**HITACHI Eelectron Tube**

The HITACHI 2M121A is a fixed frequency continuous wave magnetron intended for use in microwave ovens and industrial heating applications.

The useful RF power output at 2450 MHz band is approx. 1400 watts into a matched load.

**FEATURES**

1. Suitable performance and excellent reliability for use in microwave ovens and industrial microwave heating applications.

2. Sufficient Noise suppression with the improvement of integrated filter circuit.

3. Low 5th harmonics type: 2M121A-400S

**GENERAL DATA**

**ELECTRICAL**

- Filament Voltage (Stand-by)  
  4.6 V
- Filament Voltage (Operation)  
  (Fig. 1)
- Filament Current (Stand-by)  
  14 A
- Filament Pre-heating Time  
  5 sec
- Frequency (with matched load)  
  2455 MHz
- Recommending Operation  
  Continuous
- Anode Potential  
  Grounded
- Filament Potential  
  Negative High Voltage
  - 4.5 kV
- Magnet  
  Permanent Magnet

**MECHANICAL**

- Dimensions: See dimensional outline (Fig. 5).
  - Width: 105 mm MAX.
  - Length: 127 mm MAX.
  - Height (antenna height is excluded.): 109 mm MAX.
  - Antenna height: 32 mm MAX.
- Weight: Approx. 1.4 kg
- Mounting Position: any
- Cooling: Forced Air (Fig. 4)

**ABSOLUTE MAXIMUM RATINGS**

<table>
<thead>
<tr>
<th></th>
<th>Min.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filament Voltage (Stand-by)</td>
<td>4.3</td>
<td>5.0</td>
<td>V</td>
</tr>
<tr>
<td>Filament Voltage (Operation)</td>
<td>(Fig. 1)</td>
<td>(Fig. 1)</td>
<td>V</td>
</tr>
<tr>
<td>Preheating Time</td>
<td>3 s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Anode Current</td>
<td>-</td>
<td>500</td>
<td>mA dc</td>
</tr>
<tr>
<td>Peak Anode Current</td>
<td>-</td>
<td>1800</td>
<td>mA dc</td>
</tr>
<tr>
<td>Average Anode Input</td>
<td>-</td>
<td>2250</td>
<td>W</td>
</tr>
<tr>
<td>Load VSWR (Continuously)</td>
<td>-</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Anode Core Temperature</td>
<td>-</td>
<td>160</td>
<td>°</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-30</td>
<td>60</td>
<td>°</td>
</tr>
<tr>
<td>Antenna Temperature (metal-ceramic seal point)</td>
<td>-</td>
<td>350</td>
<td>°</td>
</tr>
<tr>
<td>Case Temperature</td>
<td>-</td>
<td>100</td>
<td>°</td>
</tr>
</tbody>
</table>
TYPICAL OPERATION

Test conditions: at a matched load, and with the power supply of single phase full-wave rectifier without filter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filament Voltage (Stand-by)</td>
<td>4.6 V</td>
</tr>
<tr>
<td>Filament Voltage (Operation)</td>
<td>3.8 V</td>
</tr>
<tr>
<td>Average Anode Current</td>
<td>450 mA</td>
</tr>
<tr>
<td>Peak Anode Voltage</td>
<td>4.5 kV</td>
</tr>
<tr>
<td>Average Power Output (matched load)</td>
<td>1400 W</td>
</tr>
<tr>
<td>Frequency (matched load)</td>
<td>2455 MHz</td>
</tr>
<tr>
<td>Cooling Air Flow</td>
<td>1.5 m³/min</td>
</tr>
<tr>
<td>Static Pressure Drop</td>
<td>147 Pa</td>
</tr>
</tbody>
</table>

Note:

1. The information contained herein is tentative and may be changed without prior notice. It is therefore advisable to contact HITACHI before proceeding with the design of equipment incorporating this product.

2. Data are based on the Testing Methods for Continuous Wave Magnetrons ED-1501 (ET-145A) set by the Electronic Industries Association of Japan (EIAJ).

3. Precautions for Safety: Please see attached news letter of No. NL73M1053.

Fig. 1  Reduction Chart of Filament Voltage
Fig. 2  Performance Chart of The 2M121A

Test conditions
1. Load VSWR : σL ≤ 1.1
2. Anode supply : Single phase, full wave rectifier without filter
3. Filament voltage : 4.6 V

Fig. 3(A)  Rieke Diagram of The 2M121A

Test conditions
1. Average anode current : 450 mA
2. Anode supply : Single phase, full wave rectifier without filter
3. Filament voltage : 4.6 V
Fig. 3(B)  Rieke Diagram of The 2M121A

Fig. 4(A)  Cooling Requirements of The 2M121A
Air Flow vs. Static Pressure

Fig. 4(B) Cooling Requirements of The 2M121A

Fig. 5 Dimensional Outline of The 2M121A
Fig. 6  Details of Output Coupling Portion and Recommended Launcher Design

(1) Materials : Stainless Steel
(2) Flatness of Lip : 0.1 mm max.
(3) Contacting Pressure to Gasket : 20 to 40 kg

Fig. 7  Launcher and Tapered Waveguide for Testing