ADVANCE DATA

MECHANICAL DATA

Bulb: T-5 1/2
Base: E7-1, Miniature Button 7-Pin
Outline: 5-2
Basing: 7GM
Cathode: Coated Unipotential
Mounting Position: Any

ELECTRICAL DATA

HEATER CHARACTERISTICS AND RATINGS

Average
Characteristics 2HK5 3HK5 4HK5 6HK5
Heater Operation Series Series Series Parallel
Heater Voltage 2.3 2.9 4.0 6.31 Volts
Heater Current 6001 4501 3001 - 190 Ma
Heater Warmup Time2 11 11 - - Sec.

Ratings (Design Maximum Values)4

Min-Max Min-Max Min-Max Min-Max
Heater Voltage3 5.7-6.9 Volts
Heater Current3 560-640 420-480 280-320 - Ma
Maximum Heater-Cathode Voltage
Heater Negative with Respect to Cathode
Total DC and Peak 100 100 100 100 Volts
Heater Positive with Respect to Cathode
Total DC and Peak 100 100 100 100 Volts

DIRECT INTERELECTRODE CAPACITANCES (Shield No. 316)

Grid to Plate .29 μf
Input: g to (h+k+I.S.+E.S.) 4.4 μf
Output: p to (h+k+I.S.+E.S.) 2.6 μf
Heater to Cathode 2.5 μf

RATINGS (Design Maximum Values)4

Plate Voltage 200 Volts Max.
Plate Dissipation 2.3 Watts Max.
DC Cathode Current 22 Ma Max.
Negative Grid Voltage 50 Volts Max.
Grid Circuit Resistance (Self Bias) 1.0 Megohms Max.

NOTE: Control grid to cathode spacing on this type is of such
low order of magnitude as to preclude the use of voltage between

from JEDEC release #4066, Jan. 7, 1963
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these elements of more than 30 volts dc or peak ac in commercial tube checkers and shorts indicating devices, particularly where mechanical excitation of the tube is employed.

CHARACTERISTICS AND TYPICAL OPERATION

Class A1 Amplifier

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>135 Volts</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>-1.0 Volts</td>
</tr>
<tr>
<td>Plate Current</td>
<td>12.5 Ma</td>
</tr>
<tr>
<td>Transconductance</td>
<td>16,000 µmhos</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>75</td>
</tr>
<tr>
<td>Plate Resistance (approx.)</td>
<td>5,000 Ohms</td>
</tr>
<tr>
<td>Ec for Gm = 150 µmhos (approx.)</td>
<td>-5.0 Volts</td>
</tr>
<tr>
<td>Ec for Gm = 1500 µmhos (approx.)</td>
<td>-2.6 Volts</td>
</tr>
<tr>
<td>Input Resistance (200 mc)⁵</td>
<td>600 Ohms</td>
</tr>
<tr>
<td>Input Capacitance (200 mc)⁵</td>
<td>9.0 µuf</td>
</tr>
<tr>
<td>Noise Figure (200 mc)⁵</td>
<td>4.2 db</td>
</tr>
</tbody>
</table>

NOTES:

1. For series/parallel operation of heaters, equipment should be designed that at normal supply voltage bogey tubes will operate at this value of heater current/voltage.

2. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.

3. Heater voltage supply variations shall be restricted to maintain heater voltage/current within the specified values.

4. Design Maximum Ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

   The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

   The equipment manufacturer should design so that initially and throughout life no design maximum value for the intended service is exceeded with a bogey tube under the worst probable operation conditions with respect to supply voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

5. Measured under grounded plate conditions.

6. Optimized neutralized triode RF amplifier stage, noise matched.