TWIN TRIODE
MINIATURE TYPE

COATED UNIPOTENTIAL CATHODE

CASCADE AMPLIFIER
FOR SERIES STRING VHF TELEVISION RECEIVERS

ANY MOUNTING POSITION

THE 4BC8 IS A MEDIUM-WU, SEMI-REMOTE CUT-OFF TWIN TRIODE USING THE 9 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED FOR USE AS A CASCADE AMPLIFIER IN 600 MA. SERIES HEATER OPERATED VHF TELEVISION RECEIVER TUNERS. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED.

DIRECT INTERELECTRODE CAPACITANCES
EXTERNAL SHIELD W315 CONNECTED TO PIN 9

<table>
<thead>
<tr>
<th>GRID TO PLATE (G TO P)</th>
<th>#1 TRIODE</th>
<th>#2 TRIODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATE TO CATHODE (P TO K)</td>
<td>→1.2</td>
<td>→1.2</td>
</tr>
<tr>
<td>HEATER TO CATHODE (H TO K)</td>
<td>→2.8</td>
<td>→2.8</td>
</tr>
<tr>
<td>#1 INPUT: G TO (H+K+1.S.)</td>
<td>→2.6</td>
<td>→5.5</td>
</tr>
<tr>
<td>#2 INPUT: K TO (H+G+1.S.)A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1 OUTPUT: P TO (H+K+1.S.)</td>
<td>1.3</td>
<td>→2.4</td>
</tr>
<tr>
<td>#2 OUTPUT: P TO (H+G+1.S.)A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1 PLATE TO #2 PLATE (1P TO 2P)(MAX.)</td>
<td>→.02</td>
<td></td>
</tr>
<tr>
<td>#2 PLATE TO #1 PLATE AND GRID: (2P TO 1P+1G) MAXIMUM</td>
<td>→.04</td>
<td></td>
</tr>
</tbody>
</table>

A HEAD AS GROUNDED GRID AMPLIFIER.

→ INDICATES A CHANGE.

CONTINUED ON FOLLOWING PAGE
HEATER CHARACTERISTICS AND RATINGS

AVERAGE CHARACTERISTICS

HEATER SUPPLY LIMITS:
CURRENT OPERATION 600 MA.

MAXIMUM HEATER CATHODE VOLTAGE:
HEATER NEGATIVE WITH RESPECT TO CATHODE
TOTAL DC AND PEAK 200 VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE
DC 100 VOLTS
TOTAL DC AND PEAK 200 VOLTS
HEATER WARM-UP TIME (AVG.) 11 SECONDS

MAXIMUM RATINGS

PLATE VOLTAGE 250 VOLTS
PLATE DISSIPATION 2.2 WATTS
CATHODE CURRENT 22 MA.
GRID CIRCUIT RESISTANCE 0.5 MEGOHM

TYPICAL OPERATING CHARACTERISTICS
CLASS A1 AMPLIFIER

EACH UNIT

PLATE VOLTAGE 150 VOLTS
CATHODE RESISTOR 220 OHMS
PLATE RESISTANCE 5300 OHMS
TRANSCONDUCTANCE 6200 µMHOSE
AMPLIFICATION FACTOR 35
PLATE CURRENT 10 MA.
GRID VOLTAGE (APPROX.) FOR GM =50 µMHOSE -13 VOLTS

B THIS RATING MAY BE AS HIGH AS 300 VOLTS UNDER CUTOFF CONDITIONS WHEN THE TUBE IS USED AS A CASCODE AMPLIFIER AND THE TWO SECTIONS ARE CONNECTED IN SERIES.

C HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 90% OF ITS RATED VOLTAGE AFTER APPLYING 1 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

DESIGN-MAXIMUM RATINGS ARE LIMITING VALUES OF OPERATING AND ENVIRONMENTAL CONDITIONS APPLICABLE TO A BOGEY ELECTRON DEVICES OF A SPECIFIED TYPE AS DEFINED BY ITS PUBLISHED DATA, AND SHOULD NOT BE EXCEEDED UNDER THE MOST PROBABLE CONDITIONS. THE DEVICE MANUFACTURER CHOOSES THESE VALUES TO PROVIDE ACCEPTABLE SERVICEABLE LIFE OF THE DEVICE, TAKING RESPONSIBILITY FOR THE EFFECTS OF CHANGES IN OPERATING CONDITIONS DUE TO VARIATIONS IN DEVICE CHARACTERISTICS. THE EQUIPMENT MANUFACTURER SHOULD DESIGN SO THAT INITIALLY AND THROUGHOUT LIFE NO DESIGN-MAXIMUM VALUE FOR THE INTENDED SERVICE IS EXCEEDED WITH A BOGEY DEVICE UNDER THE MOST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, SIGNAL VARIATION, AND ENVIRONMENTAL CONDITIONS.