BEAM PENTODE

COATED UNIPOTENTIAL CATHODE

HEATER
25 Volts 300 mA.
AC OR DC
ANY MOUNTING POSITION

BOTTOM VIEW
INTERMEDIATE SHELL
6 PIN OCTAL
6CK

GLASS BULB

THE 25AV5GT IS A BEAM POWER AMPLIFIER INTENDED PRIMARILY FOR OPERATION WITH RELATIVELY LOW SUPPLY VOLTAGE AS A HORIZONTAL DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS. IT IS DESIGNED TO WITHSTAND HIGH-SURGE PLATE VOLTAGES FOR RELATIVELY SHORT PERIODS OF TIME. IT CAN BE USED WITH DIRECT OR WITH TRANSFORMER HORIZONTAL-YOKE DRIVE.

RATINGS
INTERPRETED ACCORDING TO RCA STANDARD MB-210
HORIZONTAL DEFLECTION AMPLIFIER

<table>
<thead>
<tr>
<th>HEATER VOLTAGE</th>
<th>25</th>
<th>VOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXIMUM HEATER-CATHODE VOLTAGE</td>
<td>180</td>
<td>VOLTS</td>
</tr>
<tr>
<td>MAXIMUM PLATE SUPPLY VOLTAGE</td>
<td>550</td>
<td>VOLTS</td>
</tr>
<tr>
<td>MAXIMUM PEAK POSITIVE PULSE PLATE VOLTAGE</td>
<td>500</td>
<td>VOLTS</td>
</tr>
<tr>
<td>MAXIMUM GRID #2 VOLTAGE</td>
<td>200</td>
<td>VOLTS</td>
</tr>
<tr>
<td>MAXIMUM GRID #1 VOLTAGE</td>
<td>-100</td>
<td>VOLTS</td>
</tr>
<tr>
<td>MAXIMUM PEAK NEGATIVE PULSE GRID #1 VOLTAGE</td>
<td>-400</td>
<td>VOLTS</td>
</tr>
<tr>
<td>MAXIMUM PLATE DISSIPATION</td>
<td>11</td>
<td>WATTS</td>
</tr>
<tr>
<td>MAXIMUM GRID #2 DISSIPATION</td>
<td>2.5</td>
<td>WATTS</td>
</tr>
<tr>
<td>MAXIMUM PLATE CURRENT</td>
<td>100</td>
<td>MA.</td>
</tr>
<tr>
<td>MAXIMUM GRID #1 CIRCUIT RESISTANCE</td>
<td>1</td>
<td>MEGOHM</td>
</tr>
</tbody>
</table>

A THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15% OF ONE SCANNING CYCLE AND THE DURATION OF THE PULSE MUST BE LIMITED TO 10 MICROSECONDS.

B VALUE GIVEN IS TO BE CONSIDERED AS THE ABSOLUTE VOLTAGE BEYOND WHICH THE SERVICEABILITY OF THE TUBE MAY BE IMPAIRED.

C THE USE OF A CATHODE RESISTOR OR OTHER SUITABLE PROTECTIVE DEVICE IS NECESSARY TO PROTECT THE TUBE IN EVENT OF LOSS OF EXCITATION AND CONSEQUENT LOSS OF DEVELOPED BIAS.

CONTINUED ON FOLLOWING PAGE

INDICATES A CHANGE OR ADDITION.
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ AMPLIFIER

| HEATER VOLTAGE | 25 | VOLTS |
| HEATER CURRENT | 300 | MA. |
| PLATE VOLTAGE | 250 | VOLTS |
| GRID #2 VOLTAGE | 150 | VOLTS |
| GRID #1 VOLTAGE | -22.5 | VOLTS |
| TRANSCONDUCTANCE | 5 500 | QMHOS |
| PLATE CURRENT | 55 | MA. |
| GRID #2 CURRENT | 2.1 | MA. |
| GRID #2 TO GRID #1 AMPLIFICATION FACTOR | 4.5 |

TRIODE CONNECTION (SCREEN TIED TO PLATE) WITH E_b = E_c = 150 VOLTS AND E_c1 = -22.5 VOLTS.

HORIZONTAL DEFLECTION AMPLIFIER

| 8APKA | 12KPRB | 16KPR |
| HEATER VOLTAGE | 25 | 25 | 25 | VOLTS |
| HEATER CURRENT | 300 | 300 | 300 | MA. |
| TOTAL PLATE VOLTAGE | 240 | 370 | 410 | VOLTS |
| PLATE SUPPLY VOLTAGE | 150 | 250 | 250 | VOLTS |
| BOOST VOLTAGE | 90 | 120 | 160 | VOLTS |
| GRID #2 SUPPLY VOLTAGE | 150 | 250 | --- | VOLTS |
| GRID #2 RESISTOR | 1000 | 1000 | --- | OHMS |
| GRID #2 VOLTAGE | 135 | 165 | 122 | VOLTS |
| CATHODE BIAS RESISTOR | 0 | 0 | 0 | OHMS |
| GRID #1 RESISTOR | 0.22 | 0.47 | 1 | MEGOHM |
| PEAK-TO-PEAK GRID SIGNAL VOLTAGE (APPROX.) | 90 | 90 | 220 | VOLTS |
| PEAK POSITIVE PULSE PLATE VOLTAGE (APPROX.) | 2.9 | 3.6 | 4.3 | KV. |
| PLATE CURRENT | 84 | 89 | 87 | MA. |
| GRID #2 CURRENT | 15 | 8.5 | 15 | MA. |
| GRID #1 CURRENT | 66 | 40 | 64 | UA. |
| PICTURE TUBE ANODE VOLTAGE | 8.7E | 10.8F | 12.8F | KV. |
| DEFLECTION ANGLE | 54 | 54 | 65 | DEGREES |
| SWEEP WIDTH | 7 3/4 | 11 1/2 | 13 1/2 | INCHES |

E MEASURED WITH 75 MICROAMPERES TOTAL PICTURE TUBE DRAIN.
F MEASURED WITH 100 MICROAMPERES TOTAL PICTURE TUBE DRAIN.
25AV5GT
PENTODE CONNECTION

$E_f = 25$ Volts
$E_{C2} = 115$ Volts

$E_{C4} = 45$

PLATE (I_b) OR GRID #2 (I_{C2}) MILLIAMPERES

PLATE VOLTS

25AV5GT
PENTODE CONNECTION

$E_f = 6.3$ Volts
$E_b = 250$ Volts

PLATE MILLIAMPERES

GRID #1 VOLTS
25AV5GT (6AV5GT)

25AV5GT
PENTODE CONNECTION
$E_f = 25$ Volts
$E_{C2} = 0$ Volts

PLATE MILLIAMPERES

300
300
200
200
100
100

0
0

100
200
300
400

PLATE VOLTS

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DIRECT INTERELECTRODE CAPACITANCES

GRID #1 TO PLATE: (G4 TO P) 0.7 µuf
INPUT: G4 TO (H+K+G3+G3) 14 µuf
OUTPUT: P TO (H+K+G2+G3) 7.0 µuf

RATINGS
INTERPRETED ACCORDING TO NMA STANDARD MB-210
HORIZONTAL DEFLECTION AMPLIFIER

HEATER VOLTAGE 6.3 VOLTS
MAXIMUM HEATER CATHODE VOLTAGE:
HEATER NEGATIVE WITH RESPECT TO CATHODE: 200 VOLTS
TOTAL DC AND PEAK
HEATER POSITIVE WITH RESPECT TO CATHODE:
DC 100 VOLTS
TOTAL DC AND PEAK 200 VOLTS
MAXIMUM DC PLATE SUPPLY VOLTAGE (BOOST + POWER SUPPLY) 550 VOLTS
MAXIMUM PEAK POSITIVE PLATE VOLTAGE (ABSOLUTE MAXIMUM) 550 VOLTS
MAXIMUM PEAK NEGATIVE PLATE VOLTAGE 1250 VOLTS
MAXIMUM PLATE DISSIPATION 11 WATTS
MAXIMUM PEAK NEGATIVE GRID #1 VOLTAGE 300 VOLTS
MAXIMUM DC GRID #2 VOLTAGE 175 VOLTS
MAXIMUM GRID #2 DISSIPATION 2.5 WATTS
MAXIMUM AVERAGE CATHODE CURRENT 110 MA.
MAXIMUM PEAK CATHODE CURRENT 400 MA.
MAXIMUM GRID #1 CIRCUIT RESISTANCE (AT HOTTEST POINT) 0.47 MEGOHM
MAXIMUM BULB TEMPERATURE (AT HOTTEST POINT) 210° CENTIGRADE

A FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS; FEDERAL COMMUNICATIONS COMMISSION". THE DUTY CYCLE OF THE VOLTAGE PULSE NOT TO EXCEED 15 PERCENT OF A SCANNING CYCLE.

B IN STAGES OPERATING WITH GRID-LEAK BIASE, AN ADEQUATE CATHODE BIASE RESISTOR OR OTHER SUITABLE MEANS IS REQUIRED TO PROTECT THE TUBE IN THE ABSENCE OF EXCITATION.
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A\textsubscript{2} AMPLIFIER

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEATER VOLTAGE</td>
<td>6.3 V</td>
</tr>
<tr>
<td>HEATER CURRENT</td>
<td>1.2 A</td>
</tr>
<tr>
<td>PENTODE OPERATION:C</td>
<td></td>
</tr>
<tr>
<td>PLATE CURRENT</td>
<td>55 MA</td>
</tr>
<tr>
<td>GRID #2 CURRENT</td>
<td>2.1 MA</td>
</tr>
<tr>
<td>TRANSCONDUCTANCE</td>
<td>5500 (\mu)HMS</td>
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<tr>
<td>PLATE RESISTANCE</td>
<td>20000 OHMS</td>
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<tr>
<td>ZERO-BIAS:D</td>
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<tr>
<td>PLATE CURRENT</td>
<td>225 MA</td>
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<tr>
<td>GRID #2 CURRENT</td>
<td>25 MA</td>
</tr>
<tr>
<td>CUT-OFF:E</td>
<td></td>
</tr>
<tr>
<td>GRID #1 VOLTAGE (APPROX.)</td>
<td>-46 V</td>
</tr>
<tr>
<td>TRIODE AMPLIFICATION FACTOR</td>
<td>4.3</td>
</tr>
</tbody>
</table>

\textsuperscript{C} WITH \(E_b = 250\) VOLTS, \(E_{C2} = 150\) VOLTS AND \(E_{C1} = -22.5\) VOLTS.

\textsuperscript{D} WITH \(E_b = 60\) VOLTS AND \(E_{C2} = 150\) VOLTS (INSTANTANEOUS VALUES).

\textsuperscript{E} FOR \(I_b = 1\) MA, WITH \(E_b = 250\) VOLTS AND \(E_{C2} = 150\) VOLTS.

\textsuperscript{F} WITH \(E_b = 0\), \(E_{C2} = 150\) VOLTS AND \(E_{C1} = -22.5\) VOLTS.

\(\rightarrow\) INDICATES A CHANGE OR ADDITION.