grid lead from the heater leads, and permits operation with a satisfactory hum level. The electrical characteristics of the 6SF5 are similar to those of type 6F5.

From a circuit standpoint, the single-ended construction offers distinct advantages in comparison with corresponding types previously available, as follows: (1) elimination of loose or broken grid leads, (2) wiring can be completed below the set panel, (3) heater appearance of the chassis, (4) lowered cost, and (5) simplification of tube renewal.

TENTATIVE CHARACTERISTICS and RATINGS

<table>
<thead>
<tr>
<th>HEATER VOLTAGE (A.C. or D.C.)</th>
<th>6.3 Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEATER CURRENT</td>
<td>0.3 Ampere</td>
</tr>
<tr>
<td>DIRECT INTERELECTRODE CAPACITANCES:</td>
<td></td>
</tr>
<tr>
<td>Grid to Plate</td>
<td>2.6 μf</td>
</tr>
<tr>
<td>Grid to Cathode</td>
<td>4.2 μf</td>
</tr>
<tr>
<td>Plate to Cathode</td>
<td>3.0 μf</td>
</tr>
<tr>
<td>MAXIMUM OVERALL LENGTH</td>
<td>2-5/8&quot;</td>
</tr>
<tr>
<td>MAXIMUM DIAMETER</td>
<td>1-5/16&quot;</td>
</tr>
<tr>
<td>BASE</td>
<td>Small Wafer Octal 6-Pin</td>
</tr>
</tbody>
</table>

* With shell connected to cathode.

Amplifier - Class A

OPERATING CONDITIONS and CHARACTERISTICS:

<table>
<thead>
<tr>
<th>Heater Voltage *</th>
<th>6.3 Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>250 max. Volts</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>-2 Volts</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>100</td>
</tr>
<tr>
<td>Plate Resistance</td>
<td>66000 Ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>1500 Micromhos</td>
</tr>
<tr>
<td>Plate Current</td>
<td>0.9 Milliampere</td>
</tr>
</tbody>
</table>

* In circuits where the cathode is not directly connected to the heater, the potential difference between heater and cathode should be kept as low as possible.

INSTALLATION and APPLICATION

The 6SF5 is recommended for use in resistance-coupled circuits. Operating conditions are the same as those for type 6F5.

Outline Drawing

Same as for 6SJ7

Pin Connections

Pin 1 - Shell  Pin 5 - Plate
Pin 2 - Cathode  Pin 7 - Heater
Pin 3 - Grid  Pin 8 - Heater

(Pin numbers are according to RMA system)

Mounting Position

Vertical or Horizontal - No restrictions

September 19, 1938

from RMA release #144, Oct. 7, 1938
MECHANICAL DATA

Coated unipotential cathode

Outline drawing. 8-1
Base 86-23, small wafer octal 6-pin
Maximum diameter 1-5/16"
Maximum overall length 2-5/8"
Maximum seated height 2-1/16"
Pin connections
Pin 1 - Shell
Pin 2 - Cathode
Pin 3 - Grid
Pin 5 - Plate
Pin 7 - Heater
Pin 8 - Heater
Mounting position any

ELECTRICAL DATA

Ratings
Heater voltage 6.3 volts
Maximum plate voltage 300 volts
Maximum heater-cathode voltage 90 volts

Typical Operating Conditions and Characteristics, Class Al Amplifier
Heater voltage 6.3 volts
Heater current 300 ma
Plate voltage 250 volts
Grid voltage -1 -2 volts
Amplification factor 100 100
Plate resistance 85,000 66,000 ohms
Transconductance 1150 1500 µmhos
Plate current 0.4 0.9 ma

Typical Operating Conditions and Characteristics, Resistance Coupled Amplifier
Heater voltage 6.3 6.3 6.3 6.3 volts
Plate supply voltage 100 100 300 300 volts
Control grid voltage 0 0 0 0 volts
Plate load resistor 0.25 0.25 0.25 0.25 megohm
Control grid resistor 10 10 10 10 megohm
Input condenser .01 .005 .01 .005 µf
Output condenser .01 .005 .01 .005 µf
Grid resistor of following stage 0.5 1.0 0.5 1.0 megohm
Signal source impedance 0 0 0 0 ohms
Distortion 5 5 5 5 %
Output voltage (r.m.s.) 7 8.5 44 50 volts
Voltage gain 48 52 66 71

Refer to "Interpretation of Receiving Tube Ratings"