Linac Products

Coaxial Magnetrons
VMX3095
VMX3045
VMX3100HP
VMC3109

Power Supply Modulators
VZX3555
Coaxial Magnetrons

General Overview

A magnetron is a high power microwave oscillator in which the potential energy of an electron cloud near the cathode is converted into RF energy in a series of cavity resonators. Linac magnetrons can be used in medical linear accelerators to accelerate electrons to create X-rays used in radiation therapy and in cargo screening security systems.

The Linac magnetron produces pulsed high-frequency electromagnetic waves to accelerate electrons to high energies through a linear accelerator to create X-rays in targeting cancer cells or efficiently scanning freight for various security irregularities.

For more coaxial magnetrons products:
www.cpii.com/bmd

VMX3095 1.7 MW X-Band Coaxial Pulsed Magnetrons

- High frequency stability
- Tunable ± 20 MHz
- 1.70 MW peak output power
- 1.70 kW average output power
- .001 duty cycle
- Liquid cooled anode
- Long life (>5,000 hours)

VMX3045 400 kW X-Band Coaxial Pulsed Magnetrons

- High frequency stability
- Tunable ± 30 MHz
- 400 kW peak output power
- 400 W average output power
- Long life (>2,000 hours)

VZX3555 Power Supply Modulators

- Uses the CPI VMX3045 magnetron as the RF output device
- 400kW peak / 400 W average output power
- Excellent frequency stability
- Compact power supply design with excellent reliability
- Safe operation in any orientation
- Air cooled
Applications:

- Cargo screening / security
- Medical linear accelerators

VMX3100HP 1.5 MW X-Band Coaxial Pulsed Magnetrons

- High frequency stability
- Tunable ± 30 MHz
- 1.50 MW peak output power
- 2.70 kW average output power
- .0018 duty cycle
- Liquid cooled anode
- Long life (>5,000 hours)

VMC3109 2.5 MW C-Band Coaxial Pulsed Magnetrons

- High frequency stability
- Tunable ± 10 MHz
- 2.50 MW peak output power
- 2.50 kW average output power
- Liquid cooled anode
- Long life (>20,000 hours)
**Linac Coaxial Magnetrons**

**Typical Operating Parameters**

<table>
<thead>
<tr>
<th></th>
<th>VMX3095</th>
<th>VMX3045</th>
<th>VMX3100HP</th>
<th>VMC3109</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td>9.3 GHz± 20MHz</td>
<td>9.3 GHz± 30MHz</td>
<td>9.3 GHz± 30MHz</td>
<td>5.7 GHz± 10MHz</td>
</tr>
<tr>
<td><strong>Peak Power Output</strong></td>
<td>1.70 MW</td>
<td>400 kW</td>
<td>1.50 MW</td>
<td>2.50 MW</td>
</tr>
<tr>
<td><strong>Average Power Output</strong></td>
<td>1.70 kW</td>
<td>400 W</td>
<td>2.70 kW</td>
<td>2.50 kW</td>
</tr>
<tr>
<td><strong>Pulse Voltage</strong></td>
<td>34-37 kV</td>
<td>27-29.5 kV</td>
<td>34-37 kV</td>
<td>45-50 kV</td>
</tr>
<tr>
<td><strong>Peak Anode Current</strong></td>
<td>90 A</td>
<td>28 A</td>
<td>90 A</td>
<td>110 A</td>
</tr>
<tr>
<td><strong>Average Anode Current</strong></td>
<td>85 to 95 mA</td>
<td>28 mA</td>
<td>162 mA</td>
<td>110 mA</td>
</tr>
<tr>
<td><strong>Pulse Width</strong></td>
<td>4.5 μS,± 0.5 μS</td>
<td>3.5 μS,± 0.25 μS</td>
<td>3.5 μS,± 1.0 μS</td>
<td>4.0 μS,± 0.5 μS</td>
</tr>
<tr>
<td><strong>Duty Cycle</strong></td>
<td>0.001</td>
<td>0.001</td>
<td>0.0018</td>
<td>0.001</td>
</tr>
<tr>
<td><strong>Maximum Filament Voltage</strong></td>
<td>10 V</td>
<td>15 V</td>
<td>20 V</td>
<td>18 V</td>
</tr>
<tr>
<td><strong>Maximum Filament Current</strong></td>
<td>15 A</td>
<td>3.6 A</td>
<td>20 A</td>
<td>15 A</td>
</tr>
<tr>
<td><strong>Minimum Warm-Up Time</strong></td>
<td>300 S</td>
<td>150 S</td>
<td>300 S</td>
<td>300 S</td>
</tr>
<tr>
<td><strong>Maximum Load VSWR</strong></td>
<td>1.1:1</td>
<td>1.1:1</td>
<td>1.1:1</td>
<td>1.1:1</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>40 lbs.</td>
<td>11 lbs.</td>
<td>40 lbs.</td>
<td>35 lbs.</td>
</tr>
</tbody>
</table>

**CPI: At the Heart of Leading Technologies**

Communications & Power Industries (CPI) develops, manufactures and globally distributes components and subsystems used in the generation, amplification, transmission and reception of microwave signals for a wide variety of systems including radar, electronic warfare and communications (satellite and point-to-point) systems for military and commercial applications, specialty products for medical diagnostic imaging and the treatment of cancer, as well as microwave and RF energy generating products for various industrial and scientific pursuits.

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