GENERAL CHARACTERISTICS (1)

ELECTRICAL

Filament: Thoriated Tungsten
Voltage 7.5 +/- 0.37 Volts
Current 21.5 Amps (nominal)
Amplification Factor (Average) (Mu) 24
Interelectrode Capacitance (Grounded Cathode) (2)
Input 13.0 pF
Output 0.5 pF
Grid Plate 8.0 pF

MECHANICAL

Base 5 Pin Special
Mounting Position Vertical, base down or up
Cooling Radiation and forced air
Recommended Heat-Dissipating Plate Connector HR-8
Recommended Air-System Socket SK-510
Recommended Air-System Chimney SK-516
Maximum Operating Temperatures:
Plate Seal 225°C
Base Seals 200°C
Maximum Overall Dimensions:
Height 7.875 Inches 200 mm
Diameter 5.250 Inches 133 mm
Net Weight 1.2 lb 0.62 kg
Shipping Weight 7.8 lb 3.60 kg
MECHANICAL
RF INDUSTRIAL OSCILLATOR  Class-C (Filtered DC Power Supply)

MAXIMUM RATINGS
DC Plate Voltage  6000 volts
DC Plate Current  700 mA
Grid Dissipation  50 watts
Plate Dissipation  850 watts

TYPICAL OPERATION
DC Plate Voltage  5000 Volts
DC Plate Current  55 Amps
DC Grid Voltage  250 Volts
DC Grid Current  71 mA
Peak Grid Voltage  425 Volts
Plate Input Power  2750 W
Plate Dissipation  650 W
Plate Output Power  2100 W
Approximate Load Impedance  4800 Ohms

Note: "TYPICAL OPERATION" data are obtained by calculation from published characteristic curves. No allowance for circuit losses has been made.

RANGE VALUES FOR EQUIPMENT DESIGN

<table>
<thead>
<tr>
<th></th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filament Current at 7.5 volts</td>
<td>20</td>
<td>22.7 A</td>
</tr>
</tbody>
</table>

Interelectrode Capacitance
(Grounded Cathode Connection) (1)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cin</td>
<td>15.0</td>
<td>19.0 pF</td>
</tr>
<tr>
<td>Cout</td>
<td>—</td>
<td>1.0 pF</td>
</tr>
<tr>
<td>Cgp</td>
<td>7.0</td>
<td>9.0 pF</td>
</tr>
</tbody>
</table>

(1) Capacitance values are for a cold tube as measured in a special shielded fixture in accordance with Electronic Industries Association Standard RS-191.
APPLICATION

MOUNTING — The 3-1000H must be operated vertically, base up or base down. A flexible connecting strap should be provided between the HR-8 Heat Dissipating Connector on the plate terminal and the external plate circuit. The tube must be protected from severe vibration and shock. The SK-510 socket or equivalent must be employed to prevent excess lateral pressure on base pins and seal of the tube.

COOLING — Forced-air cooling is required to maintain the base seals at a temperature below 200°C and the plate seal at a temperature below 225°C. When using the SK-510 Air-System Socket and SK-516 Chimney, a minimum air flow rate of 25 cubic feet per minute at a static pressure of approximately 0.43 inch of water, as measured at the socket at sea level, is required to provide adequate cooling at an inlet air temperature of 50°C. Above 30 megahertz, the required air flow is increased to 35 cubic feet per minute at a static pressure of approximately 0.8 inch of water, as measured at the SK-510 socket. Cooling air must be supplied to the tube even when the filament alone is on during standby periods.

When a socket other than the SK-510 is used, provisions must be made for equivalent cooling of the base, the envelope, and the plate seal. In all cases, air flow rates in excess of the minimum requirements, will prolong tube life.

FILAMENT OPERATION — The rated filament voltage for the 3-1000H is 7.5 volts. Filament voltage, as measured at the socket, must be maintained within the range of 7.13 to 7.87 volts to obtain maximum tube life. Operation at reduced voltage decreases emission capability, but increases life expectancy.

HIGH VOLTAGE — Normal operating voltages used with the 3-1000H are deadly; the equipment must be designed properly and operating precautions must be followed. Design all equipment so that no one can come in contact with high voltages. All equipment must include safety enclosures for high-voltage circuits and terminals, with interlock switches to open primary circuits of the power supply and to discharge high-voltage condensers whenever access doors are opened. Interlock switches must not be bypassed or “cheated” to allow operation with access doors open. Always remember that HIGH VOLTAGE CAN KILL.

INTERELECTRODE CAPACITANCE — The actual internal inter-electrode capacitance of a tube is influenced by many variables in most applications; such as stray capacitance to the chassis, capacitance added by the socket used, stray capacitance between tube terminals and wiring effects. To control the actual capacitance values within the tube, as the key component involved, the industry and the military services.
3-1000H
HIGH MU
POWER TRIODE

DIMENSIONAL DATA

<table>
<thead>
<tr>
<th>DIM</th>
<th>MIN</th>
<th>MAX</th>
<th>REF</th>
<th>MIN</th>
<th>MAX</th>
<th>REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>7.500</td>
<td>7.875</td>
<td></td>
<td>190.5</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>6.812</td>
<td>7.187</td>
<td></td>
<td>173</td>
<td>182.5</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>—</td>
<td>5.250</td>
<td></td>
<td>—</td>
<td>133.3</td>
<td>—</td>
</tr>
<tr>
<td>D</td>
<td>3.062</td>
<td>3.187</td>
<td></td>
<td>77.77</td>
<td>80.95</td>
<td>—</td>
</tr>
<tr>
<td>E</td>
<td>0.531</td>
<td>0.656</td>
<td></td>
<td>13.49</td>
<td>16.66</td>
<td>—</td>
</tr>
<tr>
<td>F</td>
<td>0.718</td>
<td>0.843</td>
<td></td>
<td>18.24</td>
<td>21.41</td>
<td>—</td>
</tr>
<tr>
<td>G</td>
<td>—</td>
<td>—</td>
<td>1.500</td>
<td>—</td>
<td>38.10</td>
<td>—</td>
</tr>
<tr>
<td>H</td>
<td>0.559</td>
<td>0.573</td>
<td></td>
<td>14.20</td>
<td>14.55</td>
<td>—</td>
</tr>
<tr>
<td>J</td>
<td>0.371</td>
<td>0.377</td>
<td></td>
<td>9.42</td>
<td>9.57</td>
<td>—</td>
</tr>
<tr>
<td>K</td>
<td>—</td>
<td>—</td>
<td>60°</td>
<td>—</td>
<td>60°</td>
<td>—</td>
</tr>
<tr>
<td>L</td>
<td>0.484</td>
<td>—</td>
<td></td>
<td>12.29</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>M</td>
<td>—</td>
<td>1.125</td>
<td></td>
<td>—</td>
<td>28.57</td>
<td>—</td>
</tr>
</tbody>
</table>