### GENERAL DATA

**Electrical:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min.</th>
<th>Av.</th>
<th>Max.</th>
<th>Unit(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filament, Coated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>2.4</td>
<td>2.5</td>
<td>2.6</td>
<td>ac or dc volts</td>
</tr>
<tr>
<td>Current at 2.5 volts</td>
<td>19</td>
<td>21</td>
<td>23</td>
<td>amp</td>
</tr>
<tr>
<td>Minimum heating time prior to tube conduction</td>
<td>60</td>
<td></td>
<td></td>
<td>sec</td>
</tr>
<tr>
<td>Direct Interelectrode Capacitances (Approx.)</td>
<td>4</td>
<td></td>
<td></td>
<td>μF</td>
</tr>
<tr>
<td>Grid to anode</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grid to cathode</td>
<td>21</td>
<td></td>
<td></td>
<td>μF</td>
</tr>
<tr>
<td>Maximum Deionization Time</td>
<td>1000</td>
<td></td>
<td></td>
<td>μsec</td>
</tr>
<tr>
<td>Maximum Critical Grid Current</td>
<td>10</td>
<td></td>
<td></td>
<td>μAmp</td>
</tr>
</tbody>
</table>

**Anode Voltage Drop:**

- Average, at beginning of life: 9 volts
- Maximum, at end of life: 12 volts

**Maximum Commutation Factor:**

- Averaged over first 350 volts of inverse anode voltage rise: 0.66 va/μs²

**Grid Control Ratio (Approx.):**

For conditions: 10000-ohm grid resistor, circuit returns to filament transformer center-tap, filament pin 2 negative with respect to filament pin 3 when anode is positive, dc anode voltage, and dc grid voltage: 210

### Mechanical:

- Mounting Position: Vertical, base down
- Maximum Overall Length: 9-1/2”
- Maximum Diameter: 2-1/32”
- Weight (Approx.): 7 oz
- Cap.: Medium (JETEC No. C1-5)
- Bulb: Medium-Metal-Shell Super-Jumbo 4-Pin (JETEC No. A4-81)
- Base: 4BZ

**Basing Designation for BOTTOM VIEW:**

- Pin 1: Grid
- Pin 2: Filament
- Pin 3: Filament
- Pin 4: No Connection

**Grid-Controlled Rectifier Service**

### Maximum Ratings, Absolute Values:

**PEAK ANODE VOLTAGE:**

- Forward: 1000 max. volts
- Inverse: 1250 max. volts

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*: See next page.
GRID VOLTAGE:
Peak, before tube conduction ........ -100 max. volts

ANODE CURRENT:
  Peak .................................. 77 max. amp
  Average ................................ 6.4 max. amp
  Overload:
    0.5 sec .... 77 max. amp
    1 sec ..... 38.5 max. amp
    2 sec ..... 19.2 max. amp
    3 sec ..... 12.8 max. amp
    4 sec ..... 9.6 max. amp
    5 sec ..... 7.7 max. amp
    Rating II**, for duration of .......
    3 sec ..... 12.8 max. amp
    4 sec ..... 11.2 max. amp
    5 sec ..... 10.3 max. amp
    6 sec ..... 9.6 max. amp

Fault, for duration of 0.1 second maximum. ............ 770 max. amp

AMBIENT-TEMPERATURE RANGE ........... -55 to +75 °C

- Defined as the product of the rate of current decay in amperes per microsecond just before conduction ceases and the rate of inverse voltage rise in volts per microsecond following current conduction.
- Averaged over any period of 6 seconds.
* Averaged over duration of overload occurring no more than once in any period of 30 seconds.
** Averaged over duration of overload occurring no more than once in any period of 30 seconds.

OPERATING CONSIDERATIONS

The anode of the C6J-A/5685 will show a red color when the tube is operated at full load.

Sufficient anode-circuit resistance, including the tube load, must be used under any conditions of operation to prevent exceeding the current ratings of the tube.
OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

RANGE IS FOR CONDITIONS WHERE:
E_F = 2.5 VOLTS ± 5% ; CIRCUIT RETURNS TO CENTER-TAP OF FILAMENT TRANSFORMER. FILAMENT VOLTAGE AT PIN 2 IS (−) WHEN ANODE VOLTAGE IS (+). THE RANGE INCLUDES INITIAL AND LIFE VARIATIONS OF INDIVIDUAL TUBES, GRID RESISTOR 0 TO 10000 OHMS, AMBIENT TEMPERATURE = −55 TO +75°C.

<table>
<thead>
<tr>
<th>DC GRID SUPPLY VOLTS</th>
<th>ANODE VOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>−12</td>
<td>1000</td>
</tr>
<tr>
<td>−6</td>
<td>800</td>
</tr>
<tr>
<td>0</td>
<td>600</td>
</tr>
<tr>
<td>+6</td>
<td>400</td>
</tr>
<tr>
<td>+9</td>
<td>200</td>
</tr>
</tbody>
</table>

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