The EIMAC 3CX10,000A3 is a ceramic and metal power triode intended primarily for use as a power oscillator in industrial-heating applications. It is also recommended for use as a grounded-grid FM amplifier, as a conventional plate-modulated amplifier, or as a linear amplifier.

**ELECTRICAL**

- **Filament:** Thoriated-Tungsten
- **Voltage:** 7.5 V
- **Current:** 94 - 104 A
- **Amplification Factor:** 20
- **Interelectrode Capacitances, Grounded Cathode:**
  - **Input:** 48 - 58 pF
  - **Output:** 1.2 - 1.5 pF
  - **Feedback:** 30 - 38 pF

**General Characteristics**

<table>
<thead>
<tr>
<th>Min.</th>
<th>Nom.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>140 MHz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MECHANICAL**

- **Base:** Coaxial
- **Recommended Socket:** EIMAC SK-1300
- **Recommended Chimney:** EIMAC SK-1306
- **Operating Position:** Vertical, base up or down
- **Cooling:** Forced air
- **Maximum Operating Temperatures:**
  - **Anode Core:** 250°C
  - **Ceramic-to-Metal Seals:** 250°C
- **Maximum Dimensions:**
  - **Height:** 8.5 in
  - **Diameter:** 7.0 in
- **Net Weight:** 12 lb

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**R-F INDUSTRIAL OSCILLATOR**

**CLASS-C**

- **D-C Plate Voltage:** 6000 - 7000 volts
- **D-C Grid Voltage:** -575 - -670 volts
- **D-C Plate Current:** 4.0 - 4.0 amps
- **D-C Grid Current:** 610 - 670 mA
- **Plate Dissipation:** 10 KW
- **Grid Dissipation:** 250 WATTS

**TYPICAL OPERATION, Optimum Load**

- **D-C Plate Voltage:** 6000 - 7000 volts
- **D-C Grid Voltage:** 535 - 625 volts
- **D-C Plate Current:** 4.0 - 4.0 amps
- **D-C Grid Current:** 545 - 530 mA
- **Plate Input Power:** 24 - 28 kW
- **Plate Output Power:** 18.9 - 22.4 kW

**R-F POWER AMPLIFIER**

**GROUND-GRID, CLASS-C**

**MAXIMUM RATINGS**

- **D-C Plate Voltage:** 7000 VOLTS
- **D-C Grid Voltage:** 4.0 AMPS
- **D-C Plate Current:** 10 KW
- **D-C Grid Current:** 250 WATTS

**TYPICAL OPERATION**

- **D-C Plate Voltage:** 6000 - 7000 volts
- **D-C Grid Voltage:** 535 - 625 volts
- **D-C Plate Current:** 4.0 - 4.0 amps
- **D-C Grid Current:** 545 - 530 mA
- **Driving Power:** 3700 - 4100 watts
- **Plate Output Power:** 20.5 - 24.5 kW
R-F POWER AMPLIFIER  
PLATE-MODULATED, CLASS-C

MAXIMUM RATINGS
D-C PLATE VOLTAGE - - - 5500 VOLTS
D-C PLATE CURRENT - - - 3.0 AMPS
PLATE DISSIPATION - - - 6.5 KW
GRID DISSIPATION - - - 250 WATTS

TYPICAL OPERATION
D-C Plate Voltage - - - 4000 5000 volts
D-C Grid Voltage - - - -480 -600 volts
D-C Plate Current - - - 3.0 3.0 amps
D-C Grid Current - - - 660 550 mA
Driving Power - - - 530 515 watts
Plate Output Power - - - 9.7 12.4 kW

R-F LINEAR AMPLIFIER  
GROUND-GRID, CLASS-AB2

MAXIMUM RATINGS
D-C PLATE VOLTAGE - - - 7000 VOLTS
D-C PLATE CURRENT - - - 5.0 AMPS
PLATE DISSIPATION - - - 12 KW
GRID DISSIPATION - - - 250 WATTS

TYPICAL OPERATION
D-C Plate Voltage - - - 6000 7000 volts
Zero-Sig Grid Voltage* - - - -270 -325 volts
Max-Sig D-C Plate Current - - - 4.0 4.0 amps
Max-Sig D-C Grid Current - - - 300 250 mA
Driving Power - - - 1900 2050 watts
Plate Output Power - - - 18 20 kW

*Adjust to give 500 milliamperes zero-signal d-c plate current.

Note: "TYPICAL OPERATION" data are obtained by calculation from published characteristics curves and confirmed by direct tests. No allowance for circuit losses, either input or output, has been made.

APPLICATION

Cooling - The maximum temperature rating for the external surfaces of the 3CX10,000A3 is 250°C. Sufficient forced-air cooling must be provided to keep the temperature of the anode core and the temperature of the ceramic-metal seals below 250°C. Tube life is usually prolonged if these areas are maintained at temperatures below this maximum rating. Minimum air-flow requirements to maintain anode-core and seal temperatures below 225°C with an inlet-air temperature of 50°C are tabulated. The use of these air-flow rates through the recommended socket/chimney and tube combination in the base-to-anode direction provides effective cooling of the tube.

<table>
<thead>
<tr>
<th>Plate** Dissipation (Watts)</th>
<th>Sea Level</th>
<th>10,000 Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Air Flow (CFM)</td>
<td>Pressure Drop (Inches of Water)</td>
</tr>
<tr>
<td>4000</td>
<td>110</td>
<td>.25</td>
</tr>
<tr>
<td>6000</td>
<td>180</td>
<td>.53</td>
</tr>
<tr>
<td>8000</td>
<td>270</td>
<td>.95</td>
</tr>
<tr>
<td>10,000</td>
<td>373</td>
<td>1.55</td>
</tr>
<tr>
<td>12,000</td>
<td>448</td>
<td>2.00</td>
</tr>
</tbody>
</table>

**Since the power dissipated by the filament is about 750 watts and since grid dissipation can, under some circumstances, represent another 250 watts, allowance has been made in preparing this tabulation for an additional 1000 watts dissipation.
Filament Operation - The rated filament voltage for the 3CX10,000A3 is 7.5 volts. Filament voltage, as measured at the socket, should be maintained at this value to obtain maximum tube life. In no case should it be allowed to deviate from the rated value by more than five percent.

Special Applications - If it is desired to operate this tube under conditions widely different from those given here, write to Power Grid Tube Marketing, EIMAC Division of Varian, 301 Industrial Way, San Carlos, California 94070, for information and recommendations.

<table>
<thead>
<tr>
<th>REF</th>
<th>NOM.</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6.928</td>
<td>7.050</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>855</td>
<td></td>
<td>895</td>
</tr>
<tr>
<td>C</td>
<td>720</td>
<td></td>
<td>760</td>
</tr>
<tr>
<td>D</td>
<td>1.896</td>
<td>1.936</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>3.133</td>
<td>3.173</td>
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</tr>
<tr>
<td>F</td>
<td>3.792</td>
<td>3.832</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>188</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>188</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.950</td>
<td>4.300</td>
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</tr>
<tr>
<td>N</td>
<td>2.412</td>
<td>2.788</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>8.250</td>
<td>8.750</td>
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</tr>
<tr>
<td>R</td>
<td>986</td>
<td>1.050</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>3.412</td>
<td>3.788</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>.375</td>
<td></td>
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</tbody>
</table>

*CONTACT SURFACE
ALL DIMENSIONS IN INCHES

Indicates change from sheet dated 7-1-61
EIMAC 3CX10.000A3
TYPICAL
CONSTANT CURRENT
CHARACTERISTICS

GRID CURRENT — AMPERES
PLATE CURRENT — AMPERES

GRID VOLTAGE — VOLTS

PLATE VOLTAGE — VOLTS