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 useful as a grounded-grid FM amplifier, as a conventional plate-modulated amplifier at broadcast frequencies, or as a linear amplifier.

**GENERAL CHARACTERISTICS**

**ELECTRICAL**
- Filament: Thoriated-Tungsten
- Voltage: 7.5 volts
- Current: 100 amperes
- Amplification Factor: 20
- Interelectrode Capacitances:
  - Grid-Filament: 60 uuf
  - Grid-Plate: 40 uuf
  - Plate-Filament: 2.0 uuf
- Frequency for Maximum Ratings: 110 Mc

**MECHANICAL**
- Base: Coaxial
- Recommended Socket: Eimac SK-1300
- 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 inches
  - Diameter: 7.0 inches
- Net Weight: 12 pounds

**R-F INDUSTRIAL OSCILLATOR**

**CLASS-C**

<table>
<thead>
<tr>
<th>MAXIMUM RATINGS</th>
<th>TYPICAL OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-C PLATE VOLTAGE</td>
<td>D-C Plate Voltage 6000 7000 volts</td>
</tr>
<tr>
<td>D-C PLATE CURRENT</td>
<td>D-C Grid Voltage -575 -670 volts</td>
</tr>
<tr>
<td>PLATE DISSIPATION</td>
<td>D-C Plate Current 4.0 4.0 amps</td>
</tr>
<tr>
<td>GRID DISSIPATION</td>
<td>D-C Grid Current 610 670 ma</td>
</tr>
<tr>
<td>D-C Plate Voltage</td>
<td>Plate Input Power 24 28 kw</td>
</tr>
<tr>
<td>D-C PLATE CURRENT</td>
<td>Plate Output Power 18.9 22.4 kw</td>
</tr>
</tbody>
</table>

**R-F POWER AMPLIFIER**

**GROUNDED-GRID, CLASS-C**

<table>
<thead>
<tr>
<th>MAXIMUM RATINGS</th>
<th>TYPICAL OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-C PLATE VOLTAGE</td>
<td>D-C Plate Voltage 6000 7000 volts</td>
</tr>
<tr>
<td>D-C PLATE CURRENT</td>
<td>D-C Grid Voltage -535 -625 volts</td>
</tr>
<tr>
<td>PLATE DISSIPATION</td>
<td>D-C Plate Current 4.0 4.0 amps</td>
</tr>
<tr>
<td>GRID DISSIPATION</td>
<td>D-C Grid Current 545 530 ma</td>
</tr>
<tr>
<td>D-C PLATE VOLTAGE</td>
<td>Driving Power 3700 4100 watts</td>
</tr>
<tr>
<td>D-C PLATE CURRENT</td>
<td>Plate Output Power 20.5 24.5 kw</td>
</tr>
</tbody>
</table>

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R-F POWER AMPLIFIER
PLATE-MODULATED, CLASS-C

MAXIMUM RATINGS
D-C PLATE VOLTAGE  5500 MAX. VOLTS
D-C PLATE CURRENT  3.0 MAX. AMPS
PLATE DISSIPATION  6.5 MAX. KW
GRID DISSIPATION  250 MAX. 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 MAX. VOLTS
D-C PLATE CURRENT  4.0 MAX. AMPS
PLATE DISSIPATION  10 MAX. KW
GRID DISSIPATION  250 MAX. 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.

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 below.

<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>70</td>
<td>0.15</td>
</tr>
<tr>
<td>6000</td>
<td>152</td>
<td>0.36</td>
</tr>
<tr>
<td>8000</td>
<td>270</td>
<td>0.92</td>
</tr>
<tr>
<td>10,000</td>
<td>423</td>
<td>1.93</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 the Application Engineering Department, Eitel-McCulloch, Inc., 301 Industrial Way, San Carlos, California, for information and recommendations.

* Indicates change from sheet dated 8-15-40.
NOTE:
1. * DENOTES CONTACT SURFACE