PENTAGRID CONVERTER

GENERAL DATA

Electrical:
Filament, Coated:
Voltage.................. 1.4 .................. dc volts
Current.................. 0.05 .................. amp
Direct Interelectrode Capacitances:
Grid No.4 to Plate 0.28 .................. µf
Mixer Input.............. 9.0 .................. µf
Mixer Output............. 5.5 .................. µf
Oscillator Input........ 2.4 .................. µf
Oscillator Output........ 4.8 .................. µf

Ω with external shield connected to negative filament terminal.

Mechanical:
Mounting Position............ Any
Maximum Overall Length....... 2-25/32"
Maximum Seated Length......... 2-1/4"
Maximum Diameter............... 1-3/16"
Gulp.................. T-9
Base.................. Lock-in 8-Pin
Easing Designation for BOTTOM VIEW........ 7AK

CONVERTER

Maximum Ratings, Design-Center Values:
PLATE VOLTAGE.................. 110 max. volts
GRIDS-No.3 & No.5 (SCREEN) VOLTAGE...... 45 max. volts
GRIDS-No.3 & No.5 SUPPLY VOLTAGE........ 110 max. volts
GRID-No.2 (ANODE-GRID) VOLTAGE........ 50 max. volts
GRID-No.2 SUPPLY VOLTAGE........... 110 max. volts
TOTAL CATHODE CURRENT........... 3.0 max. ma

Typical Operation:
Plate Voltage.................. 45 90 volts
Grids-No.3 & No.5 Voltage.................. 35 35 volts
Grid-No.2 Voltage.................. 45 45 volts
Grid-No.4 (Control-Grid)
Supply Voltage.................. 0 0 volts
Min. Grid-No.4 Resistor............ 1 1 megohm
Grid-No.1 (Oscillator-Grid) Resistor...... 0.2 0.2 megohm
Plate Resistance............... 0.3 0.65 megohm
Conversion Transconductance........ 250 275 µmhos
Conversion Transconductance (Approx.)#...... 5 5 µmhos

Ω, #: see next page.

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<table>
<thead>
<tr>
<th>Description</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Current</td>
<td>0.70</td>
<td>0.75</td>
<td>ma</td>
</tr>
<tr>
<td>Grids-No.3 &amp; No.5 Current</td>
<td>0.75</td>
<td>0.70</td>
<td>ma</td>
</tr>
<tr>
<td>Grid-No.2 Current</td>
<td>1.4</td>
<td>1.4</td>
<td>ma</td>
</tr>
<tr>
<td>Grid-No.1 Current</td>
<td>0.035</td>
<td>0.035</td>
<td>ma</td>
</tr>
<tr>
<td>Total Cathode Current</td>
<td>2.9</td>
<td>2.9</td>
<td>ma</td>
</tr>
</tbody>
</table>

* Obtained preferably by using a properly bypassed voltage-dropping resistor in series with the plate voltage supply. To avoid oscillation difficulties, the voltage of grids No.3 & No.5 must be at least 10 volts lower than the grid-No.2 voltage.

* For grid-No.4 bias of -3 volts.

**NOTE**: The characteristics of the oscillator section (not oscillating) are: transconductance = approx. 550 μmhos; \( \mu = 14 \); and grid-No.2 current = 2.7 ma. under the following conditions: plate volts = 90; grids No.3 & No.5 volts = 45; grid-No.4 volts = 0; grid-No.2 volts = 90; grid-No.1 volts = 0.