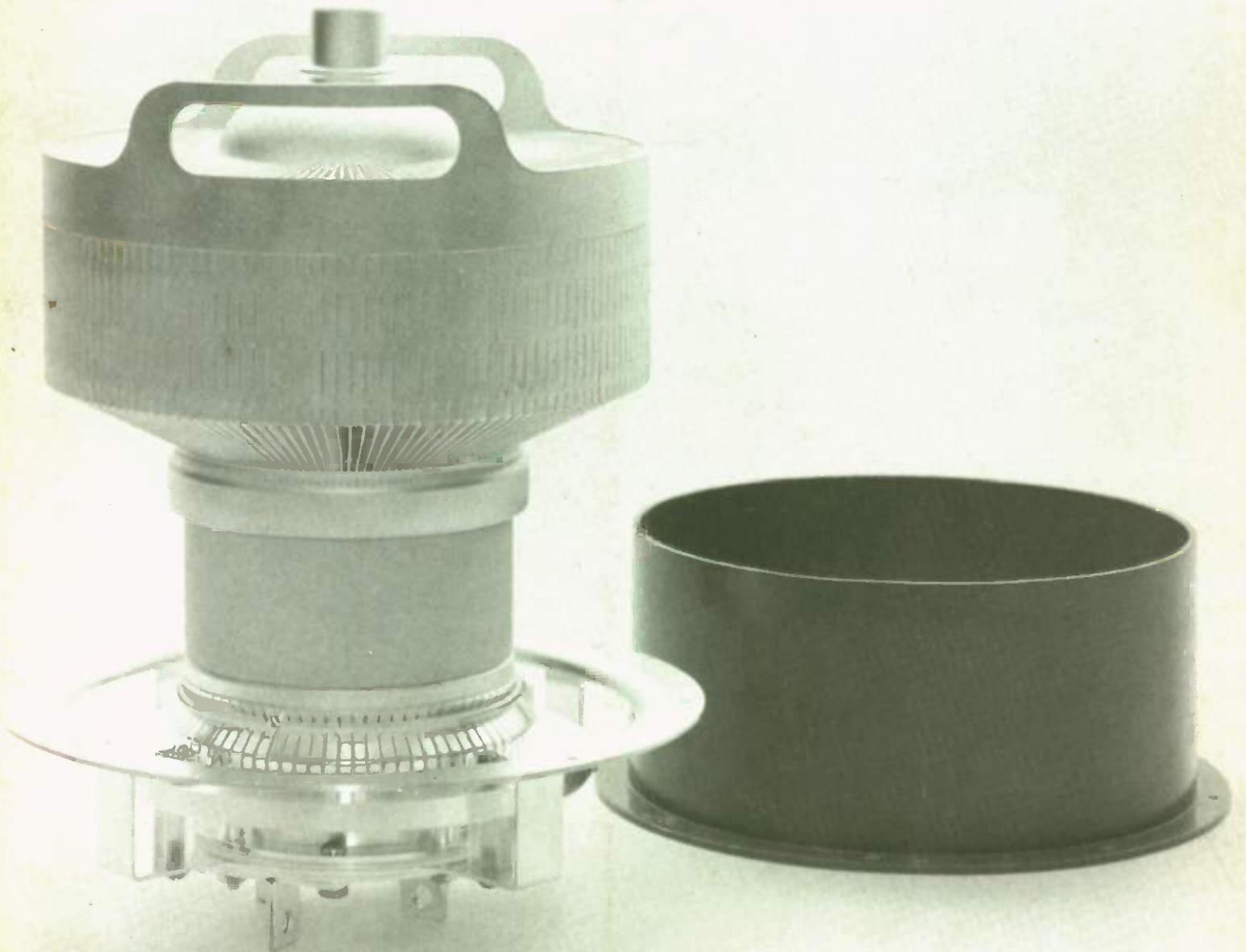




POWER GRID TUBES
QUICK REFERENCE CATALOG
EIMAC division of varian



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EIMAC division of Varian POWER GRID TUBES

EIMAC Division of Varian manufactures a complete line of vacuum tubes and accessories, including rectifiers, triodes, tetrodes, pentodes, pulse modulators, and associated equipment.

When Eitel-McCullough, Inc., merged with Varian Associates in 1965, the brand significance of the widely-known EIMAC symbol was retained, and EIMAC now operates as a division of Varian's Electron Tube and Device Group. EIMAC employs over 800 persons at the division's main plant in San Carlos, California, and another 350 at a recently-expanded factory in Salt Lake City, Utah.

Major production activity at the San Carlos plant covers the manufacture of ceramic / metal triodes, tetrodes and pentodes; glass and ceramic envelope tubes and a wide line of planar triodes are major production items at the Salt Lake City plant.

These two factories, among the most modern electronic tube production facilities in the country, have

all manufacturing areas designed on a "flow" system for maximum efficiency. Clean rooms for critical assembly work are ventilated with filtered and pressurized air, for maximum tube yield and reliability. Giant EIMAC-developed rotary vacuum pumps are in operation to produce high vacuums in thousands of tubes per day. Facilities for fabricating and processing ceramic materials include some of the most modern equipment available. Extensive environmental test equipment is also available for checking tube performance under unusual conditions of shock, vibration, humidity, and high altitude.

Quality assurance procedures are very rigid, and include both operator surveillance, batch sampling, and statistical controls.

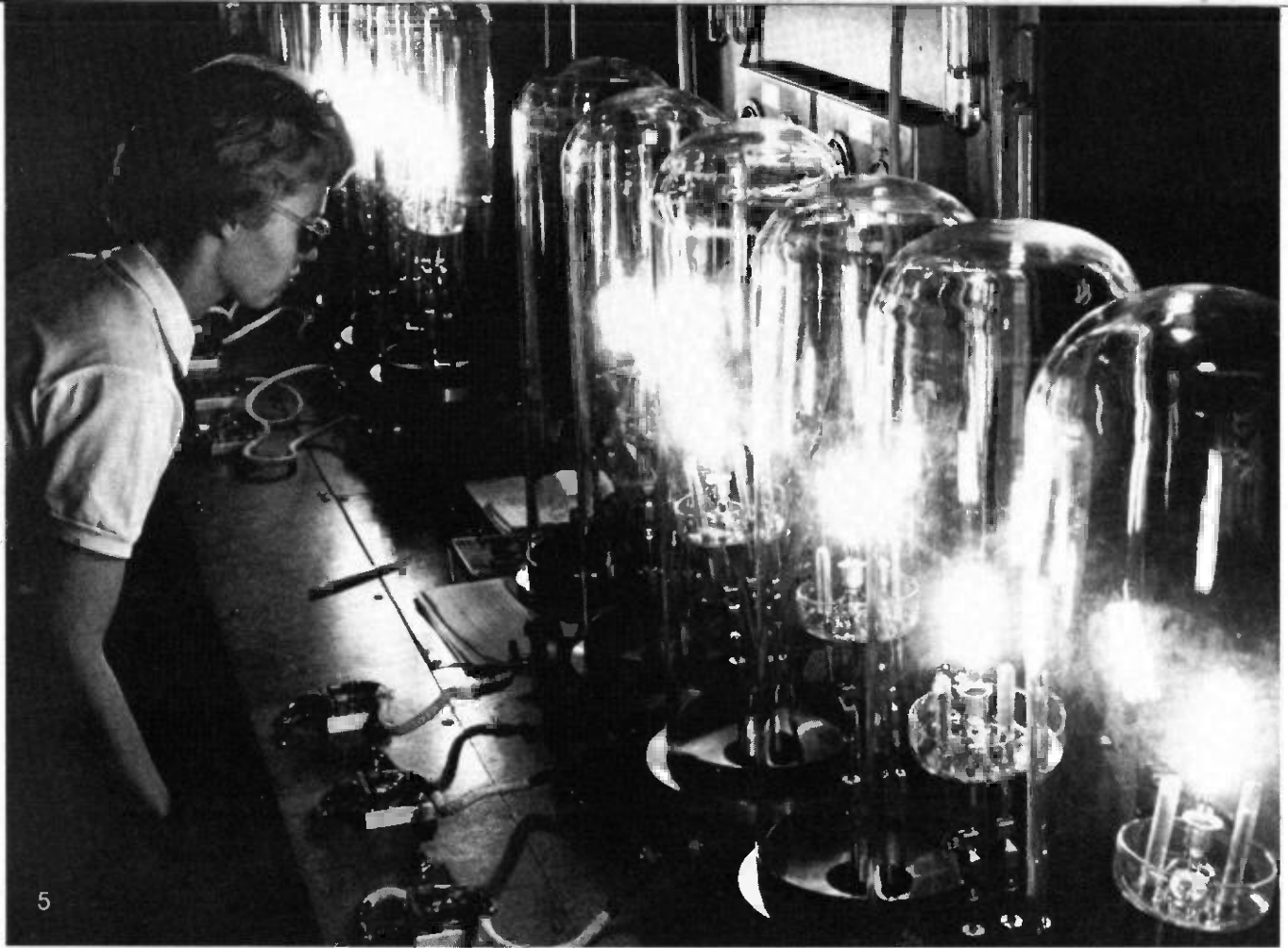
The division's tube development and circuit techniques laboratories are especially designed for production of experimental tube types and for modification of existing designs to meet special customer requirements.

Applications and marketing services are available from division headquarters in San Carlos, or from any of the 16 Varian Electron Tube and Device Group field offices throughout the country.

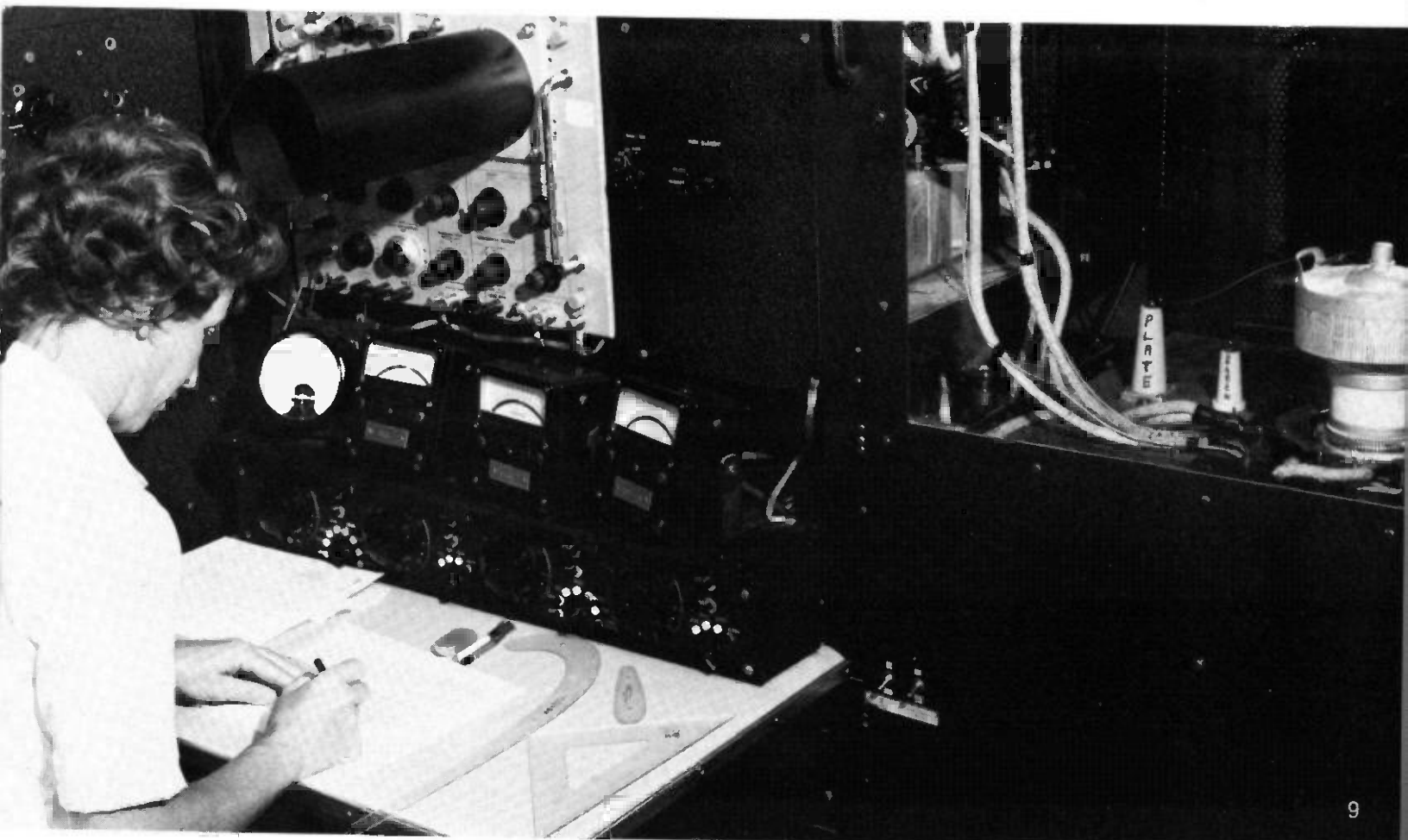
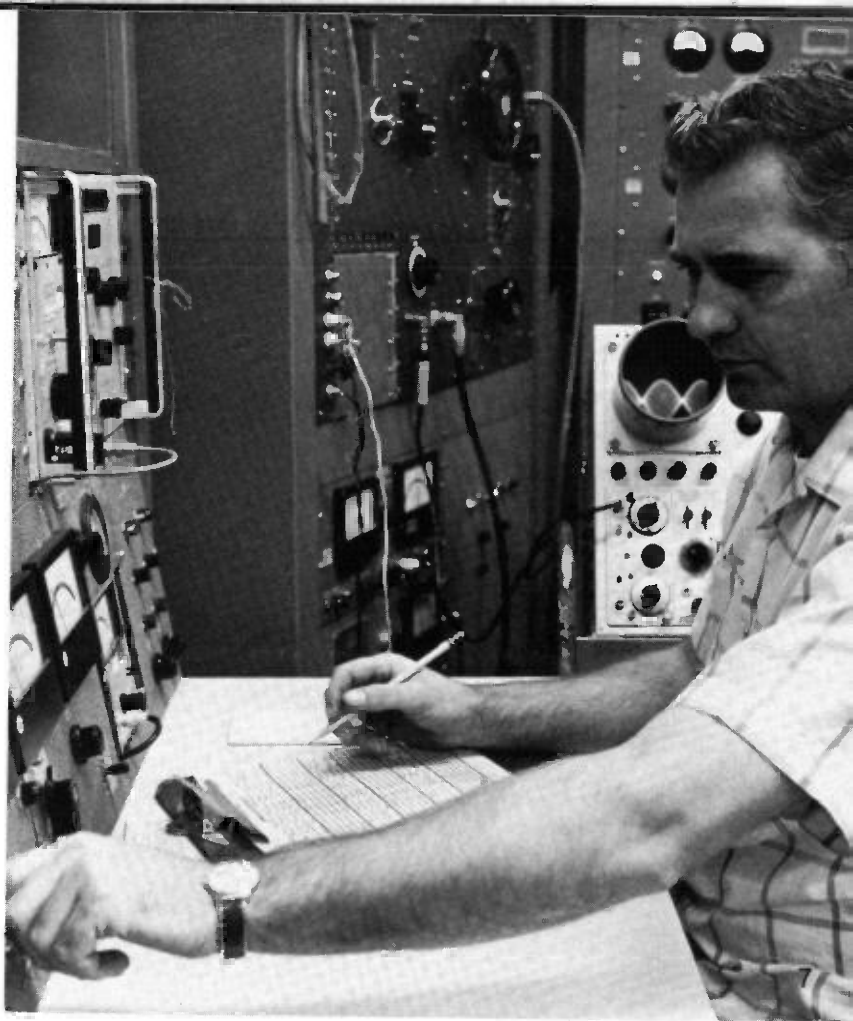
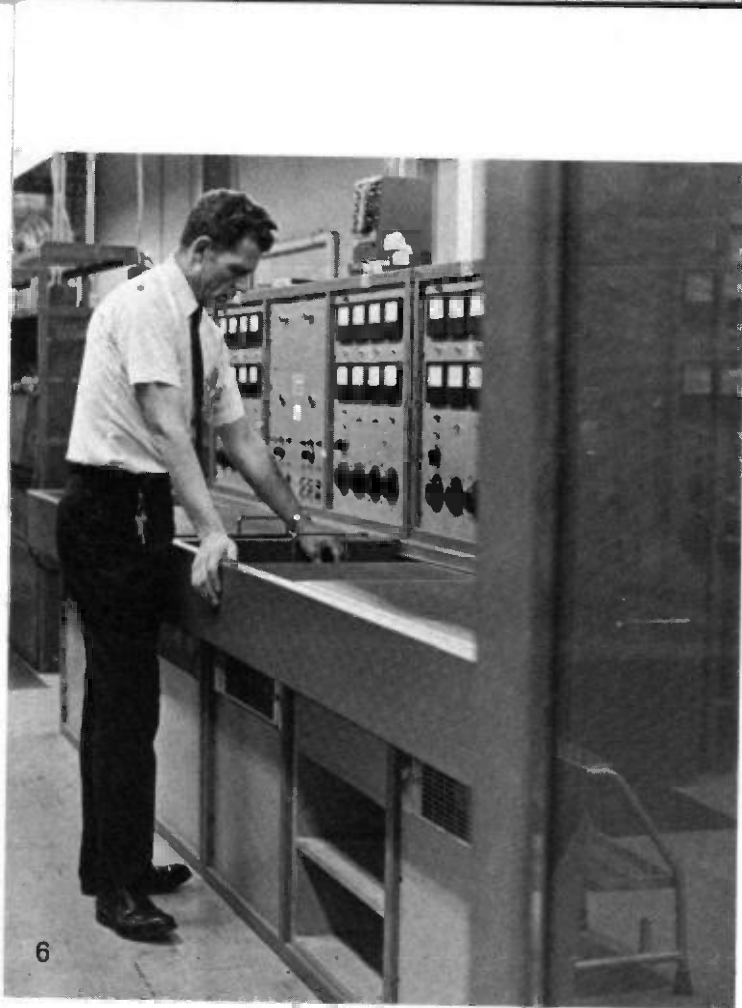


1. Hand-winding grid for 4CX250B—San Carlos
2. Sealing tube structure on glass lathe—Salt Lake City
3. Metallizing ceramic blanks in hydrogen furnace—San Carlos
4. Nitrogen atmosphere welder—San Carlos





5. Carburizing 4-400A filaments—Salt Lake City
6. Aging racks—San Carlos
7. Measuring tube linearity—San Carlos
8. Rotary exhaust furnaces—San Carlos
9. Curve plotter in development laboratory—San Carlos





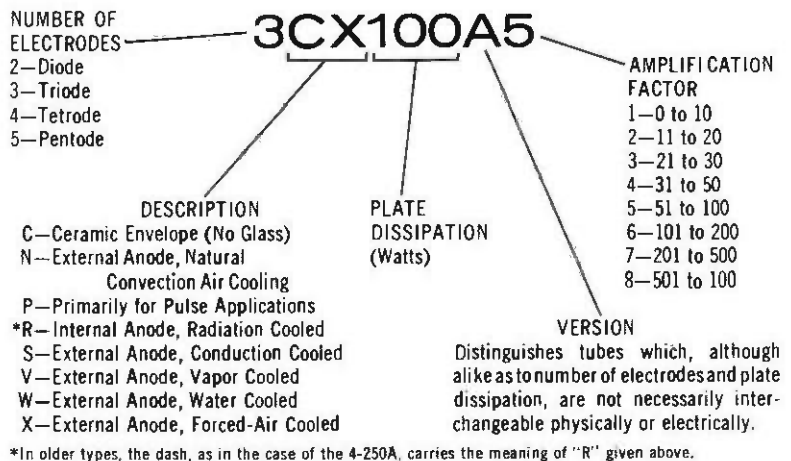
10. Aerial view of development and manufacturing plant in San Carlos, California: over 150,000 square feet. The EIMAC Salt Lake City facility occupies another 100,000 square feet.

Eimac Power Grid Tube Numbering System

Since 1945 all new tube types developed by Eimac have been given a type number chosen according to a coded number system. This system is designed to convey descriptive information about the tube.

In general, the type numbers consist of: a numeral indicating the number of electrodes, one or more letters denoting special characteristics, a numeral representing the plate dissipation, and a final letter to distinguish the tube from others bearing similar preceding letters and numerals. Triode types carry an additional number to indicate their approximate amplification factor.

To illustrate the method of coding and the information the type number conveys, a 100-watt, ceramic, external-anode, forced-air cooled Eimac triode, type number 3CX100A5, is broken down as follows:



This group of Eimac Power Grid Tubes are recommended for direct replacement only, and not for new equipment design.

DIODES AND RECTIFIERS

INTERNAL ANODE

| | |
|-----------|---------|
| 2-25A | 253 |
| 2-50A | 2-240A |
| 8020/100R | 250R |
| 2-150D | 2-2000A |

EXTERNAL ANODE

| | |
|---------|---------|
| 2X1000A | 2X3000F |
|---------|---------|

MERCURY VAPOR

| | |
|-------|-------|
| RX21A | KY21A |
|-------|-------|

TRIODES

INTERNAL ANODE

| | |
|-------|---------|
| 25T | 3-200A3 |
| 35T | 250TH |
| 35TG | 250TL |
| 826 | 304TH |
| 75TH | 304TL |
| 75TL | 450TH |
| 100TH | 450TL |
| 100TL | 750TL |
| 152TH | 1000T |
| 152TL | 1500T |
| 592 | 2000T |

The following Eimac Power Grid Tubes are current for new equipment design.

DIODES



2-01C

A general-purpose UHF instrument diode capable of maintaining an accuracy of ± 1 db to 700 megacycles. This diode is well suited to probe mounting and is useful as an indicator at frequencies as high as 3000 megacycles. The 2-01C is cooled by convection and radiation.

MAXIMUM RATINGS

| | |
|-------------------|--------------|
| PEAK INVERSE | 1000 volts |
| D-C CURRENT | 0.001 ampere |
| PLATE DISSIPATION | 0.1 watt |

CHARACTERISTICS

| | |
|-------------------------------------|---------------------|
| Cathode: Oxide-coated, unipotential | |
| Heater: | |
| Voltage | 5.0 volts |
| Current | 0.31 to 0.39 ampere |
| Max. Seal Temp. | 175 °C |
| Length | 1.813 inches |
| Diameter | 0.563 inches |
| Net Weight | 0.2 ounce |



322

The 322 is a ceramic and metal diode. This tube is widely used in T-R networks and as a demodulator in VHF omni range equipment.

MAXIMUM RATINGS

| | |
|-------------------|---------------|
| PEAK INVERSE | 800 volts |
| PLATE CURRENT | 0.125 amperes |
| PLATE DISSIPATION | 100 watts |

CHARACTERISTICS

| | |
|-------------------------------------|--------------------|
| Cathode: Oxide-coated, unipotential | |
| Heater: | |
| Voltage | 6.3 volts |
| Current | 0.9 to 1.0 amperes |
| Capacitance (Cpk) | 3.1 to 3.8 pf |
| Base | Coaxial |
| Socket | Special |
| Max. Seal Temp. | 250 °C |
| Max. Anode-Core Temp. | 250 °C |
| Length | 2.75 inches |
| Diameter | 1.265 inches |
| Net Weight | 2.5 ounces |

TRIODES

UHF



2C39A

The 2C39A is a ceramic-metal high- μ planar triode with a plate dissipation rating of 100 watts, designed for use as a power amplifier, oscillator, or frequency multiplier at frequencies to above 2500 MHz.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|--------------------------|-------------|
| Cathode: Oxide-coated, unipotential | Base | Coaxial |
| Heater: | Socket | Special |
| Voltage 6.3 volts | Maximum Seal Temp. | 250 °C |
| Current 0.95 to 1.10 amperes | Maximum Anode Core Temp. | 250 °C |
| Capacitances: | Maximum Height | 2.75 inches |
| Grid-Cathode 5.60 to 7.60 pf | Maximum Diameter | 1.27 inches |
| Grid-Plate 1.86 to 2.16 pf | Net Weight | 2.5 ounces |
| Plate-Cathode 0.035 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|------------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Cathode Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier | 1000 | 0.125 | 100 | 2.0 | 800 | 0.08 | 6.0 | 27 |
| C | Plate-Modulated Radio-Frequency Amplifier or Oscillator | 600 | 0.10 | 70 | 2.0 | 600 | 0.065 | 5.0 | 16 |
| C | Radio-Frequency Oscillator | 800 | 0.125 | 100 | 2.0 | 900 | 0.09 | — | 12 |



2C39WA

The 2C39WA is essentially the same as the 2C39A planar triode. It is recommended for replacement in equipment calling for this type.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|--------------------------|-------------|
| Cathode: Oxide-coated, unipotential | Base | Coaxial |
| Heater: | Socket | Special |
| Voltage 6.3 volts | Maximum Seal Temp. | 250 °C |
| Current 0.95 to 1.10 amperes | Maximum Anode Core Temp. | 250 °C |
| Capacitances: | Maximum Height | 2.75 inches |
| Grid-Cathode 5.60 to 7.60 pf | Maximum Diameter | 1.27 inches |
| Grid-Plate 1.86 to 2.16 pf | Net Weight | 2.5 ounces |
| Plate-Cathode 0.035 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|------------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Cathode Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier | 1000 | 0.125 | 100 | 2.0 | 800 | 0.08 | 6.0 | 27 |
| C | Plate-Modulated Radio-Frequency Amplifier or Oscillator | 600 | 0.10 | 70 | 2.0 | 600 | 0.065 | 5.0 | 16 |
| C | Radio-Frequency Oscillator 2500 MHz | 800 | 0.125 | 100 | 2.0 | 900 | 0.09 | — | 12 |



7211

A planar triode featuring one third more cathode current than the 3CX100A5. The 7211 is of all ceramic-metal construction. The plate-grid ceramic is longer than the 3CX100A5 making the tube more useful in pulse service or high altitude environments. Power output of 30 watts is available at 2500 MHz.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|--------------------------|-------------|
| Cathode: Oxide-coated, unipotential | Base | Coaxial |
| Heater: | Socket | Special |
| Voltage 6.3 volts | Maximum Seal Temp. | 250 °C |
| Current 1.3 amperes | Maximum Anode-Core Temp. | 250 °C |
| Capacitances: | Maximum Height | 2.75 inches |
| Grid-Cathode 8.0 pf | Maximum Diameter | 1.27 inches |
| Grid-Plate 2.25 pf | Net Weight | 2.5 ounces |
| Plate-Cathode 0.06 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier 500 MHz | 2500 | 0.19 | 100 | 2 | 900 | 0.14 | 9 | 65 |
| C | Radio-Frequency Power Amplifier 2500 MHz | 2500 | 0.19 | 100 | 2 | 900 | 0.14 | — | 30 |



7815/3CPN10A5

This ceramic and metal, UHF, planar triode is designed primarily for use in low-duty pulse applications. It is capable of delivering 1600 watts pulse output power at 3000 MHz at a duty of 0.0025.

The electrical characteristics of the 3CPN10A5 are similar to those of the 3CX100A5. The nominal plate dissipation rating of 10 watts may be exceeded if sufficient additional cooling is provided to maintain the anode and seal temperatures below the specified limits.

PLATE DISSIPATION 10 watts
FREQUENCY FOR MAXIMUM RATINGS 3000 MHz
COOLING Conduction or Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|---------------------|--------------|
| Cathode: Oxide-coated, unipotential | Base | Coaxial |
| Heater: | Socket | Special |
| Voltage 6.0 volts | Maximum Seal Temp. | 250 °C |
| Current 0.90 to 1.05 amperes | Maximum Anode Temp. | 250 °C |
| Capacitances: | Maximum Height | 2.70 inches |
| Grid-Cathode 5.60 to 7.00 pf | Maximum Diameter | 1.195 inches |
| Grid-Plate 1.86 to 2.15 pf | Net Weight | 1.6 ounces |
| Plate-Cathode 0.035 pf | | |

| Class of Operation | Type of Service | Maximum Pulse Ratings | | | | Typical Pulse Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-------------------------|----------------------|--------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Duty | Output Power (watts) |
| C | Plate-Pulsed Power Oscillator—3000 MHz | 3,500 | 3.0 | 10 | 2 | 3,500 | 3.0 | 0.0025 | 1,600 |
| C | Grid Pulsed Amplifier—1100 MHz | 2,500 | 3.0 | 10 | 2 | 2,200 | 1.9 | 0.001 | 2,000 |

TRIODES

UHF



7698

A ceramic-metal pulse planar triode usable to 3000 MHz. As a grid-pulsed amplifier at 1100 MHz or a plate pulsed amplifier at 3000 MHz, 2500 watts of power output is attainable. Cooling is by convection and conduction to a suitable heat sink.

PLATE DISSIPATION 10 watts
FREQUENCY FOR MAXIMUM RATINGS 3000 MHz
COOLING Conduction and Convection

CHARACTERISTICS

| | | | |
|-------------------------------------|-------------|--------------------------|--------------|
| Cathode: Oxide-coated, unipotential | | Base | Coaxial |
| Heater: | | Maximum Seal Temp. | 250 °C |
| Voltage | 6.3 volts | Maximum Anode-Core Temp. | 250 °C |
| Current | 1.3 amperes | Maximum Height | 2.276 inches |
| Capacitances: | | Maximum Diameter | 1.195 inches |
| Grid-Cathode | 8.0 pf | Net Weight | 1.6 ounces |
| Grid-Plate | 2.25 pf | | |
| Plate-Cathode | 0.06 pf | | |

| Class of Operation | Type of Service | Maximum Pulse Ratings | | | | Typical Pulse Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-------------------------|----------------------|--------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Duty | Output Power (watts) |
| C | Plate-Pulsed Power Oscillator—3000 MHz | 3500 | 5.0 | 10 | 2 | 3500 | 4.8 | 0.0025 | 2500 |
| C | Grid-Pulsed Amplifier—1100 MHz | 2000 | 5.0 | 10 | 2 | 2000 | 3.0 | 0.001 | 2500 |



7289/3CX100A5

The 3CX100A5 ceramic and metal planar UHF triode is intended to supersede all tubes in the 2C39A family. Narrow mechanical tolerances plus exacting electrical testing assure tube-to-tube uniformity. The tube unilaterally replaces 2C39A's and other associated tube types in most equipments without requiring electrical or mechanical modification.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|-------------------------------------|----------------------|--------------------------|--------------|
| Cathode: Oxide-coated, unipotential | | Base | Coaxial |
| Heater: | | Maximum Seal Temp. | 250 °C |
| Voltage | 6.0 volts | Maximum Anode-Core Temp. | 250 °C |
| Current | 0.90 to 1.05 amperes | Maximum Height | 2.701 inches |
| Capacitances: | | Maximum Diameter | 1.264 inches |
| Grid-Cathode | 5.6 to 7.0 pf | Net Weight | 2.5 ounces |
| Grid-Plate | 1.95 to 2.15 pf | | |
| Plate-Cathode | 0.035 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|------------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Cathode Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier and Oscillator—500 MHz | 1000 | 0.125 | 100 | 2 | 900 | 0.090 | 6 | 40 |
| C | Radio-Frequency Power Amplifier or Oscillator—2500 MHz | 1000 | 0.125 | 100 | 2 | 900 | 0.090 | — | 17 |
| C | Plate-Modulated Radio-Frequency Power Amplifier or Oscillator—500 MHz | 600 | 0.100 | 70 | 2 | 600 | 0.065 | 5 | 16 |



8250/3CX100F5

The 3CX100F5 ceramic and metal planar UHF triode features narrow mechanical tolerances plus exacting electrical testing assures tube-to-tube uniformity.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|-------------------------------------|---------------------|--------------------------|--------------|
| Cathode: Oxide-coated, unipotential | | Base | Coaxial |
| Heater: | | Maximum Seal Temp. | 250 °C |
| Voltage | 26.5 volts | Maximum Anode-Core Temp. | 250 °C |
| Current | 0.2 to 0.24 amperes | Maximum Height | 2.701 inches |
| Capacitances: | | Maximum Diameter | 1.264 inches |
| Grid-Cathode | 5.6 to 7.0 pf | Net Weight | 2.5 ounces |
| Grid-Plate | 1.95 to 2.15 pf | | |
| Plate-Cathode | 0.035 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|------------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Cathode Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier and Oscillator—500 MHz | 1000 | 0.125 | 100 | 2 | 900 | 0.090 | 6 | 40 |
| C | Radio-Frequency Power Amplifier or Oscillator—2500 MHz | 1000 | 0.125 | 100 | 2 | 900 | 0.090 | — | 17 |
| C | Plate-Modulated Radio-Frequency Power Amplifier or Oscillator—500 MHz | 600 | 0.100 | 70 | 2 | 600 | 0.065 | 5 | 16 |



7815R/3CPX100A5

A ceramic-metal UHF planar triode intended for pulse and high altitude applications. It is similar to the popular 3CX100A5 but features a longer grid-anode ceramic insulator with a higher voltage breakdown rating. The pulse ratings are applicable to 70,000 feet altitude making the 3CPX100A5 especially suitable for airborne applications.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 3000 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|-------------------------------------|----------------------|--------------------------|--------------|
| Cathode: Oxide-coated, unipotential | | Base | Coaxial |
| Heater: | | Maximum Seal Temp. | 250 °C |
| Voltage | 6.0 volts | Maximum Anode-Core Temp. | 250 °C |
| Current | 0.90 to 1.05 amperes | Maximum Height | 2.701 inches |
| Capacitances: | | Maximum Diameter | 1.264 inches |
| Grid-Cathode | 5.6 to 7.0 pf | Net Weight | 2.5 ounces |
| Grid-Plate | 1.86 to 2.15 pf | | |
| Plate-Cathode | 0.035 pf | | |

| Class of Operation | Type of Service | Maximum Pulse Ratings | | | | Typical Pulse Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-------------------------|----------------------|--------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Duty | Output Power (watts) |
| C | Plate-Pulsed Power Oscillator—3000 MHz | 3500 | 3.0 | 100 | 2 | 3500 | 3.0 | 0.0025 | 1,600 |
| C | Grid Pulsed Amplifier—1100 MHz | 2,000 | 3.0 | 100 | 2 | 1,700 | 1.9 | 0.01 | 1,500 |

TRIODES

UHF



7855

The 7855 is a ruggedized, high- μ planar triode of ceramic-metal construction, designed for use as a grid-pulsed, plate-pulsed, or CW oscillator, frequency multiplier, or amplifier in radio transmitting service from low frequency to 3 GHz. In addition to low interelectrode capacitance, high transconductance and high μ , this tube incorporates design features which help to assure frequency-stable operation.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|-------------------------------------|-------------|--------------------------|-----------------|
| Cathode: Oxide-coated, unipotential | | Base Socket | Coaxial Special |
| Heater: | | Maximum Seal Temp. | 250 °C |
| Voltage | 6.0 volts | Maximum Anode Core Temp. | 250 °C |
| Current | 1.0 amperes | Maximum Height | 2.386 inches |
| Capacitances: | | Maximum Diameter | 1.264 inches |
| Grid-Cathode | 6.3 pf | Net Weight | 2.5 ounces |
| Grid-Plate | 2.5 pf | | |
| Plate-Cathode | 0.06 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Telegraphy RF Power Amplifier and 500 MHz Oscillator | 2500 | 0.100 | 100 | 2.0 | 900 | 0.09 | 6.0 | 40 |
| C | Plate-Pulsed RF Amplifier and 2500 MHz Oscillator | 3500 | 3.0 | 35 | 1.5 | 3500 | 3.0 | — | 2000 |
| C | Grid-Pulsed RF Oscillator and 1100 MHz Amplifier | 2500 | 3.0 | 20 | 1.5 | 1700 | 1.9 | 400* | 1500 |

*During Pulse



8403

The 8403 is a ruggedized, high- μ planar triode of ceramic-metal construction, designed for use as a grid-pulsed, plate-pulsed or CW oscillator, frequency multiplier or amplifier from low-frequency to 3 GHz. A distinguishing characteristic of this tube is its high cathode-current capability. In addition to low interelectrode capacitance, high transconductance and high μ , this tube incorporates design features which help to assure frequency-stable operation.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 3 GHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|-------------------------------------|-------------|---------------------|-----------------|
| Cathode: Oxide-coated, unipotential | | Base Socket | Coaxial Special |
| Heater: | | Maximum Anode Temp. | 250 °C |
| Voltage | 6.3 volts | Maximum Height | 2.386 inches |
| Current | 1.3 amperes | Maximum Diameter | 1.195 inches |
| Capacitances: | | Net Weight | 2.5 ounces |
| Grid-Cathode | 8.0 pf | | |
| Grid-Plate | 3.1 pf | | |
| Plate-Cathode | .065 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier and Oscillator | 2500 | 0.150 | 100 | 2.0 | 900 | 0.140 | 9.0 | 65 |
| C | Grid-Pulsed RF Oscillator and Amplifier | 2500 | 5.0 pk | 33 | 2.0 | 2000 | 4.0 | — | 1000pk |



8533

The 8533 is a high- μ planar triode designed for use as a grid-pulsed or plate-pulsed oscillator, frequency multiplier, power amplifier or as a switch tube at high plate voltages. Noteworthy differences in this tube as compared to similar types are an extended grid-cathode insulator and a special cathode design, permitting operation with up to 8000 Vdc plate voltage.

PLATE DISSIPATION 100 watts average
FREQUENCY FOR MAXIMUM RATINGS 3 GHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|-------------------------------------|-------------|------------------------|-----------------|
| Cathode: Oxide-coated, unipotential | | Base Socket | Coaxial Special |
| Heater: | | Maximum Envelope Temp. | 250 °C |
| Voltage | 6.3 volts | Maximum Height | 2.701 inches |
| Current | 1.3 amperes | Maximum Diameter | 1.195 inches |
| Capacitances: | | Net Weight | 2.5 ounces |
| Grid-Cathode | 8.0 pf | | |
| Grid-Plate | 1.65 pf | | |
| Plate-Cathode | .06 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| — | Pulse Modulator or Pulse Amplifier | 8000 | 5.0 pk | 100 | 1.5 | — | — | — | — |
| C | Grid-Pulsed or Plate-Pulsed RF Oscillator and Amplifier | 8000 | 5.0 pk | 100 | 1.5 | — | — | — | — |



8745

A ceramic-metal UHF planar triode intended for pulse and high altitude applications. It is similar to the popular 3CX100A5 but features a longer grid-anode ceramic insulator with a higher voltage breakdown rating.

The pulse ratings are applicable to 70,000 feet altitude making the 8745 especially suitable for airborne applications.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|-------------------------------------|----------------------|--------------------------|-----------------|
| Cathode: Oxide-coated, unipotential | | Base Socket | Coaxial Special |
| Heater: | | Maximum Seal Temp. | 250 °C |
| Voltage | 6.0 volts | Maximum Anode Core Temp. | 250 °C |
| Current | 0.90 to 1.05 amperes | Maximum Height | 2.701 inches |
| Capacitances: | | Maximum Diameter | 1.264 inches |
| Grid-Cathode | 5.6 to 7.0 pf | Net Weight | 2.5 ounces |
| Grid-Plate | 1.86 to 2.15 pf | | |
| Plate-Cathode | 0.035 pf | | |

| Class of Operation | Type of Service | Maximum Pulse Ratings | | | | Typical Pulse Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-------------------------|----------------------|--------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Outy | Output Power (watts) |
| C | Plate-Pulsed Power Oscillator—3000 MHz | 3500 | 3.0 pk | 100 | 2 | 3500 | 3.0 | 0.0025 | 1,600pk |
| C | Grid Pulsed Amplifier—1100 MHz | 2,000 | 3.0 pk | 100 | 2 | 1,700 | 1.9 | 0.01 | 1,500 pk |

TRIODES

UHF

8755



The 8755 is a miniature, frequency-stable planar triode for advanced airborne and space applications up to 3000 MHz at full ratings. The rugged ceramic-metal pulse tube is designed for high-voltage, high-pulse current operation and features large contact areas for improved electrical paths. The tube may be used as an amplifier or an oscillator and employs an arc-resistant cathode.

PLATE DISSIPATION 150 watts*
FREQUENCY FOR MAXIMUM RATINGS 3000 MHz
COOLING Forced Air or Conduction

CHARACTERISTICS

| | | |
|---|---------------------------------|-----------------|
| Cathode: Arc-Resistant Oxide-coated, unipotential | Base Socket | Coaxial Special |
| Heater: Voltage 6.3 volts | Maximum Seal Temp. 250 °C | |
| Current 1.3 amperes | Maximum Anode Core Temp. 250 °C | |
| Capacitances: | Maximum Height 1.47 inches | |
| Grid-Cathode 9.3 pf | Maximum Diameter 0.83 inches | |
| Grid-Plate 1.25 pf | Net Weight 0.67 ounces | |
| Plate-Cathode 0.06 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|-------------------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Grid-Pulsed Oscillator or Amplifier | 8000 | 5.0** | 150* | 1.5 | 5000 | 5.0 | 1850 | 7000** |
| C | Pulse Plate Oscillator or Amplifier | 10,000 | 5.0** | 150* | 1.5 | — | — | — | — |
| — | Pulse Modulator or Amplifier | 8000 | 5.0** | 150* | 1.5 | — | — | — | — |

** peak

*With suitable cooler

8756



The 8756 is a miniature frequency-stable planar triode for pulse applications up to 2500 MHz at full ratings. The tube is designed for high pulse current operation.

PLATE DISSIPATION 100 watts (average)
FREQUENCY FOR MAXIMUM RATINGS 2500 MHz
COOLING Conduction or Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|---------------------------------|-----------------|
| Cathode: Oxide-coated, unipotential | Base Socket | Coaxial Special |
| Heater: Voltage 6.0 volts | Maximum Seal Temp. 250 °C | |
| Current 0.7 amperes | Maximum Anode Core Temp. 250 °C | |
| Capacitances: | Maximum Height 1.54 inches | |
| Grid-Cathode 7.0 pf | Maximum Diameter 0.83 inches | |
| Grid-Plate 1.6 pf | Net Weight 0.67 ounces | |
| Plate-Cathode 0.04 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|-------------------------------------|-----------------------|------------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Cathode Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator | 2500 | 0.125 | 150* | 1.5 | 1250 | 0.50 | 3.0 | 60 |
| C | Grid-Pulsed Oscillator or Amplifier | 2500 | 3.0** | 150* | 1.5 | 2500 | 2.0 | 350 | 2000pk |

*With suitable cooler

**Pulse Plate Current

8757



The 8757 is a miniature, ceramic and metal planar triode designed primarily for CW amplifier and oscillator application. This tube will also perform well as a grid or a plate-pulsed amplifier or oscillator at frequencies up to at least 3000 MHz.

PLATE DISSIPATION 150 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 MHz
COOLING Conduction or Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|---------------------------------|-----------------|
| Cathode: Oxide-coated, unipotential | Base Socket | Coaxial Special |
| Heater: Voltage 6.3 volts | Maximum Seal Temp. 250 °C | |
| Current 1.3 amperes | Maximum Anode Core Temp. 250 °C | |
| Capacitances: | Maximum Height 1.35 inches | |
| Grid-Cathode 9.5 pf | Maximum Diameter 0.83 inches | |
| Grid-Plate 2.25 pf | Net Weight 0.67 ounces | |
| Plate-Cathode 0.06 pf | | |

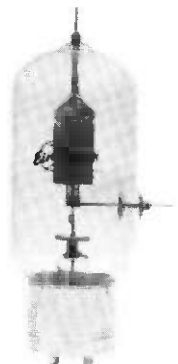
| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|------------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Cathode Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator (2500 MHz) | 2500 | 0.225 | 150* | 1.5 | 1400 | 0.215 | 4.0 | 100 |
| C | Grid Pulse RF Amplifier or Oscillator | 2500 | 5.0** | 150* | 1.5 | 2500 | 3.0 | 450 | 1960 |

*With suitable cooler

**Pulse Plate Current

INTERNAL ANODE

254W



The 254W is a radiation-cooled tube suitable for use as an RF power amplifier, frequency multiplier or oscillator, and as an AF power amplifier and modulator. The tube is widely used in base-station communications equipment and is exceptionally efficient in VHF operation.

PLATE DISSIPATION 100 watts
COOLING Radiation

CHARACTERISTICS

| | | |
|------------------------------|------------------------------|-------------------------|
| Filament: Thoriated tungsten | Base Socket | Jumbo 4-pin JETEC A4-29 |
| Voltage 5.0 volts | Maximum Height 7.13 inches | Johnson 123-211 |
| Current 7.5 amperes | Maximum Diameter 2.69 inches | |
| Capacitances: | Net Weight 6 ounces | |
| Grid-Filament 3.4 pf | | |
| Grid-Plate 2.5 pf | | |
| Plate-Filament 0.43 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------|-----------------------|----------------------|---------------------|---------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Current (amps) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier | 4000 | 0.225 | 100 | 0.06 | 3000 | 0.165 | 18 | 400 |
| C | Telephony | 3000 | 0.180 | 85 | 0.06 | 2500 | 0.168 | 23 | 335 |

TRIODES

INTERNAL ANODE

5867A



A new medium-mu triode, the 5867A is capable of over one kilowatt input to 100 Mc. It is useful as a Class AB amplifier, Class C amplifier or industrial oscillator. The plate dissipation rating is 375 watts.

PLATE DISSIPATION 350 watts
GRID DISSIPATION 20 watts
COOLING Radiation and Forced Air

Filament: Thoriated tungsten
 Voltage 5.0 volts
 Current 14.1 amperes
 Capacitances:
 Grid-Filament 7.2 pf
 Grid-Plate 5.6 pf
 Plate-Filament 0.5 pf

Base Socket
 Maximum Base Seal Temp. 180 °C
 Maximum Anode Seal Temp. 220 °C
 Maximum Height 5.875 inches
 Maximum Diameter 3.438 inches
 Net Weight 6 ounces

5-pin
 Eimac SK-410

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier or Oscillator | 4000 | 0.400 | 350 | 30 | 3000 | 0.365 | 27 | 840 |
| C | Oscillator, Industrial Application, Single Phase, Full Wave Rectifier, Unfiltered | 3800 | 0.360 | 350 | 30 | 2750 | 0.340 | — | 685 |
| C | Oscillator, Industrial Application, Self-Rectified | 4500 | 0.210 | 350 | 30 | 3000 | 0.180 | — | 415 |

6569



The 6569 is a high-mu power triode designed especially for grounded-grid RF amplifier service, but is also capable of good performance in other applications. Because of its high amplification factor and high perveance, the 6569 will give power gains as high as ten in grounded-grid amplifier applications. Because of internal shielding, neutralization is not required.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 60 MHz
COOLING Forced Air

Filament: Thoriated tungsten
 Voltage 5.0 volts
 Current 14.5 amperes
 Capacitances:
 Grid-Filament 7.6 pf
 Grid-Plate 3.7 pf
 Plate-Filament 0.10 pf

Base Socket
 Maximum Plate Cap Temp. 170 °C
 Maximum Height 6.38 inches
 Maximum Diameter 3.56 inches
 Net Weight 8 ounces

5-pin Metal Shell
 Johnson 122-275

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|---------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Current (amps) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier Grounded Grid | 4000 | 0.300 | 250 | 0.12 | 3500 | 0.285 | 85 | 805 |
| B | Linear RF Amplifier, SSB, Suppressed Carrier, Grounded Grid | 4000 | 0.300 | 250 | 0.12 | 3500 | 0.270 | 75 | 760 |

6580



The 6580 is a 400-watt high-mu power triode designed especially for grounded-grid RF amplifier service, but is also capable of good performance in other applications. Because of its high amplification factor and high perveance, the 6580 will provide power gains as high as ten in grounded-grid amplifier applications. Because of internal shielding, neutralization is not required.

PLATE DISSIPATION 400 watts
FREQUENCY FOR MAXIMUM RATINGS 60 MHz
COOLING Forced Air

Filament: Thoriated tungsten
 Voltage 5.0 volts
 Current 14.5 amperes
 Capacitances:
 Grid-Filament 7.6 pf
 Grid-Plate 3.9 pf
 Plate-Filament 0.10 pf

Base Socket
 Maximum Plate Cap Temp. 170 °C
 Maximum Height 6.38 inches
 Maximum Diameter 3.56 inches
 Net Weight 8 ounces

5 pin Metal Shell
 Johnson 122-275

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|---------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Current (amps) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier Grounded Grid | 4000 | 0.350 | 400 | 0.12 | 3000 | 0.350 | 87 | 745 |
| B | Linear RF Amplifier, SSB, Suppressed Carrier, Grounded Grid | 4000 | 0.350 | 400 | 0.12 | 3500 | 0.300 | 68 | 765 |

8163/3-400Z



The Eimac 3-400Z is a new zero-bias triode intended for linear amplifier applications. This tube may be used as a Class B R-F amplifier in either the grid-driven or cathode-driven connection, or two 3-400Z's may be used in push-pull as a grid-driven Class B audio amplifier or modulator. At a plate voltage of 3000 volts 1KW PEP input can be run with a single 3-400Z, providing a power gain of over 20 in the cathode-driven connection.

MAXIMUM PLATE DISSIPATION 400 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Radiation and Forced Air

Filament: Thoriated tungsten
 Voltage 5.0 volts
 Current 13.5 to 14.7 amperes
 Capacitances (Grounded Filament):
 Grid-Filament 6.0 to 9.0 pf
 Grid-Plate 4.0 to 5.3 pf
 Plate-Filament 0.11 pf

Base Socket
 Maximum Base Temp. 200 °C
 Maximum Plate Seal Temp. 225 °C
 Maximum Height 5.25 inches
 Maximum Diameter 3.57 inches
 Net Weight 7 ounces

5-pin, Special
 Eimac SK-410

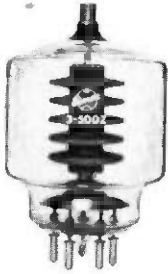
| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier and Modulator | 3000 | 0.400 | 400 | 20 | 3000 | 0.666* | 26 | 1310* |
| B | Radio-Frequency Linear Power Amplifier—SSB Grounded-Grid | 3000 | 0.400 | 400 | 20 | 3000 | 0.333 | 32 | 655 |
| C | Radio-Frequency Power Amplifier and Oscillator | 4000 | 0.350 | 400 | 20 | 3000 | 0.333 | 25 | 730 |
| C | Plate-Modulated R-F Power Amplifier | 3000 | 0.275 | 270 | 20 | 3000 | 0.245 | 18 | 550 |

*Two tubes

TRIODES

INTERNAL ANODE

3-500Z



The 3-500Z is a compact power triode intended for use as a zero-bias Class B amplifier in audio or radio-frequency applications. Operation with zero grid bias simplifies associated circuitry by eliminating the bias supply. In addition, grounded-grid operation is attractive because a power gain as high as twenty times can be obtained with the 3-500Z in a cathode-driven circuit.

PLATE DISSIPATION 500 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

| | | |
|------------------------------|--------------------|---------------|
| Filament: Thoriated tungsten | Base Socket | 5-pin Special |
| Voltage 5.0 volts | Maximum Seal Temp. | Special |
| Current 14.5 amperes | | Plate 225 °C |
| Capacitances: | | Base 200 °C |
| Grid-Filament 7.4 pf | Maximum Height | 5.875 inches |
| Grid-Plate 4.1 pf | Maximum Diameter | 3.438 inches |
| Plate-Filament 0.07 pf | Net Weight | 7 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|------------------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | RF Linear Amplifier, Grounded Grid | 4000 | 0.400 | 500 | 20 | 3000 | 0.370 | 30 | 750 |
| B | AF Amplifier or Modulator | 4000 | 0.400 | 500 | 20 | 3000* | 0.770 | 25 | 1420* |
| C | RF Power Amplifier or Oscillator | 4000 | 0.350 | 500 | 20 | 3500 | 0.300 | 22 | 850 |
| C | RF Power Amplifier Plate Modulated | 3000 | 0.275 | 320 | 20 | 3000 | 0.275 | 25 | 640 |

*Two tubes

8164/3-1000Z



The Eimac 3-1000Z is a zero-bias triode intended for linear amplifier applications. This tube may be used as a class-B R-F amplifier in either the grid-driven or cathode-driven connection, or two 3-1000Z's may be used in push-pull as a grid-driven class-B audio amplifier or modulator. At a plate voltage of 3000 volts, 2KW PEP input can be run with a single 3-1000Z, providing a power gain of over 20 in the cathode-driven connection.

MAXIMUM PLATE DISSIPATION 1000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|--------------------------|----------------|
| Filament: Thoriated tungsten | Base Socket | 5-pin, Special |
| Voltage 7.5 volts | Maximum Base Temp. | Eimac SK-510 |
| Current 21.3 amperes | Maximum Plate Seal Temp. | 200 °C |
| Capacitances (Grounded Filament): | Maximum Height | 225 °C |
| Grid-Filament 17.0 pf | Maximum Diameter | 7.88 inches |
| Grid-Plate 6.9 pf | Net Weight | 5.25 inches |
| Plate-Filament 0.12 pf | | 1.2 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier and Modulator | 3000 | 0.800 | 1000 | 50 | 3000 | 1.340* | 42 | 2570* |
| B | Radio-Frequency Linear Power Amplifier—SSB Grounded-Grid | 3000 | 0.800 | 1000 | 50 | 3000 | 0.670 | 65 | 1360 |
| C | Radio-Frequency Power Amplifier and Oscillator | 6000 | 0.700 | 1000 | 50 | 6000 | 0.700 | 57 | 3300 |
| C | Plate-Modulated R-F Power Amplifier | 4500 | 0.550 | 670 | 50 | 4500 | 0.500 | 35 | 1765 |

*Two tubes.

EXTERNAL ANODE ■ FORCED-AIR COOLED

8283/3CX1000A7



The 3CX1000A7 zero-bias triode features ceramic-metal construction and a mesh thoriated-tungsten filament. Positive socketing is provided by three breechblock terminal surfaces. This tube is intended for class-B linear amplifier service in either the grid-driven or cathode-driven connection. It is equally attractive for use at audio frequencies or at radio frequencies through the TV broadcast bands. It is recommended for use in new equipment.

PLATE DISSIPATION 1000 watts
FREQUENCY FOR MAXIMUM RATINGS 220 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|--------------------------|------------------------|
| Filament: Thoriated Tungsten Mesh | Base Socket | Special, breechblock |
| Voltage 5.0 volts | Maximum Seal Temp. | Eimac SK-860 or SK-870 |
| Current 34 amperes | Maximum Anode Core Temp. | 250 °C |
| Capacitances (In Shielded Fixture): | Maximum Height | 250 °C |
| Grid-Filament 35 pf | Maximum Diameter | 4.68 inches |
| Grid-Plate 14 pf | Net Weight | 3.36 inches |
| Plate-Filament 0.08 pf | | 2.0 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Radio-Frequency Linear Power Amplifier, Grounded-Grid—SSB | 2500 | 1.0 | 1000 | 45 | 2500 | 0.800 | 65 | 1250 |

8161/3CX2500A3



This popular high-power triode is widely employed in AM, FM, and TV service. Its coaxial filament and grid terminals insure low-inductance connection to these electrodes and allow operation at maximum ratings through 75 MHz. The use of an external forced-air-cooled anode results in a compact structure with high power-handling capability.

PLATE DISSIPATION 2500 watts
FREQUENCY FOR MAXIMUM RATINGS 75 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------|--------------------------|--------------|
| Filament: Thoriated tungsten | Base Socket | Coaxial |
| Voltage 7.5 volts | Maximum Seal Temp. | 175 °C |
| Current 49 to 54 amperes | Maximum Anode-Core Temp. | 175 °C |
| Capacitances: | Maximum Height | 8.594 inches |
| Grid-Filament 29.2 to 40.2 pf | Maximum Diameter | 4.156 inches |
| Grid-Plate 16.8 to 23.2 pf | Net Weight | 6.25 pounds |
| Plate-Filament 0.6 to 1.2 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 2500 | 150 | 6000 | 3.0* | 113* | 13,000* |
| C | Radio-Frequency Power Amplifier, and Oscillator | 6000 | 2.5 | 2500 | 150 | 6000 | 2.08 | 136 | 10,000 |
| C | Radio-Frequency Power Amplifier Grounded-Grid 85 to 110 mc. | 4000 | 2.0 | 2500 | 150 | 4000 | 1.85 | 1900 | 7500 |
| C | Plate-Modulated Radio-Frequency Power Amplifier | 5000 | 2.0 | 1670 | 150 | 5000 | 1.25 | 115 | 5300 |

*Two tubes.

TRIODES

EXTERNAL ANODE ■ FORCED-AIR COOLED



8251/3CX2500F3

This compact, high-power triode has electrical characteristics identical to those of the 3CX2500A3. Coaxial basing is not used, however, and special socketing is not required; conventional grid and filament leads are attached. This tube is frequently employed in industrial-heating or other radio-frequency equipments operating below 30 MHz.

PLATE DISSIPATION 2500 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------------|--------------|
| Filament: Thoriated tungsten | 7.5 volts | Maximum Seal Temp. | 175 °C |
| Voltage | 49 to 54 amperes | Maximum Anode-Core Temp. | 175 °C |
| Current | | Maximum Height | 18.0 inches |
| Capacitances: | | Maximum Diameter | 3.625 inches |
| Grid-Filament | 29.2 to 40.2 pf | Net Weight | 7.5 pounds |
| Grid-Plate | 16.8 to 23.2 pf | | |
| Plate-Filament | 0.6 to 1.2 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 2500 | 150 | 6000 | 3.0* | 113* | 13,000* |
| C | Radio-Frequency Power Amplifier and Oscillator | 6000 | 2.5 | 2500 | 150 | 6000 | 2.08 | 136 | 10,000 |
| C | Plate-Modulated Radio-Frequency Power Amplifier | 5000 | 2.0 | 1670 | 150 | 5000 | 1.25 | 115 | 5300 |

*Two tubes.



3CX2500H3

The 3CX2500H3 is an air-cooled ceramic-metal power triode designed primarily for use in industrial radio-frequency heating services. Its air-cooled anode is conservatively rated at 2500 watts of plate dissipation with low air flow and pressure drop. The tube's grid structure is rated at 150 watts making it an excellent choice for severe applications.

PLATE DISSIPATION 2500 watts
FREQUENCY FOR MAXIMUM RATINGS 75 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------|---------------|
| Filament: Thoriated tungsten | 7.5 volts | Base Socket | Special |
| Voltage | 53 amperes (max) | Maximum Seal Temp. | 250 °C |
| Current | | Maximum Height | 18.437 inches |
| Capacitances: | | Maximum Diameter | 4.156 inches |
| Grid-Filament | 40.2 pf (max) | Net Weight | 6.5 pounds |
| Grid-Plate | 23.2 pf (max) | | |
| Plate-Filament | 1.2 pf (max) | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 6000 | 2.5 | 2500 | 150 | 6000 | 2.08 | 136 | 10,000 |



8238/3CX3000A1

This high-power compact triode was specifically designed to be used in class-AB₁ audio-amplifier service. Two tubes will typically deliver 10,000 watts output in such service. The 3CX3000A1 uses coaxial electrode terminals and may be installed or removed with a minimum of delay.

PLATE DISSIPATION 3000 watts
GRID DISSIPATION 50 watts
COOLING Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------------|--------------|
| Filament: Thoriated tungsten | 7.5 volts | Base | Coaxial |
| Voltage | 49 to 54 amperes | Maximum Seal Temp. | 175 °C |
| Current | | Maximum Anode-Core Temp. | 175 °C |
| Capacitances: | | Maximum Height | 8.594 inches |
| Grid-Filament | 29 pf | Maximum Diameter | 4.156 inches |
| Grid-Plate | 17 pf | Net Weight | 6.25 pounds |
| Plate-Filament | 2.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 3000 | — | 6000 | 2.65* | 0 | 10,000* |

*Two tubes.



8239/3CX3000F1

This low- μ high-power triode is electrically identical to the 3CX3000A1. Physically, however, coaxial terminals have been replaced by heavy leads and a special socket is not needed. Typically, 10,000 watts audio may be obtained from two tubes in a class-AB₁ amplifier.

PLATE DISSIPATION 3000 watts
GRID DISSIPATION 50 watts
COOLING Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------------|--------------|
| Filament: Thoriated tungsten | 7.5 volts | Maximum Seal Temp. | 175 °C |
| Voltage | 49 to 54 amperes | Maximum Anode-Core Temp. | 175 °C |
| Current | | Maximum Diameter | 4.156 inches |
| Capacitances: | | Net Weight | 7.5 pounds |
| Grid-Filament | 29 pf | | |
| Grid-Plate | 17 pf | | |
| Plate-Filament | 2.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 3000 | — | 6000 | 2.65* | 0 | 10,000* |

*Two tubes.

TRIODES

EXTERNAL ANODE ■ FORCED-AIR COOLED



3CX3000A7

The Eimac 3CX3000A7 is a zero-bias triode intended for class-B linear amplifier applications. Operation with zero grid bias offers circuit simplicity by eliminating the bias supply. In addition, grounded-grid operation is attractive since a power gain of over twenty times can be obtained with the 3CX3000A7 in the cathode-driven connection. Because of its very high μ (200), this tube is also attractive for certain pulse modulator and voltage regulator applications.

PLATE DISSIPATION 3000 watts
FREQUENCY FOR MAXIMUM RATINGS 75 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------|--------------------------|--------------|
| Filament: Thoriated tungsten | | Maximum Seal Temp. | 175 °C |
| Voltage | 7.5 volts | Maximum Anode Core Temp. | 175 °C |
| Current | 51 amperes | Maximum Height | 8.594 inches |
| Capacitances: | | Maximum Diameter | 4.156 inches |
| Grid-Filament | 38 pf | Net Weight | 7.5 pounds |
| Grid-Plate | 24 pf | | |
| Plate-Filament | 0.6 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier or Modulator | 5000 | 2.5 | 3000 | 225 | 4000 | 4.0* | 120 | 11,000* |
| B | Radio-Frequency Linear Power Amplifier, Grounded-Grid—SSB | 5000 | 2.5 | 3000 | 225 | 5000 | 1.56 | 215 | 5500 |
| B | Radio-Frequency Linear Power Amplifier, Carrier Conditions | 5000 | 2.5 | 3000 | 225 | 4000 | 0.815 | 15 | 1100 |

*Two tubes.



8162/3CX3000F7

This tube is identical to the 3CX3000A7 except for the addition of heavy grid and filament leads to simplify socketing problems. A pair of these tubes as audio amplifiers will deliver over 10 kilowatts output power.

PLATE DISSIPATION 3000 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------|--------------------------|--------------|
| Filament: Thoriated tungsten | | Maximum Seal Temp. | 175 °C |
| Voltage | 7.5 volts | Maximum Anode Core Temp. | 175 °C |
| Current | 51 amperes | Maximum Height | 8.594 inches |
| Capacitances: | | Maximum Diameter | 4.156 inches |
| Grid-Filament | 38 pf | Net Weight | 7.5 pounds |
| Grid-Plate | 24 pf | | |
| Plate-Filament | 0.6 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier or Modulator | 5000 | 2.5 | 3000 | 225 | 4000 | 4.0* | 120 | 11,000* |
| B | Radio-Frequency Linear Power Amplifier, Grounded-Grid—SSB | 5000 | 2.5 | 3000 | 225 | 5000 | 1.56 | 215 | 5500 |
| B | Radio-Frequency Linear Power Amplifier, Carrier Conditions | 5000 | 2.5 | 3000 | 225 | 4000 | 0.815 | 15 | 1100 |

*Two tubes.



3CX5000A3

The 3CX5000A3 is a medium- μ triode designed primarily for use in industrial radio-frequency heating service. A socket is not required because a grid contact flange is provided for bolting the tube directly to the grid deck.

PLATE DISSIPATION 5000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------|--------------------|--------------|
| Filament: Thoriated tungsten | | Base Socket | Special |
| Voltage | 7.5 volts | Maximum Seal Temp. | 250 °C |
| Current | 78 amperes | Maximum Height | 8.750 inches |
| Capacitances: | | Maximum Diameter | 6.4 inches |
| Grid-Filament | 53 pf | Net Weight | 10 pounds |
| Grid-Plate | 2.5 pf | | |
| Plate-Filament | 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|---------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Current (amps) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 10,000 | 3.0 | 5000 | 0.5 | 9000 | 2.53 | 208 | 18,600 |



3CX5000H3

The 3CX5000H3 is an air-cooled ceramic-metal power triode designed primarily for use in industrial radio-frequency heating service. Its air-cooled anode is conservatively rated at 5000 watts maximum plate dissipation with low pressure drop. The grid structure is rated at 150 watts making this tube an excellent choice for severe applications.

PLATE DISSIPATION 5000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------|---------------|
| Filament: Thoriated tungsten | | Base Socket | Special |
| Voltage | 7.5 volts | Maximum Seal Temp. | 250 °C |
| Current | 78 amperes (max) | Maximum Height | 17.750 inches |
| Capacitances: | | Maximum Diameter | 6.400 inches |
| Grid-Filament | 53 pf | Net Weight | 10 pounds |
| Grid-Plate | 25 pf | | |
| Plate-Filament | 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 10,000 | 3.0 | 5000 | 150 | 9000 | 2.52 | 208 | 18,600 |

TRIODES

EXTERNAL ANODE ■ FORCED-AIR COOLED

8158 / 3CX10,000A1



The Eimac 3CX10,000A1 is a ceramic-metal low-mu power triode intended for use as a linear amplifier in audio or RF applications requiring high output power with zero driving power. It features a large thoriated-tungsten filament with ample reserve emission and an integral anode cooler with the inherent ability to withstand large overloads. This tube is particularly well suited for use in audio modulators and vibration testing equipment amplifiers supplying up to 25 KW of output power (two tubes, push-pull).

PLATE DISSIPATION 12,000 watts
GRID DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 140 MHz
COOLING Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten Voltage 7.5 volts Base Socket Coaxial Eimac SK-1300
 Current 94.0 to 104.0 amperes. Maximum Seal Temp. 250 °C
 Capacitances (Grounded Filament): Maximum Anode-Core Temp. 250 °C
 Grid-Filament 45.0 to 57.0 pf Maximum Height 8.50 inches
 Grid-Plate 25.0 to 32.0 pf Maximum Diameter 7.00 inches
 Plate-Filament 3.4 to 4.2 pf Net Weight 12 pounds

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₂ | Audio-Frequency Power Amplifier or Modulator | 7000 | 5.0 | 12,000 | 100 | 7000 | 7.40* | 0 | 29,100* |
| C | Radio-Frequency Industrial Oscillator | 5000 | 4.0 | 10,000 | 100 | 5000 | 2.75 | — | 11,000 |
| A | Voltage Regulator Service | 7000 | ** | 12,000 | 100 | 0-5000 | ** | 0 | — |

*Two tubes. **Up to 5 amperes depending on voltage drop across tube.

8159 / 3CX10,000A3



Here is a ceramic-metal medium-mu triode designed for industrial-heating oscillator service. It features a large thoriated-tungsten filament with ample reserve emission and an integral anode cooler with the inherent ability to withstand large overloads. It is intended for use through 140 MHz, also as a grounded-grid FM amplifier developing 20 kilowatts useful output power.

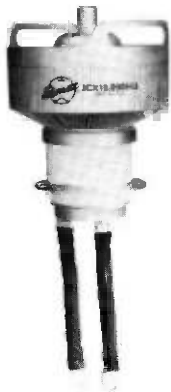
PLATE DISSIPATION 12,000 watts
GRID DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 140 MHz
COOLING Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten Voltage 7.5 volts Base Socket Coaxial Eimac SK-1300
 Current 94 to 104 amperes. Maximum Seal Temp. 250 °C
 Capacitances (Grounded Filament): Maximum Anode-Core Temp. 250 °C
 Grid-Filament 48.0 to 58.0 pf Maximum Height 8.50 inches
 Grid-Plate 30.0 to 38.0 pf Maximum Diameter 7.00 inches
 Plate-Filament 1.20 to 1.50 pf Net Weight 12 pounds

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Industrial Oscillator | 7000 | 4.0 | 10,000 | 250 | 7000 | 4.0 | — | 22,400 |
| AB ₂ | Radio-Frequency Linear Power Amplifier SSB, Grounded-Grid | 7000 | 5.0 | 12,000 | 250 | 7000 | 4.0 | 2050 | 20,000 |
| C | Radio-Frequency Power Amplifier, Grounded-Grid | 7000 | 4.0 | 10,000 | 250 | 7000 | 4.0 | 4100 | 24,500 |
| C | Plate-Modulated R-F Power Amplifier | 5500 | 3.0 | 6500 | 250 | 5000 | 3.0 | 515 | 12,400 |

3CX10,000H3



The 3CX10,000H3 is an air-cooled ceramic-metal power triode designed primarily for use in industrial radio-frequency heating service. Its air-cooled anode is conservatively rated at 10,000 watts of plate dissipation. Input of 40,000 watts is permissible up to 90 MHz. Plentiful reserve emission is available from its 750 watt filament. The grid structure is rated at 250 watts.

PLATE DISSIPATION 10,000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten Voltage 7.5 volts Base Socket Special Special °C
 Current 104 amperes (max) Maximum Seal Temp. 250 °C
 Capacitances: Maximum Height 15.8 inches
 Grid-Filament 58 pf Maximum Diameter 7.050 inches
 Grid-Plate 38 pf Net Weight 12 pounds
 Plate-Filament 1.5 pf

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 10,000 | 4.0 | 10,000 | 250 | 9000 | 4.0 | 570 | 29,000 |

8160 / 3CX10,000A7



The Eimac 3CX10,000A7 is a ceramic-metal zero-bias triode intended for use in grounded-grid linear amplifiers delivering 20 kilowatts of useful output power. Because of its low intermodulation distortion characteristics the 3CX10,000A7 is particularly well suited for single-sideband amplifiers. Two tubes operating in a push-pull audio amplifier under class B zero-bias conditions will deliver up to 45 kilowatts of useful output power.

PLATE DISSIPATION 12,000 watts
GRID DISSIPATION 500 watts
FREQUENCY FOR MAXIMUM RATINGS 140 MHz
COOLING Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten Voltage 7.5 volts Base Socket Coaxial Eimac SK-1300
 Current 94.0 to 104.0 amperes. Maximum Seal Temp. 250 °C
 Capacitances (Grounded Filament): Maximum Anode-Core Temp. 250 °C
 Grid-Filament 63 pf Maximum Height 8.5 inches
 Grid-Plate 41 pf Maximum Diameter 7.0 inches
 Plate-Filament 0.05 pf Net Weight 12 pounds

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier or Modulator | 7000 | 5.0 | 12,000 | 500 | 7000 | 10.0* | 560* | 47,700* |
| B | Radio-Frequency Linear Power Amplifier, Grounded-Grid—SSB | 7000 | 5.0 | 12,000 | 500 | 7000 | 5.0 | 1540 | 24,200 |
| C | Radio-Frequency Power Amplifier or Oscillator | 7000 | 4.0 | 10,000 | 500 | 7000 | 4.0 | 430 | 21,300 |
| C | Plate-Modulated R-F Power Amplifier | 5500 | 3.0 | 6500 | 500 | 5000 | 3.0 | 380 | 11,900 |

*Two tubes

TRIODES

EXTERNAL ANODE ■ FORCED-AIR COOLED

3CX15,000A3



The 3CX15,000A3 is a medium- μ triode designed especially for rf heating service. Six amperes of dc plate current is available from a one kilowatt filament and the grid structure is rated at 500 watts. Adequate forced-air cooling permits 15 kilowatts of plate dissipation. The 3CX15,000A3 is also useful as a linear or plate-modulated rf amplifier.

PLATE DISSIPATION 15,000 watts
GRID DISSIPATION 500 watts
FREQUENCY FOR MAXIMUM RATINGS 100 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|-----------------------------------|--------------------|--------------------------|---------------|
| Filament: Thoriated tungsten | | Base Socket | Coaxial |
| Voltage | 6.3 volts | Socket | Eimac SK-1300 |
| Current | 152 to 168 amperes | Maximum Seal Temp. | 250 °C |
| Capacitances (Grounded Filament): | | Maximum Anode-Core Temp. | 250 °C |
| Grid-Filament | 40.0 to 58.0 pf | Maximum Height | 8.5 inches |
| Grid-Plate | 30.0 to 38.0 pf | Maximum Diameter | 7.0 inches |
| Plate-Filament | 1.2 to 1.5 pf | Net Weight | 12 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|-----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps.) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Oscillator or Amplifier | 10,000 | 6.0 | 15,000 | 500 | 10,000 | 4.3 | 75 | 33,000 |
| AB: | Radio-Frequency Linear Power Amplifier | 10,000 | 6.0 | 15,000 | 500 | 10,000 | 4.8 | 2050 | 33,000 |
| C | Plate-Modulated RF Power Amplifier | 7000 | 5.0 | 10,000 | 500 | 7000 | 5.0 | 750 | 27,500 |



3CX15,000H3

The 3CX15,000H3 is an air-cooled ceramic-metal power triode designed primarily for use in industrial radio-frequency heating service. Its air-cooled anode is rated at 15,000 watts of plate dissipation. Plentiful reserve emission is available from its 1000 watt filament. The grid structure is rated at 500 watts making this tube an excellent choice for severe applications.

PLATE DISSIPATION 15,000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|-------------------|--------------------|--------------|
| Filament: Thoriated tungsten | | Base Socket | Special |
| Voltage | 6.3 volts | Socket | Special |
| Current | 172 amperes (max) | Maximum Seal Temp. | 250 °C |
| Capacitances: | | Maximum Height | 17.75 inches |
| Grid-Filament | 58 pf | Maximum Diameter | 7.05 inches |
| Grid-Plate | 38 pf | Net Weight | 13 pounds |
| Plate-Filament | 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 12,000 | 6.0 | 15,000 | 500 | 10,000 | 5.0 | 650 | 41,200 |



3CX20,000A3

The 3CX20,000A3 is a ceramic and metal air-cooled power triode intended for use in radio frequency heating, plate-modulated AM transmitters and grounded grid FM transmitter service.

PLATE DISSIPATION 20,000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|----------------------------------|-----------------|---------------------|---------------|
| Filament: Thoriated tungsten | | Base Socket | Coaxial |
| Voltage | 10 volts | Socket | Eimac SK-1300 |
| Current | 160 amperes | Maximum Seal Temp. | 250 °C |
| Capacitances (Grounded Cathode): | | Maximum Anode Temp. | 250 °C |
| Grid-Filament | 65 to 75 pf | Maximum Height | 10 inches |
| Grid-Plate | 38.0 to 48.0 pf | Maximum Diameter | 8 inches |
| Plate-Filament | 2.0 to 2.6 pf | Net Weight | 19.5 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier or Oscillator | 12,000 | 9.0 | 20,000 | 750 | 11,000 | 6.8 | 1620 | 60,000 |
| C | Plate-Modulated Radio-Frequency Power Amplifier (Carrier Conditions) | 6500 | 5.5 | 13,000 | 750 | 6500 | 5.0 | 1500 | 25,000 |
| AB | Radio Frequency Linear Amplifier | 12,000 | 9.0 | 20,000 | 750 | 10,000 | 6.0 | 215 | 40,000 |



3CX20,000H3

The 3CX20,000H3 is a ceramic and metal air-cooled power triode intended for use in radio frequency heating and plate-modulated AM transmitters.

PLATE DISSIPATION 20,000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|----------------------------------|-----------------|---------------------|-----------|
| Filament: Thoriated tungsten | | Base Socket | Special |
| Voltage | 10 volts | Socket | Special |
| Current | 160 amperes | Maximum Seal Temp. | 250 °C |
| Capacitances (Grounded Cathode): | | Maximum Anode Temp. | 250 °C |
| Grid-Filament | 65 to 75 pf | Maximum Height | 10 inches |
| Grid-Plate | 38.0 to 48.0 pf | Maximum Diameter | 8 inches |
| Plate-Filament | 2.0 to 2.6 pf | Net Weight | 21 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier or Oscillator | 12,000 | 9.0 | 20,000 | 750 | 11,000 | 6.8 | 1620 | 60,000 |
| C | Plate-Modulated Radio-Frequency Power Amplifier (Carrier Conditions) | 6500 | 5.5 | 13,000 | 750 | 6500 | 5.0 | 1500 | 25,000 |
| AB | Radio Frequency Linear Amplifier | 12,000 | 9.0 | 20,000 | 750 | 10,000 | 6.0 | 215 | 40,000 |

TRIODES

EXTERNAL ANODE ■ FORCED-AIR COOLED



6697A

This popular triode finds wide use in industrial and broadcast equipment. The 6697A is all ceramic-metal construction for increased tube reliability. The anode is constructed of copper disk fins; forced-air cooling is required for rated plate dissipation of 35 kilowatts.

PLATE DISSIPATION 35,000 watts
GRID DISSIPATION 750 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Forced Air

CHARACTERISTICS

| | | | |
|-----------------------------------|-------------|--------------------------|--------------|
| Filament: Thoriated tungsten | | Terminal | Coaxial |
| Voltage | 13 volts | Maximum Seal Temp. | 250 °C |
| Current | 205 amperes | Maximum Anode-Core Temp. | 250 °C |
| Capacitances (Grounded Filament): | | Maximum Height | 19.75 inches |
| Grid-Filament | 76 pf | Maximum Diameter | 5.3 inches |
| Grid-Plate | 55 pf | Net Weight | 45 pounds |
| Plate-Filament | 2.7 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio Frequency Power Amplifier or Modulator | 16,000 | 11.0 | 35,000 | 750 | 10,000 | 17.4* | 550* | 110,000* |
| C | Radio-Frequency Power Amplifier or Oscillator | 16,000 | 11.0 | 35,000 | 750 | 10,000 | 10.0 | 1400 | 70,000 |
| C | Plate-Modulated RF Power Amplifier | 10,000 | 8.5 | 23,000 | 750 | 10,000 | 8.2 | 2080 | 60,000 |

*Two tubes.

EXTERNAL ANODE ■ WATER COOLED



8240/3CW5000A1

The 3CW5000A1 is a water-cooled version of the 3CX3000A1 and is useful in audio service when reverse anode dissipation is needed or when water is easily employed as a coolant. It has coaxial terminals which allow rapid tube installation or removal.

PLATE DISSIPATION 5000 watts
GRID DISSIPATION 50 watts
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------|---------------|
| Filament: Thoriated tungsten | | Base | Coaxial |
| Voltage | 7.5 volts | Maximum Seal Temp. | 250 °C |
| Current | 49 to 54 amperes | Maximum Height | 12.562 inches |
| Capacitances: | | Maximum Diameter | 3.625 inches |
| Grid-Filament | 29 pf | Net Weight | 3.5 pounds |
| Grid-Plate | 17 pf | | |
| Plate-Filament | 2.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 5000 | — | 6000 | 2.65* | 0 | 10,000* |

*Two tubes.



8241/3CW5000F1

The 3CW5000F1 is a water-cooled version of the 3CX3000F1. Conventional grid and filament leads allow installation without special socketing. It is designed for use in audio-amplifier applications where plate dissipation may be as high as 5000 watts or for similar service when water cooling is preferred.

PLATE DISSIPATION 5000 watts
GRID DISSIPATION 50 watts
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------|--------------|
| Filament: Thoriated tungsten | | Maximum Seal Temp. | 250 °C |
| Voltage | 7.5 volts | Maximum Diameter | 3.625 inches |
| Current | 49 to 54 amperes | Net Weight | 4.8 pounds |
| Capacitances: | | | |
| Grid-Filament | 29 pf | | |
| Grid-Plate | 17 pf | | |
| Plate-Filament | 2.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 5000 | — | 6000 | 2.65* | 0 | 10,000* |

*Two tubes.



8242/3CW5000A3

This water-cooled version of the 3CX2500A3 is for use in equipments where water is the preferred cooling medium or where additional plate-dissipation capability is required. It, too, is coaxial based and may be employed at maximum ratings through 75 MHz.

PLATE DISSIPATION 5000 watts
FREQUENCY FOR MAXIMUM RATINGS 75 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------|---------------|
| Filament: Thoriated tungsten | | Base | Coaxial |
| Voltage | 7.5 volts | Maximum Seal Temp. | 250 °C |
| Current | 49 to 54 amperes | Maximum Height | 12.562 inches |
| Capacitances: | | Maximum Diameter | 3.625 inches |
| Grid-Filament | 36 pf | Net Weight | 3.5 pounds |
| Grid-Plate | 20 pf | | |
| Plate-Filament | 1.2 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₂ | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 5000 | 150 | 5000 | 2.26* | 59* | 8000* |
| B | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 5000 | 150 | 6000 | 3.0* | 113* | 13,000* |
| C | Radio-Frequency Power Amplifier and Oscillator | 6000 | 2.5 | 5000 | 150 | 6000 | 2.08 | 136 | 10,000 |
| C | Plate-Modulated Radio-Frequency Power Amplifier | 5000 | 2.0 | 3350 | 150 | 5000 | 1.45 | 76 | 5580 |

*Two tubes.

TRIODES

EXTERNAL ANODE ■ WATER COOLED



8243/3CW5000F3

The 3CW5000F3 is electrically identical to the 3CX2500F3 except for plate-dissipation rating. Its water-cooled anode with 5000-watt capability makes it an ideal choice for equipments where high power must be dissipated or where it is more convenient to cool with water than forced air. Conventional grid and filament leads allow installation without special socketing.

PLATE DISSIPATION 5000 watts
FREQUENCY FOR MAXIMUM RATINGS 75 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------|--------------|
| Filament: Thoriated tungsten | | Maximum Seal Temp. | 250 °C |
| Voltage | 7.5 volts | Maximum Height | 22.0 inches |
| Current | 49 to 54 amperes | Maximum Diameter | 3.625 inches |
| Capacitances: | | Net Weight | 4.8 pounds |
| Grid-Filament | 36 pf | | |
| Grid-Plate | 21 pf | | |
| Plate-Filament | 1.2 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 5000 | 150 | 5000 | 2.26* | 59* | 8000* |
| B | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.5 | 5000 | 150 | 6000 | 3.0* | 113* | 13,000* |
| C | Radio-Frequency Power Amplifier and Oscillator | 6000 | 2.5 | 5000 | 150 | 6000 | 2.08 | 136 | 10,000 |
| C | Plate-Modulated Radio-Frequency Power Amplifier | 5000 | 2.0 | 3350 | 150 | 5000 | 1.45 | 76 | 5580 |

*Two tubes.



3CW5000H3

The 3CW5000H3 is a water-cooled ceramic-metal power triode designed primarily for use in industrial radio-frequency heating services. Its water-cooled anode is conservatively rated at 5000 watts of plate dissipation with low water flow and pressure drop. A power input of 12,500 watts is permissible up to 75 MHz. Plentiful reserve emission is available from its 375 watt filament.

PLATE DISSIPATION 5000 watts
FREQUENCY FOR MAXIMUM RATINGS 75 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------|----------------|
| Filament: Thoriated tungsten | | Base | Flexible Leads |
| Voltage | 7.5 volts | Maximum Seal Temp. | 250 °C |
| Current | 53 amperes (max) | Maximum Height | 9.93 inches |
| Capacitances: | | Maximum Diameter | 5.42 inches |
| Grid-Filament | 40.2 pf | Net Weight | 7.5 pounds |
| Grid-Plate | 24.2 pf | | |
| Plate-Filament | 1.20 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 6000 | 2.5 | 5000 | 150 | 6000 | 2.08 | 136 | 10,000 |



3CW10,000A3

The 3CW10,000A3 is a medium- μ water-cooled triode designed primarily for use in industrial radio-frequency heating service.

PLATE DISSIPATION 10,000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------|-------------|
| Filament: Thoriated tungsten | | Base | Coaxial |
| Voltage | 7.5 volts | Socket | SK-1300 |
| Current | 78 amperes (max) | Maximum Seal Temp. | 250 °C |
| Capacitances: | | Maximum Height | 10 inches |
| Grid-Filament | 53 pf | Maximum Diameter | 6.05 inches |
| Grid-Plate | 25 pf | Net Weight | 10 pounds |
| Plate-Filament | 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | RF Industrial Oscillator | 10,000 | 3.0 | 10,000 | 0.5 | 9000 | 2.9 | 215 | 20,000 |



3CW10,000H3

The 3CW10,000H3 is a water-cooled ceramic-metal power triode designed primarily for use in industrial radio-frequency heating service. Its water-cooled anode is conservatively rated at 10,000 watts plate dissipation with low water flow and pressure drop. Input of 30,000 watts is permissible up to 90 MHz. Plentiful reserve emission is available from its 560 watt filament. A grid contact flange is provided for bolting the tube directly to a strap or grid deck, eliminating the need for a socket.

PLATE DISSIPATION 10,000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|------------------|--------------------|----------------|
| Filament: Thoriated tungsten | | Base | Flexible Leads |
| Voltage | 7.5 volts | Maximum Seal Temp. | 250 °C |
| Current | 78 amperes (max) | Maximum Height | 17.9 inches |
| Capacitances: | | Maximum Diameter | 5.090 inches |
| Grid-Filament | 53 pf | Net Weight | 10 pounds |
| Grid-Plate | 25 pf | | |
| Plate-Filament | 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | RF Industrial Oscillator | 10,000 | 3.0 | 10,000 | 150 | 9000 | 2.9 | 215 | 20,600 |

TRIODES

EXTERNAL ANODE ■ WATER COOLED



3CW20,000A1

The Eimac 3CW20,000A1 is a ceramic-metal low- μ power triode intended for use as a linear amplifier in audio or rf applications requiring high output power with zero driving power. It features a large thoriated-tungsten filament with ample reserve emission and an integral anode cooler with the inherent ability to withstand large overloads. This tube is particularly well suited for use in audio modulators and vibration testing equipment amplifiers supplying up to 25 kw of output power (two tubes, push-pull).

PLATE DISSIPATION 20,000 watts
GRID DISSIPATION 100 watts
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|-----------------------------------|-----------------------|--------------------------|---------------|
| Filament: Thoriated tungsten | 7.5 volts | Base Socket | Eimac SK-130C |
| Voltage | 94.0 to 104.0 amperes | Maximum Seal Temp. | 250 °C |
| Current | | Maximum Anode-Core Temp. | 250 °C |
| Capacitances (Grounded Filament): | | Maximum Height | 8.50 inch |
| Grid-Filament | 45.0 to 57.0 pf | Maximum Diameter | 7.00 inch |
| Grid-Plate | 25.0 to 32.0 pf | Net Weight | 12 pound |
| Plate-Filament | 3.4 to 4.2 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier or Modulator | 7000 | 5.0 | 20,000 | 100 | 7000 | 7.40* | 0 | 29,100* |
| A | Voltage Regulator Service | 10,000 | ** | 12,000 | 100 | 0-5000 | ** | 0 | — |

*Two tubes. **Up to 5 amperes depending on voltage drop across tube.



3CW20,000A3

Here is a ceramic-metal medium- μ triode designed for industrial-heating oscillator service. It features a large thoriated-tungsten filament with ample reserve emission and an integral anode cooler with the inherent ability to withstand large overloads. It is intended for use through 140 MHz, also as a grounded-grid FM amplifier developing 20 kilowatts useful output power.

PLATE DISSIPATION 20,000 watts
GRID DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 140 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|-----------------------------------|-------------------|--------------------------|--------------|
| Filament: Thoriated tungsten | 7.5 volts | Base Socket | Eimac SK-13C |
| Voltage | 94 to 104 amperes | Maximum Seal Temp. | 250 °C |
| Current | | Maximum Anode-Core Temp. | 250 °C |
| Capacitances (Grounded Filament): | | Maximum Height | 8.50 inch |
| Grid-Filament | 48.0 to 58.0 pf | Maximum Diameter | 7.00 inch |
| Grid-Plate | 30.0 to 38.0 pf | Net Weight | 12 pound |
| Plate-Filament | 1.20 to 1.50 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Industrial Oscillator | 7000 | 4.0 | 20,000 | 250 | 7000 | 4.0 | — | 22,400 |
| AB ₂ | Radio-Frequency Linear Power Amplifier—SSB, Grounded-Grid | 7000 | 5.0 | 20,000 | 250 | 7000 | 4.0 | 2050 | 20,000 |
| C | Radio-Frequency Power Amplifier, Grounded-Grid | 7000 | 4.0 | 20,000 | 250 | 7000 | 4.0 | 4100 | 24,500 |
| C | Plate-Modulated RF Power Amplifier | 5500 | 3.0 | 13,500 | 250 | 5000 | 3.0 | 515 | 12,400 |



3CW20,000A7

The Eimac 3CW20,000A7 is a ceramic-metal zero-bias triode intended for use in grounded-grid linear amplifiers delivering 20 kilowatts of useful output power. Because of its low intermodulation distortion characteristics the 3CW20,000A7 is particularly well suited for single-sideband amplifiers. Two tubes operating in a push-pull audio amplifier under class-B zero-bias conditions will deliver up to 45 kilowatts of useful output power.

MAXIMUM PLATE DISSIPATION 20,000 watts
GRID DISSIPATION 500 watts
FREQUENCY FOR MAXIMUM RATINGS 140 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|-----------------------------------|-----------------------|--------------------------|-------------|
| Filament: Thoriated tungsten | 7.5 volts | Base Socket | Eimac SK-13 |
| Voltage | 94.0 to 104.0 amperes | Maximum Seal Temp. | 250 °C |
| Current | | Maximum Anode Core Temp. | 250 °C |
| Capacitances (Grounded Filament): | | Maximum Height | 8.5 inch |
| Grid-Filament | 63 pf | Maximum Diameter | 7.0 inch |
| Grid-Plate | 41 pf | Net Weight | 12 pound |
| Plate-Filament | 0.05 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier or Modulator | 7000 | 5.0 | 20,000 | 500 | 7000 | 10.0* | 560* | 47,700 |
| B | Radio-Frequency Linear Power Amplifier, Grounded-Grid—SSB | 7000 | 5.0 | 20,000 | 500 | 7000 | 5.0 | 1540 | 24,200 |
| B | Radio-Frequency Linear Power Amplifier, Carrier Conditions, Grounded-Grid | 7000 | 5.0 | 20,000 | 500 | 7000 | 2.4 | 330 | 565 |
| C | Radio-Frequency Power Amplifier or Oscillator | 7000 | 4.0 | 20,000 | 500 | 7000 | 4.0 | 430 | 21,300 |
| C | Plate-Modulated RF Power Amplifier | 5500 | 3.0 | 13,500 | 500 | 5000 | 3.0 | 380 | 11,900 |

*Two tubes



3CW20,000H3

The 3CW20,000H3 is a water-cooled, ceramic-metal power triode designed primarily for use in industrial radio-frequency heating service. Its water-cooled anode is conservatively rated at 20,000 watts plate dissipation with low water flow and pressure drop. The grid structure is rated at 250 watts making this tube an excellent choice for severe applications.

PLATE DISSIPATION 20,000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|-------------------|--------------------|-------------|
| Filament: Thoriated tungsten | 7.5 volts | Base Socket | Flexible Le |
| Voltage | 104 amperes (max) | Maximum Seal Temp. | 250 °C |
| Current | | Maximum Height | 17.750 inch |
| Capacitances: | | Maximum Diameter | 5.090 inch |
| Grid-Filament | 58 pf | Net Weight | 12 pound |
| Grid-Plate | 38 pf | | |
| Plate-Filament | 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 12,000 | 4.0 | 20,000 | 250 | 10,000 | 4.0 | 340 | 28,000 |

TRIODES

EXTERNAL ANODE ■ WATER COOLED



3CW25,000A3

An integral water jacket allows an anode dissipation rating of 25 kilowatts with this new medium- μ , ceramic-metal triode. A 500 watt grid structure makes this tube attractive for industrial heating service. The tube is rated at 60 kilowatts of input power to 100 Mc with operation at slightly reduced ratings to 140 Mc.

PLATE DISSIPATION 25,000 watts
GRID DISSIPATION 500 watts
FREQUENCY FOR MAXIMUM RATINGS 100 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|-----------------------------------|--------------------|--------------------|---------------|
| Filament: Thoriated tungsten | 6.3 volts | Base | Coaxial |
| Voltage | 152 to 168 amperes | Socket | Eimac SK-1300 |
| Current | | Maximum Seal Temp. | 250°C |
| Capacitances (Grounded Filament): | | Maximum Height | 11.4 inches |
| Grid-Filament | 48.0 to 58.0 pf | Maximum Diameter | 4.7 inches |
| Grid-Plate | 30.0 to 38.0 pf | Net Weight | 12 pounds |
| Plate-Filament | 1.2 to 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Oscillator or Amplifier | 10,000 | 6.0 | 25,000 | 500 | 10,000 | 6.0 | 365 | 42,000 |
| AB ₂ | Radio-Frequency Linear Power Amplifier | 10,000 | 6.0 | 25,000 | 500 | 10,000 | 6.0 | 250 | 41,000 |
| C | Plate-Modulated RF Power Amplifier | 7000 | 6.0 | 16,500 | 500 | 7000 | 5.0 | 750 | 27,500 |



3CW30,000H3

The 3CW30,000H3 is a water-cooled ceramic-metal power triode designed primarily for use in industrial radio-frequency heating service. Its water-cooled anode is conservatively rated at 30,000 watts plate dissipation with low water flow and pressure drop. Input of 60,000 watts is permissible up to 90 MHz. The grid structure is rated at 500 watts.

PLATE DISSIPATION 30,000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|-------------------|--------------------|----------------|
| Filament: Thoriated tungsten | 6.3 volts | Base | Flexible Leads |
| Voltage | 172 amperes (max) | Maximum Seal Temp. | 250 °C |
| Current | | Maximum Height | 17.750 inches |
| Capacitances: | | Maximum Diameter | 5.090 inches |
| Grid-Filament | 48 pf | Net Weight | 12 pounds |
| Grid-Plate | 38 pf | | |
| Plate-Filament | 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 12,000 | 6.0 | 30,000 | 500 | 10,000 | 6.0 | 365 | 42,000 |



3CW40,000H3

The 3CW40,000H3 is a water-cooled ceramic-metal power triode designed primarily for use in industrial radio-frequency heating service. Its water-cooled anode is conservatively rated at 40,000 watts plate dissipation with low water flow and pressure drop. The grid structure is rated at 750 watts making this tube an excellent choice for severe applications.

PLATE DISSIPATION 40,000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|------------------------------|-------------------|--------------------|----------------|
| Filament: Thoriated tungsten | 10 volts | Base | Flexible Leads |
| Voltage | 168 amperes (max) | Maximum Seal Temp. | 250 °C |
| Current | | Maximum Height | 19.050 inches |
| Capacitances: | | Maximum Diameter | 5.090 inches |
| Grid-Filament | 75 pf | Net Weight | 14 pounds |
| Grid-Plate | 48 pf | | |
| Plate-Filament | 2.6 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 12,000 | 9.0 | 40,000 | 750 | 10,000 | 9.0 | 1040 | 70,000 |



6696A

A rugged, all ceramic-metal, water-cooled triode, the 6696A is rated at 120 kilowatts input and 60 kilowatts plate dissipation to 30MHz. It is attractive for general broadcast or industrial service where a high-power, medium μ triode is required. Accessories such as water jackets and terminal connectors are available from Eimac.

PLATE DISSIPATION 60,000 watts
GRID DISSIPATION 750 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|-----------------------------------|-------------|--------------------|--------------|
| Filament: Thoriated tungsten | 13 volts | Terminals | Coaxial |
| Voltage | 205 amperes | Maximum Seal Temp. | 250°C |
| Current | | Maximum Height | 19.75 inches |
| Capacitances (Grounded Filament): | | Maximum Diameter | 4.8 inches |
| Grid-Filament | 76 pf | Net Weight | 20 pounds |
| Grid-Plate | 55 pf | | |
| Plate-Filament | 2.7 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier or Modulator | 16,000 | 11.0 | 60,000 | 750 | 12,000 | 20.0* | 600* | 150,000* |
| C | Radio-Frequency Power Amplifier or Oscillator | 16,000 | 11.0 | 60,000 | 750 | 15,000 | 7.0 | 600 | 80,000 |
| C | Plate-Modulated RF Power Amplifier | 10,000 | 8.5 | 40,000 | 750 | 10,000 | 8.2 | 2080 | 60,000 |

*Two tubes.

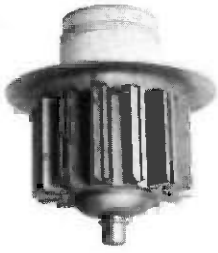
TRIODES

EXTERNAL ANODE ■ VAPOR COOLED

3CV30,000A1

The 3CV30,000A1 is a vapor-cooled triode with characteristics similar to the 3CX10,000A1. It has low μ value and is recommended for Class AB₁, audio, or regulator service.

PLATE DISSIPATION 30,000 watts
COOLING Vapor Phase and Air



CHARACTERISTICS

| | | | |
|------------------------------|-------------|------------------------|--------------|
| Filament: Thoriated tungsten | | Maximum Envelope Temp. | 250 °C |
| Voltage | 7.5 volts | Maximum Height | 8.750 inches |
| Current | 100 amperes | Maximum Diameter | 7.750 inches |
| Base | Coaxial | Net Weight | 18 pounds |
| Socket | SK-1310 | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio Frequency Power Amplifier and Modulator | 7000 | 5.0 | 30,000 | 100 | 7000 | 7.0* | — | 29,000* |

*Two tubes

3CV30,000A3

A vapor-cooled triode with a heavy, one kilowatt filament and 30 kW anode dissipation capability. It is highly recommended for heavy duty applications such as industrial, rf heating service. A complete line of accessories is available including boiler, condenser, etc. for simplified systems installation.

PLATE DISSIPATION 30,000 watts
FREQUENCY FOR MAXIMUM RATINGS 100 MHz
COOLING Vapor and Forced Air



CHARACTERISTICS

| | | | |
|-----------------------------------|-----------------|--------------------|---------------|
| Filament: Thoriated tungsten | | Base Socket | Coaxial |
| Voltage | 6.3 volts | Maximum Seal Temp. | Eimac SK-1310 |
| Current | 158 amperes | Maximum Height | 250 °C |
| Capacitances (Grounded Filament): | | Maximum Diameter | 8.75 inches |
| Grid-Filament | 48.0 to 58.0 pf | Net Weight | 7.75 inches |
| Grid-Plate | 30.0 to 38.0 pf | | 22 pounds |
| Plate-Filament | 1.2 to 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---------------------------------------|-----------------------|----------------------|---------------------|---------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Current (amps) | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Output Power (watts) |
| C | Radio-Frequency Industrial Oscillator | 10,000 | 6.0 | 30,000 | 1.0 | 10,000 | 6.0 | 18,000 | 42,000 |

3CV30,000H3

The 3CV30,000H3 is a ceramic-metal power triode designed primarily for use in industrial radio-frequency heating service. Its vapor-cooled anode is conservatively rated at 30,000 watts plate dissipation when mounted in an Eimac BR-200 boiler.

PLATE DISSIPATION 30,000 watts
FREQUENCY FOR MAXIMUM RATINGS 100 MHz
COOLING Vapor and Forced Air



CHARACTERISTICS

| | | | |
|----------------------------------|-------------------|--------------------|-----------------|
| Filament: Thoriated tungsten | | Base Socket | Special SK-1310 |
| Voltage | 6.3 volts | Maximum Seal Temp. | 250 °C |
| Current | 172 amperes (max) | Maximum Height | 8.75 inches |
| Capacitances (Grounded Cathode): | | Maximum Diameter | 7.75 inches |
| Grid-Filament | 48 to 58 pf | Net Weight | 18 pounds |
| Grid-Plate | 30 to 38 pf | | |
| Plate-Filament | 1.2 to 1.5 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|--------------------------|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Industrial Oscillator | 10,000 | 6.0 | 30,000 | 500 | 10,000 | 6.0 | 365 | 42,000 |

7480

This triode is rated at 140 kilowatts input and 80 kilowatts of plate dissipation at frequencies to 30 Mc. Boilers and other accessories are available for the 7480 from Eimac.

PLATE DISSIPATION 80,000 watts
GRID DISSIPATION 750 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Vapor and Forced Air



CHARACTERISTICS

| | | | |
|-----------------------------------|-------------|--------------------|-------------|
| Filament: Thoriated tungsten | | Terminals | Coaxial |
| Voltage | 13.0 volts | Maximum Seal Temp. | 250 °C |
| Current | 205 amperes | Maximum Height | 20.2 inches |
| Capacitances (Grounded Filament): | | Maximum Diameter | 7.1 inches |
| Grid-Filament | 76 pf | Net Weight | 50 pounds |
| Grid-Plate | 55 pf | | |
| Plate-Filament | 2.7 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | Typical Operation | | | |
|--------------------|---|-----------------------|----------------------|---------------------|--------------------|-----------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B | Audio-Frequency Power Amplifier or Modulator | 16,000 | 11.0 | 80,000 | 750 | 12,000 | 20.0* | 600* | 150,000* |
| C | Radio-Frequency Power Amplifier or Oscillator | 16,000 | 11.0 | 80,000 | 750 | 15,000 | 7.0 | 600 | 80,000 |
| C | Plate-Modulated RF Power Amplifier | 10,000 | 8.5 | 53,000 | 750 | 10,000 | 8.2 | 2080 | 60,000 |

*Two tubes

TETRODES

INTERNAL ANODE



8165 / 4-65A

A general-purpose radial-beam power tetrode, the 4-65A is cooled by radiation and convection and may be used without forced air in most installations. Maximum ratings extend to 150 MHz.

PLATE DISSIPATION 65 watts
FREQUENCY FOR MAXIMUM RATINGS 150 MHz
COOLING Convection and Radiation

CHARACTERISTICS

| | | |
|-----------------------------------|---|-------|
| Filament: Thoriated tungsten | Base Socket: National HX29 or Johnson 122-101 | 5-pin |
| Voltage 6.0 volts | Max. Base-Seal Temp. 170 °C. | |
| Current 3.2 to 3.8 amperes | Max. Envelope Temp. 225 °C. | |
| Capacitances (Grounded Filament): | Max. Height 4.38 inches | |
| Input 6.0 to 8.3 pf | Max. Diameter 2.38 inches | |
| Output 1.9 to 2.6 pf | Net Weight 3 ounces | |
| Feed-Through 0.12 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 3000 | 0.150 | 65 | 10 | — | 1750 | 500 | 0.170* | 0 | 175* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 3000 | 0.150 | 65 | 10 | — | 3000 | 360 | 0.065 | 0 | 130 |
| AB ₂ | Audio-Frequency Power Amplifier and Modulator | 3000 | 0.150 | 65 | 10 | 5 | 1800 | 250 | 0.220* | 1.3* | 270* |
| C | Radio-Frequency Power Amplifier and Oscillator | 3000 | 0.150 | 65 | 10 | 5 | 3000 | 250 | 0.115 | 1.7 | 280 |
| C | Plate-Modulated R-F Power Amplifier | 2500 | 0.120 | 45 | 10 | 5 | 2500 | 250 | 0.110 | 2.6 | 230 |

*Two Tubes.



4D21 / 4-125A

This 125-watt general-purpose power tetrode is usable at maximum ratings to 120 MHz. Its low interelectrode capacitances make it ideal for r-f amplifier service but it is equally useful in audio applications.

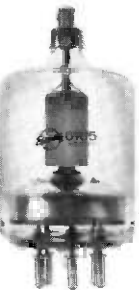
PLATE DISSIPATION 125 watts
FREQUENCY FOR MAXIMUM RATINGS 120 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|--|-------------------|
| Filament: Thoriated tungsten | Base Socket: National HX100 or Johnson 122-275 | 5-pin metal shell |
| Voltage 5.0 volts | Max. Base-Seal Temp. 170 °C. | |
| Current 6.0 to 7.0 amperes | Max. Envelope Temp. 225 °C. | |
| Capacitances (Grounded Filament): | Max. Height 5.69 inches | |
| Input 9.2 to 12.4 pf | Max. Diameter 2.81 inches | |
| Output 2.5 to 3.5 pf | Net Weight 6.5 ounces | |
| Feed-Through 0.07 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 3000 | 0.225 | 125 | 20 | — | 2500 | 600 | 0.232* | 0 | 330* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 3000 | 0.225 | 125 | 20 | — | 3000 | 510 | 0.105 | 0 | 200 |
| AB ₂ | Audio-Frequency Power Amplifier and Modulator | 3000 | 0.225 | 125 | 20 | 5 | 2500 | 350 | 0.260* | 1* | 400* |
| C | Radio-Frequency Power Amplifier and Oscillator | 3000 | 0.225 | 125 | 20 | 5 | 3000 | 350 | 0.167 | 2.5 | 375 |
| C | Plate-Modulated R-F Power Amplifier | 2500 | 0.200 | 85 | 20 | 5 | 2500 | 350 | 0.152 | 3.3 | 300 |

*Two Tubes.



6155

This 125-watt general-purpose power tetrode is usable at maximum ratings to 120 MHz. Its low interelectrode capacitances make it ideal for r-f amplifier service but it is equally useful in audio applications.

PLATE DISSIPATION 125 watts
FREQUENCY FOR MAXIMUM RATINGS 120 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|--|-------|
| Filament: Thoriated tungsten | Base Socket: National HX100 or Johnson 122-275 | 5-pin |
| Voltage 5.0 volts | Max. Base-Seal Temp. 170 °C. | |
| Current 6.0 to 7.0 amperes | Max. Envelope Temp. 225 °C. | |
| Capacitances (Grounded Filament): | Max. Height 5.69 inches | |
| Input 9.2 to 12.4 pf | Max. Diameter 2.81 inches | |
| Output 2.5 to 3.5 pf | Net Weight 6.5 ounces | |
| Feed-Through 0.07 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 3000 | 0.225 | 125 | 20 | — | 2500 | 600 | 0.232* | 0 | 330* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 3000 | 0.225 | 125 | 20 | — | 3000 | 510 | 0.105 | 0 | 200 |
| AB ₂ | Audio-Frequency Power Amplifier and Modulator | 3000 | 0.225 | 125 | 20 | 5 | 2500 | 350 | 0.260* | 1* | 400* |
| C | Radio-Frequency Power Amplifier and Oscillator | 3000 | 0.225 | 125 | 20 | 5 | 3000 | 350 | 0.167 | 2.5 | 375 |
| C | Plate-Modulated R-F Power Amplifier | 2500 | 0.200 | 85 | 20 | 5 | 2500 | 350 | 0.152 | 3.3 | 300 |

*Two Tubes.



5D22 / 4-250A

The Eimac 4-250A enjoys a 250-watt plate dissipation rating and is usable at maximum ratings through the FM broadcast band. Its low interelectrode capacitances make it an ideal choice for high-frequency applications but it is often used in audio-amplifier work as well.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 110 megacycles
COOLING Radiation and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|------------------------------|-------------------|
| Filament: Thoriated tungsten | Base Socket: Eimac SK-400 | 5-pin metal shell |
| Voltage 5.0 volts | Max. Base-Seal Temp. 170 °C. | |
| Current 13.5 to 14.7 amperes | Max. Envelope Temp. 225 °C. | |
| Capacitances (Grounded Filament): | Max. Height 6.38 inches | |
| Input 10.7 to 14.5 pf | Max. Diameter 3.56 inches | |
| Output 3.7 to 5.1 pf | Net Weight 8 ounces | |
| Feed-Through 0.14 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 4000 | 0.350 | 250 | 35 | — | 3000 | 600 | 0.417* | 0 | 750* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 4000 | 0.350 | 250 | 35 | — | 4000 | 510 | 0.165 | 0 | 450 |
| AB ₂ | Audio-Frequency Power Amplifier and Modulator | 4000 | 0.350 | 250 | 35 | 10 | 3000 | 300 | 0.473* | 1.9* | 1040* |
| C | Radio-Frequency Power Amplifier and Oscillator | 4000 | 0.350 | 250 | 35 | 10 | 4000 | 500 | 0.312 | 2.46 | 1000 |
| C | Plate-Modulated R-F Power Amplifier | 3200 | 0.275 | 165 | 35 | 10 | 3000 | 400 | 0.225 | 3.2 | 510 |

*Two Tubes.

TETRODES

INTERNAL ANODE

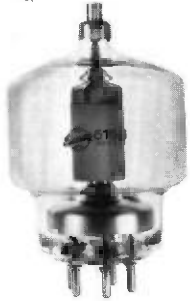
6156

The Eimac 6156 is a compact, ruggedly constructed power tetrode having a maximum plate dissipation rating of 250 watts. It is intended for use as an amplifier, oscillator or modulator.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

| | |
|-----------------------------------|-----------------------------|
| Filament: Thoriated tungsten | Base: 5-pin metal shell |
| Voltage: 5.0 volts | Socket: Eimac SK-400 |
| Current: 13.5 to 14.7 amperes | Max. Base-Seal Temp. 170 °C |
| Capacitances (Grounded Filament): | Max. Envelope Temp. 225 °C |
| Input: 10.7 to 14.5 pf | Max. Height: 6.38 inches |
| Output: 3.7 to 5.1 pf | Max. Diameter: 3.56 inches |
| Feed-Through: 0.14 pf | Net Weight: 8 ounces |



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 4000 | 0.350 | 250 | 35 | — | 3000 | 600 | 0.417* | 0 | 750* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 4000 | 0.350 | 250 | 35 | — | 4000 | 510 | 0.165 | 0 | 450 |
| AB ₂ | Audio-Frequency Power Amplifier and Modulator | 4000 | 0.350 | 250 | 35 | 10 | 3000 | 300 | 0.473* | 1.9* | 1040* |
| C | Radio-Frequency Power Amplifier and Oscillator | 4000 | 0.350 | 250 | 35 | 10 | 4000 | 500 | 0.312 | 2.46 | 1000 |
| C | Plate-Modulated R-F Power Amplifier | 3200 | 0.275 | 165 | 35 | 10 | 3000 | 400 | 0.225 | 3.2 | 510 |

*Two Tubes.

8438 / 4-400A

A 400-watt general-purpose radial-beam tetrode, the 4-400A is ideal for any r-f application below 110 MHz. Its ratings allow an input power of up to 1400 watts in such service or in others where lower radio frequencies or audio frequencies are to be amplified.

PLATE DISSIPATION 400 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

| | |
|-----------------------------------|-----------------------------|
| Filament: Thoriated tungsten | Base: 5-pin metal shell |
| Voltage: 5.0 volts | Socket: Eimac SK-400 |
| Current: 13.5 to 14.7 amperes | Max. Base-Seal Temp. 170 °C |
| Capacitances (Grounded Filament): | Max. Envelope Temp. 225 °C |
| Input: 10.7 to 14.5 pf | Max. Height: 6.38 inches |
| Output: 4.2 to 6.6 pf | Max. Diameter: 3.56 inches |
| Feed-Through: 0.17 pf | Net Weight: 9 ounces |



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 4000 | 0.350 | 400 | 35 | — | 4000 | 750 | 0.585* | 0 | 1540* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 4000 | 0.350 | 400 | 35 | — | 4000 | 705 | 0.250 | 0 | 650 |
| AB ₂ | Audio-Frequency Power Amplifier and Modulator | 4000 | 0.350 | 400 | 35 | 10 | 4000 | 500 | 0.638* | 3.5* | 1750* |
| C | Radio-Frequency Power Amplifier and Oscillator | 4000 | 0.350 | 400 | 35 | 10 | 4000 | 500 | 0.350 | 5.8 | 1100 |
| C | Plate-Modulated R-F Power Amplifier | 3200 | 0.275 | 270 | 35 | 10 | 3000 | 500 | 0.275 | 3.5 | 630 |

*Two Tubes.

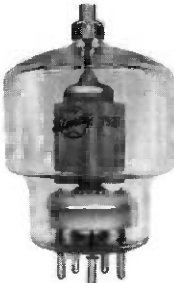
7527

The 7527 is an all glass power tetrode designed for amplifier, oscillator or modulator service. This tube is capable of operation at full ratings up to 110 MHz.

PLATE DISSIPATION 400 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

| | |
|-----------------------------------|-----------------------------|
| Filament: Thoriated tungsten | Base: 5-pin special |
| Voltage: 5.0 volts | Socket: Johnson 122-275 |
| Current: 14.5 amperes | Max. Base-Seal Temp. 170 °C |
| Capacitances (Grounded Filament): | Max. Envelope Temp. 225 °C |
| Input: 12.5 pf | Temp. 225 °C |
| Output: 4.7 pf | Max. Height: 5.962 inches |
| Feed-Through: 0.12 pf | Max. Diameter: 3.422 inches |
| | Net Weight: 6.7 ounces |



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier and Oscillator | 4000 | 0.350 | 400 | 35 | 10 | 3000 | 500 | 0.350 | 6.0 | 800 |
| C | Plate Modulated Radio Frequency Amplifier | 3200 | 0.275 | 400 | 35 | 10 | 3000 | 500 | 0.275 | 3.5 | 630 |
| AB | Audio-Frequency Power Amplifier and Modulator* | 4000 | 0.350 | 400 | 35 | 10 | 4000 | 750 | 0.585 | — | 1500 |

*Two tubes

6775

The 6775 is a ruggedized version of the 4-400A power tetrode which can be used as a direct replacement.

PLATE DISSIPATION 400 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

| | |
|-----------------------------------|-----------------------------|
| Filament: Thoriated tungsten | Base: EIA A5-97 |
| Voltage: 5.0 volts | Socket: Eimac SK-400 |
| Current: 14.5 amperes | Max. Base-Seal Temp. 170 °C |
| Capacitances (Grounded Filament): | Max. Envelope Temp. 225 °C |
| Input: 12.5 pf | Temp. 225 °C |
| Output: 4.5 pf | Max. Height: 6.375 inches |
| Feed-Through: 0.12 pf | Max. Diameter: 3.562 inches |
| | Net Weight: 9 ounces |



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier and Oscillator (CW or FM) | 4000 | 0.350 | 400 | 35 | 10 | 3000 | 500 | 0.350 | 5.9 | 800 |
| C | Plate Modulated Radio-Frequency Amplifier | 3200 | 0.275 | 270 | 35 | 10 | 3000 | 500 | 0.275 | 3.5 | 630 |
| AB | Audio-Frequency Power Amplifier and Modulator (Two tubes) | 4000 | 0.350 | 400 | 35 | 10 | 4000 | 750 | 0.585 | — | 1550 |

TETRODES

INTERNAL ANODE

8166/4-1000A

This high-power general-purpose tetrode is capable of dissipating 1000 watts from its radiation-cooled anode. Maximum ratings apply through the FM broadcast band but its low drive-power requirements make it an ideal choice for audio and low-frequency applications as well.

PLATE DISSIPATION 1000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|----------------------|-------------------|
| Filament: Thoriated tungsten | Base | 5-pin metal shell |
| Voltage 7.5 volts | Socket | Eimac SK-500 |
| Current 20.0 to 22.7 amperes | Max. Base-Seal Temp. | 150 °C |
| Capacitances (Grounded Filament): | Max. Envelope Temp. | 225 °C |
| Input 23.8 to 32.4 pf | Max. Height | 9.63 inches |
| Output 6.8 to 9.4 pf | Max. Diameter | 5.25 inches |
| Feed-Through 0.35 pf | Net Weight | 1.5 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 6000 | 0.700 | 1000 | 75 | — | 6000 | 1000 | 0.950* | 0 | 3840* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 6000 | 0.700 | 1000 | 75 | — | 6000 | 1000 | 0.475 | 0 | 1920 |
| AB ₂ | Audio-Frequency Power Amplifier and Modulator | 6000 | 0.700 | 1000 | 75 | 25 | 6000 | 500 | 0.950* | 4.7* | 3900* |
| C | Radio-Frequency Power Amplifier and Oscillator | 6000 | 0.700 | 1000 | 75 | 25 | 6000 | 500 | 0.700 | 15 | 3400 |
| C | Plate-Modulated R-F Power Amplifier | 5000 | 0.600 | 670 | 75 | 25 | 5500** | 500 | 0.600 | 9 | 2630 |

**Below 30 mc.

*Two Tubes.

EXTERNAL ANODE ■ CONDUCTION COOLED

4CN15A

A special version of the popular 4CX300A intended for use in low-duty pulse applications or where size and weight are important. The 4CN15A carries a nominal plate-dissipation rating of 15 watts but this may be extended by employing liquid immersion or another suitable heat sink. Its rugged design makes it ideal for applications where shock and/or vibration are encountered.

PLATE DISSIPATION 15 watts
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Convection or Conduction

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------------|----------------------|
| Cathode: Oxide-coated, unipotential | Base | Special, breechblock |
| Heater: Voltage 6.0 volts | Socket | Eimac SK-700 Series |
| Current 2.6 to 3.1 amperes | Maximum Seal Temp. | 250 °C |
| Capacitances (Grounded Cathode): | Max. Anode-Core Temp. | 250 °C |
| Input 25 to 33 pf | Max. Height | 2.5 inches |
| Output 3.5 to 4.5 pf | Max. Diameter | 0.894 inches |
| Feed-Through 0.06 pf | Net Weight | 2.5 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation |
|--------------------|---|-----------------------|---------------------|---------------------|----------------------|--------------------|---|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | |
| C | Radio-Frequency Power Amplifier or Oscillator | 2000 | 0.250 | 15* | 12 | 2 | Values dependent upon allowable plate dissipation |
| C | Plate-Modulated Radio Frequency Amplifier | 1500 | 0.200 | 9.5* | 12 | 2 | |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | ** | 0.250 | 15* | 12 | 2 | (determined by heat sink). |

**Below 250 Mc.

*May be increased by conduction cooling.

7843

The 7843 is a small coaxial power tetrode designed for UHF power amplifier and oscillator service up to 1200 MHz. The coaxial construction makes this tube suitable for cavity circuits.

PLATE DISSIPATION 115 watts
FREQUENCY FOR MAXIMUM RATINGS 1200 MHz
COOLING Conduction

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------------|--------------|
| Cathode: Oxide-coated, unipotential | Base | Coaxial |
| Heater: Voltage 26.5 volts | Max. Seal Temp. | 250 °C |
| Current 0.45 to 0.57 amperes | Max. Anode Core Temp. | 250 °C |
| Capacitances (Grounded Cathode): | Max. Height | 1.805 inches |
| Input 28.7 to 36.2 pf | Max. Diameter | 1.085 inches |
| Output 4.0 to 5.0 pf | | |
| Feed-Through 0.065 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|-----------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier and Oscillator | 1000 | 0.180* | 115 | 4.5 | — | 900 | 300 | 0.170 | 5.0 | 40 |

*With suitable cooler or heat sink.

8560A

The 8560A is a conduction cooled, general purpose tetrode. This compact power tube can be used at maximum ratings at frequencies up to 500 MHz. It is recommended for use in equipments of new design.

PLATE DISSIPATION See Note
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Conduction

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------------|---------------------|
| Cathode: Oxide-coated, unipotential | Base | Special |
| Heater: Voltage 6.0 volts | 9-pin, JEDEC | B8-236 |
| Current 2.6 amperes | Socket | Eimac SK-600 Series |
| Capacitances (Grounded Cathode): | Max. Envelope Temp. | 250 °C |
| Input 16.5 pf | Max. Anode Core Temp. | 250 °C |
| Output 5.0 pf | Max. Height | 2.445 inches |
| Feed-Through 0.04 pf | Max. Diameter | 1.630 inches |
| | Net Weight | 8.5 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier or Oscillator | 2000 | 250 | 250 | 12 | 2.0 | 900 | 200 | 0.195 | 5.0 | 112 |
| AB ₁ | Radio-Frequency Linear Amplifier | 2000 | 250 | 250 | 12 | 2.0 | 1500 | 350 | 0.250 | 2.9 | 390 |

This tube has a flat surface on the edge of the anode for contact to a suitable thermal conductor, usually a wafer of beryllium oxide. The dimension of the flat surface is 1 1/16" x 1/4". Thermal design should insure that for maximum expected anode dissipation, heat flow through the beryllium oxide wafer will be high enough to dissipate that power with no more than 225°C temperature at the interface between anode and beryllium oxide wafer.

TETRODES

EXTERNAL ANODE ■ CONDUCTION COOLED

4CS250H and 4CS250HA



The 4CS250H and 4CS250HA are conduction-cooled tetrodes having the basic electrical characteristics of the 4CX350A. These tubes are intended primarily for class AB₁ linear service. They have high trans-conductance and produce full output with extremely low drive power.

PLATE DISSIPATION 250 watts
COOLING Conduction

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------|---------------|
| Cathode: Oxide-coated, unipotential | Base | Special 9-pin |
| Heater: 6.0 volts | Socket | 5K-600 |
| Voltage | Max. Seal Temp. | 250 °C |
| Current | Max. Height | 2.4 inches |
| Capacitances (Grounded Cathode): | Net Weight | 4 ounces |
| Input | | |
| Output | | |
| Feed-Through | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|----------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|---------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Outf. Power (watts) |
| AB ₁ | AF Power Amplifier and Modulator | 2500 | 0.300 | 250 | 8.0 | 2.0 | 2200 | 400 | 0.580 | — | 770 |
| AB ₁ | RF Linear Amplifier | 2500 | 0.300 | 250 | 8.0 | 2.0 | 1500 | 400 | 0.265 | — | 200 |

*Two tube

EXTERNAL ANODE ■ FORCED-AIR COOLED

4CX125C and 4CX125F



The 4CX125C is a horizontally-finned version of the 4CX300A and is intended for use where transverse air cooling is desired. It is also useful where anode power is dissipated by liquid immersion. Its electrical characteristics are identical to those of the 4CX300A with the exception of plate dissipation which is established at 125 watts with air cooling. It is ideally suited for applications where shock and/or vibration are experienced. The 4CX125F is an identical tube with a 26.5 volt heater.

PLATE DISSIPATION 125 watts
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------------|----------------------|
| Cathode: Oxide-coated, unipotential | Base | Special, breechblock |
| Heater: 4CX125C 4CX125F | Socket | Eimac SK-700 series |
| Voltage | Max. Seal Temp. | 250 °C |
| Current | Max. Anode-Core Temp. | 250 °C |
| Capacitances (Grounded Cathode): | Max. Height | 2.50 inches |
| Input | Max. Diameter | 1.25 inches |
| Output | Net Weight | 3.5 ounces |
| Feed-Through | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|---------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Outf. Power (watts) |
| C | Radio-Frequency Power Amplifier and Oscillator | 2000 | 0.250 | 125 | 12 | 2 | 2000 | 250 | 0.250 | 2.9 | 39 |
| C | Plate-Modulated RF Power Amplifier | 1500 | 0.200 | 80 | 12 | 2 | 1500 | 250 | 0.200 | 1.7 | 23 |

6816



The 6816 is a small coaxial power tetrode designed for UHF power amplifier and oscillator service up to 1200 MHz. Coaxial construction makes this tube suitable for cavity circuits.

PLATE DISSIPATION 115 watts
FREQUENCY FOR MAXIMUM RATINGS 1200 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------|---------------|
| Cathode: Oxide-coated, unipotential | Base | Coaxial |
| Heater: | Socket | Erie 2948-000 |
| Voltage | Max. Seal Temp. | 250 °C |
| Current | Max. Height | 1.95 inches |
| Capacitances: | Max. Diameter | 1.31 inches |
| Input | Net Weight | 2.2 ounces |
| Output | | |
| Feed-Through | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|-----------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|---------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Outf. Power (watts) |
| C | RF Power Amplifier and Oscillator | 1000 | 0.180 | 115 | 4.5 | — | 900 | 300 | 0.170 | 5.0 | 40 |

6884



The 6884 is a small coaxial tetrode designed for UHF power amplifier and oscillator service up to 1200 MHz. The coaxial construction makes this tube suitable for cavity circuits. This tube is identical to the 6816 except for heater voltage.

PLATE DISSIPATION 115 watts
FREQUENCY FOR MAXIMUM RATINGS 1200 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------|---------------|
| Cathode: Oxide-coated, unipotential | Base | Coaxial |
| Heater: | Socket | Erie 2948-000 |
| Voltage | Max. Seal Temp. | 250 °C |
| Current | Max. Height | 1.95 inches |
| Capacitances: | Max. Diameter | 1.31 inches |
| Input | Net Weight | 2.2 ounces |
| Output | | |
| Feed-Through | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|---------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Outf. Power (watts) |
| C | Radio-Frequency Power Amplifier and Oscillator | 1000 | 0.180 | 115 | 4.5 | — | 900 | 300 | 0.170 | 5.0 | 40 |

TETRODES

EXTERNAL ANODE ■ FORCED-AIR COOLED

7034 / 4X150A and 7035 / 4X150D



The veteran of external anode tetrodes, and an Eimac original, continues to enjoy its deserved popularity. Recent tube improvements have made possible increases in maximum plate voltage and plate-dissipation ratings. In Class-AB or Class-C service an input power of 500 watts is now allowed at frequencies up to 150 MHz. The 4X150D is a 26.5 volt heater version of the 4X150A.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 150 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|--------------------------------------|-----------------------|---------------------|
| Cathode: Oxide-coated, unipotential | Base | 9-pin, special |
| Heater: 4X150A 4X150D | Socket | Eimac SK-600 series |
| Voltage 6.0 26.5 volts | Max. Base Seal Temp. | 175 °C |
| Current 2.3 to 2.9 0.50 to 0.62 amps | Max. Anode-Core Temp. | 250 °C |
| Capacitances (Grounded Cathode): | Max. Height | 2.404 inches |
| Input 14.5 to 17.0 pf | Max. Diameter | 1.640 inches |
| Output 4.0 to 4.8 pf | Net Weight | 4 ounces |
| Feed-Through 0.05 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 2000 | 0.250 | 250 | 12 | — | 2000 | 350 | 0.500* | 0 | 600* |
| AB ₂ | Radio-Frequency Linear Power Amplifier—SSB | 2000 | 0.250 | 250 | 12 | — | 2000 | 350 | 0.250 | 0 | 300 |
| C | Radio-Frequency Power Amplifier and Oscillator | 2000 | 0.250 | 250 | 12 | 2 | 2000 | 250 | 0.250 | 2.9 | 390 |
| C | Plate-Modulated RF Power Amplifier | 1600 | 0.200 | 165 | 12 | 2 | 1500 | 250 | 0.200 | 1.7 | 235 |

*Two tubes.



8172 / 4X150G

One of the forerunners in external-anode coaxial-based tetrodes, the 4X150G continues to deliver long life and high reliability in VHF and UHF applications. It is intended for use in CW service at frequencies up to 1200 MHz and is useful in pulse service at frequencies up to 1500 MHz.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 500 MHz CW
 1500 MHz Pulsed
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|------------------------------|--------------|
| Cathode: Oxide-coated, unipotential | Base | Coaxial |
| Heater: 4X150G | Max. Seal & Anode-Core Temp. | 175 °C |
| Voltage 2.5 volts | Max. Height | 2.750 inches |
| Current 6.2 to 7.3 amperes | Max. Diameter | 1.635 inches |
| Capacitances (Grounded Cathode): | Net Weight | 6 ounces |
| Input 25.0 to 29.0 pf | | |
| Output 4.0 to 4.9 pf | | |
| Feed-Through 0.05 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| B _{TV} | Radio-Frequency Linear Amplifier — TV Visual Service | 1250 | 0.250 | 250 | 12 | 2 | 1250 | 300 | 0.305* | 9 | 250* |
| C | Plate-Pulsed RF Power Amplifier and Oscillator | 7000 pulse | ** | 250 | 12 | 2 | 7000 pulse | 1000 | 6.0 | 1200 MHz Osc. | 17,000 |

*Peak synchronizing level.

**Maximum pulse cathode current, 7 amperes; maximum pulse duration, 5 microseconds.



8296 / 4X150R and 8297 / 4X150S

This Eimac tetrode is a ruggedized version of the famous 4X150A. It incorporates construction features found in the 4X300A and 4CX250R resulting in a tube capable of operating at full voltages in environments where moderate shock and vibration are present. The 4X150R will replace the 4X150A in nearly all applications since it is electrically identical except for a small (1.75 pF) increase in input-capacitance limits, in feed-through capacitance (0.01 pF) and in heater current (0.1 ampere). The 4X150S is identical but incorporates a 26.5 volt heater for mobile or airborne applications.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 150 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|--------------------------------------|-----------------------|---------------------|
| Cathode: Oxide-coated, unipotential | Base | 9-pin, special |
| Heater: 4X150R 4X150S | Socket | Eimac SK-600 series |
| Voltage 6.0 26.5 volts | Max. Base Seal Temp. | 175 °C |
| Current 2.4 to 3.0 0.56 to 0.68 amps | Max. Anode-Core Temp. | 250 °C |
| Capacitances (Grounded Cathode): | Max. Height | 2.404 inches |
| Input 16.25 to 18.75 pf | Max. Diameter | 1.640 inches |
| Output 4.0 to 4.8 pf | Net Weight | 4 ounces |
| Feed-Through 0.06 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 2000 | 0.250 | 250 | 12 | — | 2000 | 350 | 0.500* | 0 | 600* |
| AB ₂ | Radio-Frequency Linear Power Amplifier—SSB | 2000 | 0.250 | 250 | 12 | — | 2000 | 350 | 0.250 | 0 | 300 |
| C | Radio-Frequency Power Amplifier and Oscillator | 2000 | 0.250 | 250 | 12 | 2 | 2000 | 250 | 0.250 | 2.9 | 390 |
| C | Plate-Modulated RF Power Amplifier | 1600 | 0.200 | 165 | 12 | 2 | 1500 | 250 | 0.200 | 1.7 | 235 |

*Two tubes.



7203 / 4CX250B and 7204 / 4CX250F

A 250-watt general purpose external anode tetrode featuring ceramic-metal construction. This compact power tube can be used at maximum ratings at frequencies up to 500 MHz. It is recommended for use in equipments of new design. The 4CX250F is identical in all respects except for a heater rated at 26.5 volts.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------------|---------------------|
| Cathode: Oxide-coated, unipotential | Base | 9-pin, special |
| Heater: 4CX250B 4CX250F | Socket | Eimac SK-600 series |
| Voltage 6.0 26.5 volts | Max. Seal Temp. | 250 °C |
| Current 2.3 to 2.9 0.5 to 0.62 amps | Max. Anode-Core Temp. | 250 °C |
| Capacitances (Grounded Cathode): | Max. Height | 2.464 inches |
| Input 14.2 to 17.2 pf | Max. Diameter | 1.640 inches |
| Output 4.0 to 5.0 pf | Net Weight | 4 ounces |
| Feed-Through 0.06 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 2000 | 0.250 | 250 | 12 | — | 2000 | 350 | 0.500* | 0 | 600* |
| AB ₂ | Radio-Frequency Linear Power Amplifier—SSB | 2000 | 0.250 | 250 | 12 | — | 2000 | 350 | 0.250 | 0 | 300 |
| C | Radio-Frequency Power Amplifier and Oscillator | 2000 | 0.250 | 250 | 12 | 2 | 2000 | 250 | 0.250 | 2.9 | 390 |
| C | Plate-Modulated RF Power Amplifier | 1500 | 0.200 | 165 | 12 | 2 | 1500 | 250 | 0.200 | 1.7 | 235 |

*Two tubes.

TETRODES

EXTERNAL ANODE ■ FORCED-AIR COOLED

8621/4CX250FG

The 4CX250FG is essentially a 4CX250F manufactured for extra stability in airborne linear amplifier service.

PLATE DISSIPATION 250 watts
 FREQUENCY FOR MAXIMUM RATINGS 500 MHz
 COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
 Heater: 26.5 volts
 Current 0.62 amperes
 Capacitances (Grounded Cathode):
 Input 17.2 pf
 Output 5.0 pf
 Feed-Through 0.06 pf

Base 9-pin special Socket Eimac SK-600 Series
 Max. Seal Temp. 250 °C
 Max. Anode Core Temp. 250 °C
 Max. Height 2.464 inches
 Max. Diameter 1.640 inches
 Net Weight 4 ounces



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Radio-Frequency Linear Power Amplifier SSB | 2000 | 0.250 | 250 | 12 | — | 2000 | 350 | 0.250 | — | 300 |

7580W/4CX250R

4CX250R is a ruggedized version of the 7580. It is intended for use in environments where shock and vibration levels preclude the use of such a tube as the 4CX250B, and where the use of a higher-perveance tetrode is indicated. The 4CX250R is designed to operate with maximum rated plate and screen voltages applied in equipment where shock and/or vibration is experienced.

PLATE DISSIPATION 250 watts
 FREQUENCY FOR MAXIMUM RATINGS 500 MHz
 COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
 Heater: 6.0 volts
 Current 2.3 to 2.9 amperes
 Capacitances (Grounded Cathode):
 Input 16.0 to 18.5 pf
 Output 4.2 to 5.2 pf
 Feed-Through 0.06 pf

Base 9-pin, special Socket Eimac SK-600 series
 Max. Seal Temp. 250 °C
 Max. Anode Core Temp. 250 °C
 Max. Height 2.464 inches
 Max. Diameter 1.640 inches
 Net Weight 4 ounces



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 2000 | 0.250 | 250 | 12 | — | 2000 | 350 | 0.500* | 0 | 625* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 2000 | 0.250 | 250 | 12 | — | 2000 | 400 | 0.245 | 0 | 495 |
| C | Radio-Frequency Power Amplifier and Oscillator | 2000 | 0.250 | 250 | 12 | 2 | 2000 | 250 | 0.250 | 2.9 | 390 |
| C | Plate-Modulated R-F Power Amplifier | 1500 | 0.200 | 165 | 12 | 2 | 1500 | 250 | 0.200 | 1.7 | 235 |

*Two tubes

7609

The 7609 is a power tetrode intended for use as an amplifier or oscillator at full ratings up to 150 MHz. Useful power can be obtained at reduced ratings up to 500 MHz.

PLATE DISSIPATION 250 watts
 FREQUENCY FOR MAXIMUM RATINGS 150 MHz
 COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
 Heater: 26.5 volts
 Current 0.62 amps (max)
 Capacitances:
 Input 17.0 pf (max)
 Output 4.3 pf (max)
 Feed-Through 0.05 pf

Base 9-pin special Socket SK-600 series
 Max. Seal Temp. 175 °C
 Max. Height 2.40 inches
 Max. Diameter 1.64 inches
 Net Weight 4 ounces



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator | 1600 | 0.250 | 250 | 12 | 2.0 | 1500 | 250 | 0.250 | 3.2 | 280 |
| C | RF Power Amplifier or Oscillator 150 to 500 MHz | 1250 | 0.250 | 250 | 12 | 2.0 | 1250 | 250 | 0.200 | 10 | 140 |

8245/4CX250K and 8246/4CX250M

These coaxial base tetrodes are particularly useful as a CW rf amplifier between 500 and 1200 MHz. In pulse applications, the useful frequency is above 1500 MHz. The 4CX250K employs a 6.0 volt heater while the 4CX250M uses a 26.5 volt heater.

PLATE DISSIPATION 250 watts
 FREQUENCY FOR MAXIMUM RATINGS 500 MHz
 COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
 Heater: 4CX250K 6.0 volts, 4CX250M 26.5 volts
 Current 2.3 to 3.0 amperes
 Capacitances (Grounded Cathode):
 Input 25.0 to 29.0 pf
 Output 4.0 to 4.9 pf
 Feed-Through 0.05 pf

Base Special, coaxial
 Max. Seal Temp. 250 °C
 Max. Anode-Core Temp. 250 °C
 Max. Height 2.813 inches
 Max. Diameter 1.640 inches
 Net Weight 4 ounces



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 2000 | 0.250 | 250 | 12 | — | 2000 | 350 | 0.250 | 0 | 300 |
| C | Radio-Frequency Power Amplifier and Oscillator | 2000 | 0.250 | 250 | 12 | 2 | 2000 | 250 | 0.250 | 2.9 | 390 |
| C | Plate-Modulated RF Power Amplifier | 1500 | 0.200 | 165 | 12 | 2 | 1500 | 250 | 0.200 | 1.7 | 235 |

TETRODES

EXTERNAL ANODE ■ FORCED-AIR COOLED

4CPX250K



This tube is a pulse rated version of the coaxial 4CX250K. New cathode techniques permit pulse currents of over three amperes at pulse lengths up to 250 microseconds. Peak power output of 10kW is available at 0.005 duty.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS

COOLING

250 watts
500 MHz
Forced Air

CHARACTERISTICS

| | |
|-------------------------------------|------------------------------|
| Cathode: Oxide-coated, unipotential | Base: Special, coaxial |
| Heater: 6.0 volts | Max. Seal Temp. 250 °C |
| Current: 2.3 to 3.0 amperes | Max. Anode Core Temp. 250 °C |
| Capacitances (Grounded Grid): | Max. Height 2.813 inches |
| Input 14.5 to 19.0 pf | Max. Diameter 1.640 inches |
| Output 3.9 to 4.1 pf | Net Weight 4 ounces |
| Feed-Through 0.01 pf | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|-------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Duty | Output Power (watts) |
| C | Grid-Pulsed Amplifier 450 MHz-250 μsec pulses | 5,500 | 0.250 | 250 | 12 | 2 | 5,500 | 1,000 | 0.250 | 0.005 | 10,000 |

8167 / 4CX300A



This rugged ceramic-metal tetrode with unique breechblock basing has electrical characteristics similar to other tubes in the 4K150 and 4X250 families but is especially suited for service in severe environments. Its unusual internal construction assures reliable operation at acceleration levels up to 20 g's. Suitable for service from dc to 500 MHz, the 4CX300A is first choice for use in new equipment where shock and/or vibration are expected.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS

COOLING

300 watts
500 MHz
Forced Air

CHARACTERISTICS

| | |
|-------------------------------------|------------------------------|
| Cathode: Oxide-coated, unipotential | Base: Special, breechblock |
| Heater: 6.0 volts | Socket: Eimac SK-700 series |
| Current: 2.6 to 3.1 amperes | Max. Seal Temp. 225 °C |
| Capacitances (Grounded Cathode): | Max. Anode Core Temp. 250 °C |
| Input 25 to 33 pf | Max. Height 2.5 inches |
| Output 3.5 to 4.5 pf | Max. Diameter 1.65 inches |
| Feed-Through 0.06 pf | Net Weight 4 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 2500 | 0.250 | 300 | 12 | — | 2500 | 350 | 0.500* | 0 | 800* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 2500 | 0.250 | 300 | 12 | — | 2500** | 350 | 0.250 | 0 | 400 |
| C | Radio-Frequency Power Amplifier and Oscillator | 2500 | 0.250 | 300 | 12 | 2 | 2500** | 250 | 0.250 | 2.8 | 500 |
| C | Plate-Modulated R-F Power Amplifier | 1500 | 0.200 | 200 | 12 | 2 | 1500 | 250 | 0.200 | 1.7 | 235 |

*Two tubes. **Below 250 MHz only.

4CX300Y



This special version of the 4CX300A has a higher plate current rating which allows 60 per cent more input power. Physically identical to the 4CX300A, the Eimac 4CX300Y is attractive for general use wherever a compact high-power tetrode is indicated.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS

COOLING

400 watts
110 MHz
Forced Air

CHARACTERISTICS

| | |
|-------------------------------------|------------------------------|
| Cathode: Oxide-coated, unipotential | Base: Special, breechblock |
| Heater: 6.0 volts | Socket: Eimac SK-700 series |
| Current: 3.00 to 3.85 amperes | Max. Seal Temp. 250 °C |
| Capacitances (Grounded Cathode): | Max. Anode Core Temp. 250 °C |
| Input 30.0 to 38.0 pf | Max. Height 2.5 inches |
| Output 3.9 to 5.0 pf | Max. Diameter 1.65 inches |
| Feed-Through 0.07 pf | Net Weight 4 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 2,000 | 0.4 | 400 | 8 | — | 2,000 | 400 | 0.75* | 0 | 850* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 2,000 | 0.4 | 400 | 8 | — | 2,000 | 400 | 0.375 | 0 | 450 |
| C | Radio-Frequency Power Amplifier and Oscillator | 2,000 | 0.4 | 400 | 8 | 1 | 2,000 | 250 | 0.4 | 3.8 | 600 |
| C | Plate-Modulated R-F Power Amplifier | 1,500 | 0.3 | 250 | 8 | 1 | 1,500 | 250 | 0.3 | 1.7 | 300 |

*Two tubes.

8072



The 8072 is a conduction cooled ceramic and metal power tetrode designed for use in radio frequency power amplifier, oscillator and linear RF power amplifier service.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS

COOLING

See Note
500 MHz
Conduction

CHARACTERISTICS

| | |
|-------------------------------------|------------------------------|
| Cathode: Oxide-coated, unipotential | Base: 11-pin |
| Heater: 13.5 volts | Socket: Mycalex CP464-2 |
| Current: 1.3 amperes | Max. Seal Temp. 250 °C |
| Capacitances (Grounded Cathode): | Max. Anode Core Temp. 250 °C |
| Input 16.0 pf | Max. Height 2.26 inches |
| Output 7.0 pf | Max. Diameter 1.436 inches |
| Feed-Through 0.01 pf | Net Weight 2 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|-----------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier and Oscillator | 2200 | 0.300 | See Note | 8.0 | — | 700 | 175 | 0.30 | 1.2 | 110 |
| AB | Linear Radio-Frequency Amplifier | 2200 | 0.300 | See Note | 8.0 | — | 700 | 250 | 0.205 | 0.3 | 80 |

NOTE:

Maximum plate dissipation is limited by maximum anode core temperature which is dependent on the type of conduction cooling employed. With a suitable thermal conductor, such as beryllium oxide, the thermal design should insure that for maximum expected anode dissipation, heat flow through the beryllium oxide thermal conductor will be sufficient to dissipate that power with no more than 225°C at the interface between anode and beryllium oxide.

TETRODES

EXTERNAL ANODE ■ FORCED-AIR COOLED

8121 and 8122

The 8121 and 8122 are ceramic and metal air-cooled power tetrodes intended for use in radio-frequency power amplifier, oscillator and linear RF power amplifier service.

PLATE DISSIPATION 8121 — 150 watts, 8122 — 400 watts
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------------|-------------------|
| Cathode: Oxide-coated, unipotential | Base | 11-pin |
| Heater: Voltage 13.5 volts | Socket | Mycalex CP464-2 |
| Current 1.3 amperes | Max. Seal Temp. | 250 °C |
| Capacitances: | Max. Anode Core Temp. | 250 °C |
| Input 16.0 pf | Max. Height | 8121 2.196 inches |
| Output 7.0 pf | 8122 | 2.260 inches |
| Feed-Through 0.01 pf | Max. Diameter | 8121 1.75 inches |
| | 8122 | 1.640 inches |
| | Net Weight | 3 ounces |



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier and Oscillator | 2200 | 0.250 | 105 | 5.0 | — | 1000* | 200 | 0.30 | 5.0 | 165 |
| AB | Linear Radio-Frequency Amplifier | 2200 | 0.300 | 150 | 8.0 | — | 1500** | 250 | 0.210 | 0.3 | 170 |

*In grid circuit at 470 MHz

**30 MHz

8321 / 4CX350A and 8322 / 4CX350F

These tubes are externally identical to the 4CX250B but contain more rugged internal construction. These compact radial beam tetrodes have plate dissipation ratings of 350 watts. These tubes are intended primarily for Class-AB₁ linear service having high transconductance and allowing full output with extremely low drive requirements. The 4CX350A and 4CX350F differ only in heater voltages.

PLATE DISSIPATION 350 watts
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|--------------------------------------|-----------------------|----------------------|
| Cathode: Oxide-coated, unipotential | Base | Special, breechblock |
| Heater: 4CX350A 4CX350F | Socket | Eimac SK-600 Series |
| Voltage 6.0 26.5 volts | Max. Seal Temp. | 250 °C |
| Current 2.9 to 3.6 0.66 to 0.81 amps | Max. Anode-Core Temp. | 250 °C |
| Capacitances (Grounded Cathode): | Max. Height | 2.46 inches |
| Input 22.2 to 26.2 pf | Max. Diameter | 1.64 inches |
| Output 5.0 to 6.0 pf | Net Weight | 4 ounces |
| Feed-Through 0.05 pf | | |



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 2000 | 0.4 | 350 | 8 | — | 2000 | 400 | 0.54* | 0 | 600* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 2000 | 0.4 | 350 | 8 | — | 2000 | 400 | 0.27 | 0 | 300 |

*Two tubes.

4CX600B/F

The 4CX600B/F is a ceramic and metal, air-cooled radial-beam tetrode designed for use in wideband amplifiers, particularly, distributed amplifiers. The mechanical and electrical features of this tube are compatible with wideband amplifier circuit requirements.

PLATE DISSIPATION 600 watts
FREQUENCY FOR MAXIMUM RATINGS 800 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------|------------|
| Cathode: Oxide-coated, unipotential | Base | Special |
| Heater: 4CX600B 4CX600F | Socket | Special |
| Voltage 6.0 26.5 volts | Max. Seal Temp. | 250 °C |
| Current 4.3 0.93 amperes | Max. Height | 2.5 inches |
| Capacitances (Grounded Filament): | Max. Diameter | 3.0 inches |
| Input 42 to 48 pf | Net Weight | 7 ounces |
| Output 5.0 to 6.0 pf | | |
| Feed-Through 0.20 pf | | |



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|----------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB | Broadband Linear Amplifier | 3000 | 0.600 | 600 | 15 | 3.0 | 2500 | 275 | 0.585 | 1.0 | 1000 |

4CX600J

A highly linear beam tetrode for amplifier service. Low input capacitance and high voltage gain provide an ideal amplifier for use with a solid state driver. 3rd and 5th order IMD products — 31 dB or better when operated as below.

PLATE DISSIPATION 600 watts (max.)
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------------|----------------------|
| Cathode: Oxide-coated, unipotential | Base | Special 9-pin-BB-236 |
| Heater: Voltage 6.0 volts | Socket | Special |
| Current 5.4 amperes | Max. Seal Temp. | 250 °C |
| Capacitances: | Max. Anode Core Temp. | 250 °C |
| Input 50.0 pf | Max. Height | 2.70 inches |
| Output 5.3 pf | Max. Diameter | 2.08 inches |
| Feed-Through 0.2 pf(max) | Net Weight | 7.7 ounces |



| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|----------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Radio-Frequency Linear Amplifier | 3000 | 0.6 | 600 | 15 | 1.0 | 2000 | 350 | 0.487 | — | 550 |

*In grid driven circuit at 470 MHz

**30 MHz

Note: Use a bypassed cathode resistor of approximately 11 ohms.

TETRODES



8168/4CX1000A

This high-power ceramic-metal tetrode is an excellent choice for applications where class-AB₁ operation is desired. It is capable of delivering more than 1500 watts plate output power per tube in audio or r-f service without requiring grid driving power. It is recommended for use in new equipments.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS

COOLING

1000 watts
110 MHz
Forced Air

CHARACTERISTICS

| | |
|-------------------------------------|-------------------------------|
| Cathode: Oxide-coated, unipotential | Base: Special, breechblock |
| Heater: 6.0 volts | Socket: Eumac SK-800 series |
| Current: 8.1 to 9.9 amperes | Max. Seal Temp.: 250 °C |
| Capacitances (Grounded Cathode): | Max. Anode-Core Temp.: 250 °C |
| Input: 77 to 90 pf | Max. Height: 4.8 inches |
| Output: 11 to 13 pf | Max. Diameter: 3.37 inches |
| Feed-Through: 0.02 pf | Net Weight: 27 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 3000 | 1.0 | 1000 | 12 | 0 | 3000 | 325 | 1.75* | 0 | 3260* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 3000 | 1.0 | 1000 | 12 | 0 | 3000 | 325 | .875 | 0 | 1630 |

*Two tubes.



8352/4CX1000K

This high-power ceramic-metal tetrode is electrically identical to the 4CX1000A, but gives improved performance at UHF due to its soldering screen terminal. This terminal surface improves isolation between input and output circuits to a marked degree and insures stable UHF operation as a class-AB₁ amplifier.

PLATE DISSIPATION

COOLING

1000 watts
Forced Air

CHARACTERISTICS

| | |
|-------------------------------------|-------------------------------------|
| Cathode: Oxide-coated, unipotential | Base: Special, ring and breechblock |
| Voltage: 6.0 volts | Socket: SK-820 |
| Current: 8.1 to 9.9 amperes | Max. Seal Temp.: 250 °C |
| Capacitances (Grounded Cathode): | Max. Anode Core Temp.: 250 °C |
| Input: 84 pf | Max. Height: 4.75 inches |
| Output: 12 pf | Max. Diameter: 3.36 inches |
| Feed-Through: 0.02 pf | Net Weight: 28 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 3000 | 1.0 | 1000 | 12 | 0 | 2500 | 325 | 0.885 | 0 | 1300 |



4CX1500A

The 4CX1500A is a compact, high power ceramic and metal tetrode. It incorporates rugged internal construction features. A feature of this tube is the sturdy mesh cathode which allows it to meet demanding vibration and shock requirements. The 4CX1500A is useful up to 110 MHz and is recommended for use as a RF linear amplifier, a Class AB audio amplifier, a Class C power amplifier, plate modulated amplifier or a pulse modulator.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS

COOLING

1500 watts
110 MHz
Forced Air

CHARACTERISTICS

| | |
|-----------------------------------|-------------------------------|
| Filament: Thoriated tungsten | Base: Breechlock |
| Voltage: 5.0 volts | Socket: SK-831 |
| Current: 38 to 43 amperes | Max. Seal Temp.: 250 °C |
| Capacitances (Grounded Filament): | Max. Envelope Temp.: 250 °C |
| Input: 68.0 to 78.0 pf | Max. Anode Temp.: 250 °C |
| Output: 10.5 to 14.5 pf | Max. Anode Core Temp.: 250 °C |
| Feed-Through: 0.4 pf (max) | Max. Height: 4.825 inches |
| | Max. Diameter: 3.370 inches |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Telegraphy | 5000 | 1.0 | 1500 | 75 | 25 | 4500 | 500 | 0.9 | 9.0 | 3200 |
| C | Telephony | 3500 | 0.8 | 1000 | 75 | 25 | 3200 | 500 | 0.8 | 10 | 1900 |
| B or AB | Linear Amplifier | 4000 | 1.0 | 1500 | 75 | 25 | 3800 | 500 | 1.33* | — | 3200* |
| — | Pulse Modulator; Pulse Length 100m sec. max. | 5000 | 6.0 pk | 1500 | 75 | 25 | 5000 | 1500 | 6.0 pk | — | 24,000 pk |

*Two tubes



8660/4CX1500B

The 4CX1500B is a ceramic-metal, forced-air cooled, radial-beam tetrode with a rated plate dissipation of 1500 watts. It is a low-voltage, high-current tube specifically designed for exceptionally low intermodulation distortion and low grid interception. The low distortion characteristics make the tube especially suitable for RF and AF linear amplifier service.

PLATE DISSIPATION

COOLING

1500 watts
Forced Air

CHARACTERISTICS

| | |
|-------------------------------------|-------------------------------|
| Cathode: Oxide-coated, unipotential | Base: Special |
| Heater: 6.0 volts | Socket: SD-800 Series |
| Current: 11 amperes | Max. Seal Temp.: 250 °C |
| Capacitances (Grounded Cathode): | Max. Anode Core Temp.: 250 °C |
| Input: 88 pf (max) | Max. Height: 4.8 inches |
| Output: 12.8 pf (max) | Max. Diameter: 3.37 inches |
| Feed-Through: 0.3 pf (max) | Net Weight: 27 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₂ | RF Linear Amplifier | 3000 | 0.900 | 1500 | 12 | 1.0 | 2500 | 225 | 0.720 | 1.5 | 900 |
| AB ₁ | AF Amplifier or Modulator | 3000 | 0.900 | 1500 | 12 | 1.0 | 2500 | 325 | 1.69* | — | 2258* |

*Two tubes

TETRODES

EXTERNAL ANODE ■ FORCED-AIR COOLED



8169 / 4CX3000A

The 4CX3000A is a new ceramic-metal tetrode designed especially for class-AB₁ linear amplifier service. In such service, the intermodulation distortion products produced by the 4CX3000A are of very low level, typically 32 to 44 db below PEP level, depending on operating conditions. The ample grid and screen dissipation ratings also make the 4CX3000A attractive for use as a class-C amplifier. The 4CX3000A is first choice for modern, new equipment design.

PLATE DISSIPATION

3000 watts

FREQUENCY FOR MAXIMUM RATINGS

150 MHz

COOLING

Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|-----------------------|------------------------------|
| Filament: Thoriated tungsten | Base | Special, ring and brechblock |
| Voltage 9.0 volts | Socket | Eimac SK-1400 |
| Current 43.5 amperes | Max. Seal Temp. | 250 °C |
| Capacitances (Grounded Filament): | Max. Anode Core Temp. | 250 °C |
| Input 140 pf | Max. Height | 7.90 inches |
| Output 14.5 pf | Max. Diameter | 4.63 inches |
| Feed-Through 1.4 pf (max) | Net Weight | 5.5 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.0 | 3500 | 175 | 50 | 5000 | 850 | 3.6* | 0 | 11,400* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 6000 | 2.0 | 3500 | 175 | 50 | 5000 | 850 | 1.65 | 0 | 5300 |
| C | Radio-Frequency Power Amplifier and Oscillator | 7000 | 2.0 | 3000 | 175 | 50 | 7000 | 500 | 1.9 | 41 | 11,000 |
| C | Plate-Modulated R-F Power Amplifier | 5000 | 1.4 | 2000 | 175 | 50 | 5000 | 500 | 1.4 | 31 | 5750 |

*Two tubes.



8170 / 4CX5000A

This high-power ceramic and metal tetrode features high class-AB₁ output power at audio and radio frequencies. It is also an excellent choice for AM or FM commercial service where high-efficiency class-C operation is desired. Its modern and straight-forward design makes it preferred for use in new equipments.

PLATE DISSIPATION

5000 watts

FREQUENCY FOR MAXIMUM RATINGS

30 MHz

COOLING

Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|-----------------------|---------------------|
| Filament: Thoriated tungsten | Base | Special, concentric |
| Voltage 7.5 volts | Socket | Eimac SK-300A |
| Current 73 to 78 amperes | Max. Seal Temp. | 250 °C |
| Capacitances (Grounded Filament): | Max. Anode-Core Temp. | 250 °C |
| Input 108 to 122 pf | Max. Height | 9.125 inches |
| Output 18.0 to 23.0 pf | Max. Diameter | 4.938 inches |
| Feed-Through 1.0 pf | Net Weight | 9.5 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 7500 | 4.0 | 6000 | 250 | 75 | 7000 | 1250 | 3.65* | 0 | 17,500* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 7500 | 4.0 | 6000 | 250 | 75 | 7500 | 1250 | 1.9 | 0 | 10,000 |
| C | Radio-Frequency Power Amplifier and Oscillator | 7500 | 3.0 | 5000 | 250 | 75 | 7500 | 500 | 2.8 | 150 | 16,000 |
| C | Plate-Modulated R-F Power Amplifier | 5500 | 2.5 | 3500 | 250 | 75 | 5000 | 500 | 1.4 | 25 | 5800 |

*Two tubes.



4CX5000J

The 4CX5000J is recommended for use in linear amplifier service where low levels of intermodulation distortion are required, and where the mechanical environment includes shock and vibration as in transportable equipment.

PLATE DISSIPATION

5000 watts

COOLING

Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|-----------------------|-------------------------|
| Filament: Thoriated tungsten mesh | Base | Coaxial |
| Voltage 7.5 volts | Socket | Eimac SK-300 or SK-300A |
| Current 100 amperes | Max. Envelope Temp. | 250 °C |
| | Max. Anode Core Temp. | 250 °C |
| | Max. Height | 9.125 inches |
| | Max. Diameter | 4.938 inches |
| | Net Weight | 9.5 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|----------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Radio-Frequency Linear Amplifier | 7500 | 4.0 | 5000 | 250 | 75 | 4050 | 800 | 1.61 | — | 3750 |



8170W / 4CX5000R

A ruggedized version of the 4CX5000A power tetrode, the 4CX5000R incorporates a sturdy mesh cathode construction. Electrically identical to the "A" version, it is an excellent choice for high power applications in severe environments.

PLATE DISSIPATION

5000 watts

FREQUENCY FOR MAXIMUM RATINGS

30 MHz

COOLING

Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|-----------------------|---------------------|
| Filament: Thoriated tungsten | Base | Special, concentric |
| Voltage 7.5 volts | Socket | Eimac SK-300A |
| Current 73 to 78 amperes | Max. Seal Temp. | 250 °C |
| Capacitances (Grounded Filament): | Max. Anode-Core Temp. | 250 °C |
| Input 108 to 122 pf | Max. Height | 9.125 inches |
| Output 18.0 to 23.0 pf | Max. Diameter | 4.938 inches |
| Feed-Through 1.0 pf | Net Weight | 9.5 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 7500 | 4.0 | 6000 | 250 | 75 | 7000 | 1250 | 3.65* | 0 | 17,500* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 7500 | 4.0 | 6000 | 250 | 75 | 7500 | 1250 | 1.9 | 0 | 10,000 |
| C | Radio-Frequency Power Amplifier and Oscillator | 7500 | 3.0 | 5000 | 250 | 75 | 7500 | 500 | 2.8 | 150 | 16,000 |
| C | Plate-Modulated RF Power Amplifier | 5000 | 2.5 | 3500 | 250 | 75 | 5000 | 500 | 1.4 | 25 | 5800 |

*Two tubes.

TETRODES

EXTERNAL ANODE ■ FORCED-AIR COOLED

8171 / 4CX10,000



This Eimac tetrode is electrically identical to the 4CX5000A except for its plate dissipation rating and is intended for use where the extra plate dissipation is a necessity. It may be used at maximum ratings through 30 MHz and at slightly reduced ratings through the FM broadcast band.

PLATE DISSIPATION 10,000 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Forced Air

CHARACTERISTICS

| | |
|-----------------------------------|------------------------------|
| Filament: Thoriated tungsten | Base: Special, concentric |
| Voltage 7.5 volts | Socket Eimac SK-300A |
| Current 73 to 78 amperes | Max. Seal Temp. 250 °C |
| Capacitances (Grounded Filament): | Max. Anode-Core Temp. 250 °C |
| Input 115 pf | Max. Height 9.13 inches |
| Output 21 pf | Max. Diameter 7.05 inches |
| Feed-through 1.0 pf | Net Weight 12.2 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 7500 | 4.00 | 12,000 | 250 | 75 | 7500 | 1500 | 6.66* | 0 | 31,900* |
| AB ₂ | Radio-Frequency Linear Power Amplifier | 7500 | 4.00 | 12,000 | 250 | 75 | 7500 | 1500 | 3.33 | 0 | 15,950 |
| C | Plate-Modulated r-f Power Amplifier | 5000 | 2.5 | 6650 | 250 | 75 | 5000 | 500 | 1.4 | 25 | 5800 |
| C | Radio-Frequency Power Amplifier and Oscillator | 7500 | 3.0 | 10,000 | 250 | 75 | 7500 | 500 | 2.8 | 150 | 16,000 |

*Two tubes.

8281 / 4CX15,000A



A versatile addition to the Eimac line of ceramic-metal power tetrodes, the 4CX15,000A is similar to the 4CX10,000 but features higher plate voltage and current and greater plate dissipation. These increased capabilities allow it to operate at full ratings through the FM broadcast band. The 4CX15,000A is recommended for use in new equipment design.

PLATE DISSIPATION 15,000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Forced Air

CHARACTERISTICS

| | |
|-----------------------------------|------------------------------|
| Filament: Thoriated tungsten | Base: Special, concentric |
| Voltage 6.3 volts | Socket Eimac SK-300A |
| Current 152 to 168 amperes | Max. Seal Temp. 250 °C |
| Capacitances (Grounded Filament): | Max. Anode Core Temp. 250 °C |
| Input 148.5 to 161.5 pf | Max. Height 9.44 inches |
| Output 22.0 to 27.0 pf | Max. Diameter 7.58 inches |
| Feed-Through 2.0 pf | Net Weight 12.8 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier and Oscillator | 10,000 | 5.0 | 15,000 | 450 | 200 | 10,000 | 750 | 4.55 | 220 | 36,500 |
| C | Plate-Modulated r-f Power Amplifier | 8,000 | 4.0 | 10,000 | 450 | 200 | 8,000 | 750 | 3.65 | 150 | 23,500 |
| AB ₁ | Audio-Frequency Power Amplifier or Modulator | 10,000 | 6.0 | 15,000 | 450 | 200 | 10,000 | 1500 | 8.5* | 0 | 57,000* |

*Two tubes.

4CX15,000J



The 4CX15,000J is recommended for use in linear amplifier service where low levels of intermodulation distortion are required, and where the mechanical environment includes shock and vibration as in transportable equipment.

PLATE DISSIPATION 15,000 watts
COOLING Forced Air

CHARACTERISTICS

| | |
|-----------------------------------|---------------------------------|
| Filament: Thoriated tungsten mesh | Base: Coaxial |
| Voltage 7.5 volts | Socket Eimac SK-300, or SK-300A |
| Current 153 amperes | Max. Envelope Temp. 250 °C |
| | Max. Anode Core Temp. 250 °C |
| | Max. Height 9.375 inches |
| | Max. Diameter 7.580 inches |
| | Net Weight 12.8 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|----------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Radio-Frequency Linear Amplifier | 10,000 | 6.0 | 15,000 | 450 | 200 | 7500 | 1250 | 2.83 | — | 13,000 |

8349 / 4CX35,000C



Eimac's largest, forced-air cooled power tetrode has a plate dissipation rating of 35 kilowatts and is usable to 20,000 plate volts in Class-C and Class-AB amplifier service. A single 4CX35,000C will deliver over 100 kilowatts of CW power as a Class-C power amplifier or oscillator.

PLATE DISSIPATION 35,000 watts
COOLING Forced Air

CHARACTERISTICS

| | |
|-----------------------------------|---------------------------------|
| Filament: Thoriated tungsten | Base: Special, concentric rings |
| Voltage 10.0 volts | Socket Eimac SK-1500 |
| Current 300 amperes | Max. Seal Temp. 250 °C |
| Capacitances (Grounded Filament): | Max. Anode Core Temp. 250 °C |
| Input 465 pf | Max. Height 17.0 inches |
| Output 55 pf | Max. Diameter 9.75 inches |
| Feed-Through 2.45 pf | Net Weight 50 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 20,000 | 15.0 | 35,000 | 1750 | 500 | 12,000 | 1500 | 9.2* | 0 | 70,000* |
| AB ₂ | Radio-Frequency Linear Power Amplifier -SSB | 20,000 | 15.0 | 35,000 | 1750 | 500 | 15,000 | 1500 | 5.7 | 0 | 55,000 |
| C | Radio-Frequency Power Amplifier and Oscillator | 20,000 | 15.0 | 35,000 | 1750 | 500 | 19,000 | 750 | 6.97 | 258 | 110,000 |
| C | Plate-Modulated r-f Power Amplifier | 14,000 | 15.0 | 23,000 | 1750 | 500 | 12,000 | 750 | 5.40 | 125 | 58,000 |

*Two tubes.

TETRODES

EXTERNAL ANODE ■ FORCED-AIR COOLED



4X500A

This medium-power external-anode tetrode finds wide acceptance in FM broadcast service. The instant-heating filament of thoriated tungsten and the overall compactness are but two of the 4X500A's bonus features. Maximum ratings apply to 120 MHz.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS 120 MHz — class-C CW 500 watts
220 MHz — class-B TV

COOLING

Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 12.2 to 13.7 amperes
Capacitances (Grounded Cathode):
Input 10.6 to 14.4 pf
Output 4.9 to 6.9 pf
Feed-Through 0.1 pf

Base 4-pin special
Socket Eimac SK-900
Max. Anode-Core Temp. 175 °C
Max. Seal Temp. 175 °C
Max. Height 4.750 inches
Max. Diameter 2.625 inches
Net Weight 1.7 pounds

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| B7v | Radio-Frequency Linear Amplifier — TV Visual Service | 3000 | 0.350 | 500 | 30 | 10 | 2400 | 500 | 0.400* | 25* | 600* |
| C | Radio-Frequency Power Amplifier and Oscillator | 4000 | 0.350 | 500 | 30 | 10 | 4000 | 500 | 0.315 | 5 | 835 |

*Peak synchronizing level.

EXTERNAL ANODE ■ WATER COOLED



4CW800B and 4CW800F

The 4CW800B/F is a ceramic-metal, liquid-cooled radial-beam tetrode. Its low lead-inductance, low input and output capacitance and small size make it ideal for use in distributed amplifiers for which it was especially designed. Rugged construction, unitized electrode structure and direct mounting to the chassis make the tube suitable for severe shock and vibration environments.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS 800 MHz
COOLING Liquid

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater: 4CW800B 4CW800F
Voltage 6.0 26.5 volts
Current 4.7 1.25 amperes
Capacitances (Grounded Filament):
Input 48 pf (max)
Output 6.0 pf (max)
Feed-Through 0.15 pf

Base Special
Socket Eimac SK-800 series
Max. Seal Temp. 250 °C
Max. Base Temp. 150 °C
Max. Height 3.0 inches
Max. Diameter 3.0 inches
Net Weight 7.0 ounces

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|----------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB1 | Broadband Linear Amplifier | 3000 | 0.600 | 800 | 15 | 3.0 | 1500 | 275 | 0.580 | 0.12 | 590 |



8244/4CW2000A

This recent addition to the Eimac line is electrically identical to the popular 4CX1000A except for its plate-dissipation rating which is 2000 watts. It is intended for use where water cooling is preferred or where higher anode-dissipation capability is required.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS 2000 watts
COOLING Water and Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater: 8244 4CW2000A
Voltage 6.0 volts
Current 8.1 to 9.9 amperes
Capacitances (Grounded Cathode):
Input 77 to 90 pf
Output 11 to 13 pf
Feed-Through 0.02 pf

Base Special, breechblock
Socket Eimac SK-800 series
Max. Seal Temp. 250 °C
Max. Height 5.540 inches
Max. Diameter 2.660 inches
Net Weight 1.7 pounds

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB1 | Audio-Frequency Power Amplifier and Modulator | 3000 | 1.0 | 2000 | 12 | 0 | 3000 | 325 | 1.75* | 0 | 3360* |
| AB1 | Radio-Frequency Linear Power Amplifier—SSB | 3000 | 1.0 | 2000 | 12 | 0 | 3000 | 325 | 0.875 | 0 | 1630 |

*Two tubes.



4CW10,000A

Electrically identical to the 4CX5000A except for its plate dissipation rating, the 4CW10,000A is intended for use where water cooling is preferred or where the extra plate dissipation is a necessity. It may be used at maximum ratings through 30 MHz and at slightly reduced ratings through the FM broadcast band.

PLATE DISSIPATION

FREQUENCY FOR MAXIMUM RATINGS 12,000 watts
COOLING Water and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 73 to 78 amperes
Capacitances (Grounded Filament):
Input 108 to 122 pf
Output 18 to 23 pf
Feed-Through 1.0 pf

Base Special, concentric
Socket Eimac SK-300A
Max. Seal Temp. 250 °C
Max. Height 11.44 inches
Max. Diameter 4.66 inches
Net Weight 7.5 pounds

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB1 | Audio-Frequency Power Amplifier and Modulator | 7500 | 4.00 | 12,000 | 250 | 75 | 7500 | 1500 | 6.66* | 0 | 31,900* |
| AB1 | Radio-Frequency Linear Power Amplifier | 7500 | 4.00 | 12,000 | 250 | 75 | 7500 | 1500 | 3.33 | 0 | 15,950 |
| C | Plate-Modulated r-f Power Amplifier | 5000 | 2.5 | 6650 | 250 | 75 | 5000 | 500 | 2.4 | 120 | 8500 |
| C | Radio-Frequency Power Amplifier and Oscillator | 7500 | 3.0 | 10,000 | 250 | 75 | 7500 | 500 | 2.8 | 150 | 16,000 |

*Two tubes.

TETRODES



4CW25,000A

The 4CW25,000A is a liquid-cooled, general purpose tetrode with the same basic characteristics as the air-cooled 4CX15,000A. It is recommended for regulator, and pulse modulator service.

PLATE DISSIPATION 25,000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|----------------------------|---------------------------------|
| Filament: Thoriated tungsten | Base Socket | Coaxial Eimac SK-300 or SK-300A |
| Voltage 6.3 volts | Max. Envelope Temp. 250 °C | |
| Current 160 amperes | Max. Height 12.6 inches | |
| Capacitances (Grounded Filament): | Max. Diameter 4.6 inches | |
| Input 155 pf | Net Weight 13.5 pounds | |
| Output 24 pf | | |
| Feed-Through Less than 2.0 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier | 10,000 | 5.0 | 25,000 | 450 | 200 | 9000 | 750 | 4.55 | 220 | 32,000 |
| AB ₁ | Audio-Frequency Amplifier or Modulator | 10,000 | 6.0 | 25,000 | 450 | 200 | 7500 | 1500 | 8.8 | — | 41,600* |
| — | Regulator, or Pulse Modulator | 20,000 | 55.0 | 25,000 | 450 | 200 | — | — | — | — | — |
| AB ₁ | Radio-Frequency Linear Amplifier | 10,000 | 6.0 | 25,000 | 450 | 200 | 7500 | 1500 | 4.4 | — | 20,800 |

*Two tubes



4CW50,000E *

The 4CW50,000E is a ceramic-metal, liquid-cooled power tetrode intended for use at the 50 to 100 kW output power level. It is recommended for use as a Class C RF amplifier or oscillator, a Class AB RF linear amplifier, or a Class AB push-pull AF amplifier or modulator. The tube is also useful as a plate and screen modulated Class C RF amplifier.

PLATE DISSIPATION 50,000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Liquid

CHARACTERISTICS

| | | |
|-----------------------------------|---------------------------|-----------------|
| Filament: Thoriated tungsten mesh | Base Socket | Special SK-2050 |
| Voltage 12 volts | Coolant Jacket | SK-2000 Series |
| Current 220 amperes | Max. Seal Temp. 250 °C | |
| Capacitances (Grounded Filament): | Max. Height 13.0 inches | |
| Input 340 pf | Max. Diameter 7.75 inches | |
| Output 53 pf | Net Weight 35 pounds | |
| Feed-Through 0.7 pf | | |

*Shown with SK-2050 water jacket.

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|------------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator | 17,500 | 12 | 50.00 | 1500 | 400 | 15,000 | 1500 | 12 | 250 | 140,000 |
| C | Plate-Modulated RF Power Amplifier | 15,000 | 12 | 33,300 | 1500 | 400 | 14,000 | 750 | 9.9 | 700 | 110,000 |
| AB ₁ | AF Amplifier or Modulator | 17,500 | 12 | 50.00 | 1500 | 400 | — | — | — | — | — |
| AB ₁ | RF Linear Amplifier | 17,500 | 12 | 50.00 | 1500 | 400 | — | — | — | — | — |



4CW100,000D

The 4CW100,000D is a ceramic-metal, liquid-cooled power tetrode intended for use at the 100 to 200 kW output power level. It is recommended for use as a Class C RF amplifier or oscillator, a Class AB RF linear amplifier or a Class AB push-pull AF amplifier or modulator. The 4CW100,000D is also useful as a plate and screen modulated Class C RF amplifier and in pulse modulator-regulator service.

PLATE DISSIPATION 100,000 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Liquid

CHARACTERISTICS

| | | |
|-----------------------------------|--------------------------|-------------------------|
| Filament: Thoriated tungsten | Base Socket | Special SK-1500 or 1510 |
| Voltage 10.0 volts | Max. Seal Temp. 250 °C | |
| Current 310 amps (max) | Max. Height 18.0 inches | |
| Capacitances (Grounded Filament): | Max. Diameter 8.0 inches | |
| Input 4.70 pf | Net Weight 60 pounds | |
| Output 60 pf (max) | | |
| Feed-Through 3.2 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|-------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (kW) |
| C | RF Power Amplifier or Oscillator | 20,000 | 15.0 | 100,000 | 1750 | 500 | 17,000 | 750 | 9.8 | 1020 | 137.5 |
| C | Plate-Modulated RF Power Amplifier Grid Driven | 17,500 | 15.0 | 66,500 | 1750 | 500 | 16,000 | 750 | 10.0 | 870 | 138.5 |
| AB | AF Amplifier or Modulator | 20,000 | 15.0 | 100,000 | 1750 | 500 | 18,000 | 1500 | 20* | — | 246.4* |
| AB | RF Linear Amplifier | 20,000 | 15.0 | 100,000 | 1750 | 500 | 18,000 | 1500 | 10.0 | — | 123.2 |
| — | Pulse Modulator | 40,000 | — | 100,000 | 1750 | 500 | 38,000 | 1500 | 112 | — | 3600 |

*Two tubes.



4CW100,000E *

The 4CW100,000E is a ceramic-metal, liquid-cooled power tetrode intended for use at the 100 to 250 kW CW, and 300 to 500 kW pulse output power level. Its low grid-to-plate capacitance and high transconductance makes the tube ideal for broadband grid drive operation. The 4CW100,000E is also useful in pulse modulator-regulator service.

PLATE DISSIPATION 100,000 watts
COOLING Liquid and Forced Air

CHARACTERISTICS

| | | |
|------------------------------|--------------------------|------------------------|
| Filament: Thoriated tungsten | Base Socket | Special SK-2000 Series |
| Voltage 16 volts | Jacket | SK-2100 |
| Current 230 amps (max) | Max. Seal Temp. 250 °C | |
| Capacitances: | Max. Height 14.5 inches | |
| Input 400 pf | Max. Diameter 9.5 inches | |
| Output 60 pf | Net Weight 38 pounds | |
| Feed-Through 0.9 pf | | |

*Shown with SK-2100 water jacket.

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| — | Radio-Frequency Pulse Power Amplifier or Oscillator | 30,000 | — | 100,000 | 1700 | 500 | 25,000* | 2500 | 68 | — | 180,000 |

*Typical operation in distributed amplifier service.

**RF power into load per tube.

TETRODES

EXTERNAL ANODE ■ WATER COOLED

4CW250,000A and 4CW250,000V *



The 4CW250,000A and 4CW250,000V are identical ceramic-metal, water-cooled power tetrodes except that the 4CW250,000V contains an integral ion vacuum pump which may be used to check the tube's vacuum condition during storage or to restore the vacuum of a tube which has been damaged by overheating in service. The tubes are intended for use in the 250 to 500 kW output power range.

PLATE DISSIPATION 250,000 watts
FREQUENCY FOR MAXIMUM RATINGS 50 MHz
COOLING Liquid

CHARACTERISTICS

| | | |
|-----------------------------------|--------------------------|-------------|
| Filament: Thoriated tungsten | Base: Special Socket | Special |
| Voltage: 12.0 volts | Socket: SK-800 Series | Socket |
| Current: 640 amperes | Max. Seal Temp.: 200 °C | 200 °C |
| Capacitances (Grounded Filament): | Max. Height: 29.5 inches | 29.5 inches |
| Input: 775 pf | Max. Diameter: 13 inches | 13 inches |
| Output: 130 pf | Net Weight: 100 pounds | 100 pounds |
| Feed-Through: 6.0 pf | | |

* Shown with SK-1720 water jacket.

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|------------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator | 20,000 | 40 | 250,000 | 3500 | 1500 | 19,000 | 800 | 32.5 | 3000 | ±60,000 |
| C | Plate-Modulated RF Power Amplifier | 17,500 | 30 | 167,000 | 3500 | 1500 | 14,000 | 800 | 29.0 | 2320 | 285,000 |
| AB | AF Amplifier or Modulator | 20,000 | 40 | 250,000 | 3500 | 1500 | 20,000 | 1800 | 46 | — | 660,000 |
| AB | RF Linear Amplifier | 20,000 | 40 | 250,000 | 3500 | 1500 | 20,000 | 1800 | 23 | — | 330,000 |

* Corresponds to 250,000 watts at 100 per cent sine wave modulation.

8249/4W300B



A general-purpose radial-beam tetrode with electrical characteristics similar to those of the Eimac 4X250B, this water-cooled version is intended for use where reserve anode dissipation is desired or where the use of water is a convenience. Maximum ratings apply to frequencies as high as 500 MHz.

PLATE DISSIPATION 300 watts
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------------------|-----------------------------|
| Cathode: Oxide-coated, unipotential | Base: 9-pin, special Socket | Eimac SK-600 Series |
| Heater: Voltage: 6.0 volts | Current: 2.3 to 2.9 amperes | Max. Seal Temp.: 175 °C |
| Capacitances (Grounded Cathode): | Input: 14.2 to 17.2 pf | Output: 4.0 to 5.0 pf |
| Feed-Through: 0.06 pf | Max. Height: 3.407 inches | Max. Diameter: 2.126 inches |
| | Net Weight: 6 ounces | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|---------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watt) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 2000 | 0.250 | 300 | 12 | — | 2000 | 350 | 0.500* | 0 | 600 |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 2000 | 0.250 | 300 | 12 | — | 2000 | 350 | 0.250 | 0 | 300 |
| C | Radio-Frequency Power Amplifier and Oscillator | 2000 | 0.250 | 300 | 12 | 2 | 2000 | 250 | 0.250 | 2.9 | 390 |
| C | Plate-Modulated R-F Power Amplifier | 1500 | 0.200 | 200 | 12 | 2 | 1500 | 250 | 0.200 | 1.7 | 235 |

*Two tubes.

8173/4W20,000A



The 8173/4W20,000A is a high-power, water-cooled, power tetrode which will operate efficiently as a power amplifier at frequencies up to 250 MHz. A single 8173/4W20,000A operating as a television visual RF amplifier will deliver a synchronizing power output of 26 kW at 216 MHz with 5 MHz bandwidth. The coaxial construction of the tube is ideal for cavity circuits.

PLATE DISSIPATION 20,000 watts
FREQUENCY FOR MAXIMUM RATINGS 220 MHz
COOLING Water and Forced Air

CHARACTERISTICS

| | | | |
|--|------------------------|-------------------------|-------------------------------|
| Cathode: Unipotential thoriated tungsten heated by electron bombardment. | DC Voltage: 1500 volts | DC Current: 1.9 amperes | Capacitances (Grounded Grid): |
| Filament: Thoriated tungsten | Voltage: 10 volts | Current: 25 amperes | Input: 87 pf (max) |
| | | | Output: 25.5 pf (max) |
| | | | Feed-Through: 0.6 pf (max) |
| | | | Base: Special, concentric |
| | | | Max. Seal Temp.: 150 °C |
| | | | Max. Height: 15 inches |
| | | | Max. Diameter: 5.03 inches |
| | | | Net Weight: 7.6 pounds |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|------------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier | 8000 | 15 | 20,000 | 200 | 60 | 7000 | 1200 | 3.4 | 830 | 13,000 |
| B | Linear Amplifier Television Visual | 8000 | 15 | 20,000 | 200 | 60 | 7000 | 1200 | 6.0 | 500 | 26,000 |

* Peak Synchronizing Level

EXTERNAL ANODE ■ VAPOR COOLED

4CV1500B



The 4CV1500B is a ceramic-metal, vapor and forced air cooled radial beam tetrode with a rated maximum plate dissipation of 1500 watts. It is a low-voltage, high current tube specifically designed for exceptionally low intermodulation distortion and low grid interception. The low distortion characteristics make the 4CV1500B especially suitable for RF and AF linear amplifier service.

PLATE DISSIPATION 1500 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Vapor and Forced Air

CHARACTERISTICS

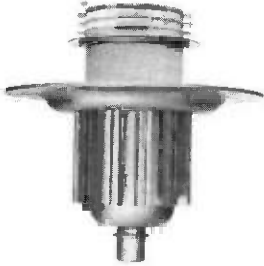
| | | |
|-------------------------------------|--------------------------|----------------------------|
| Cathode: Oxide-coated, unipotential | Base: Special Socket | SK-800 Series |
| Heater: Voltage: 6.0 volts | Current: 11.0 amps (max) | Max. Seal Temp.: 250 °C |
| Capacitances (Grounded Cathode): | Input: 88 pf | Output: 12.8 pf |
| Feed-Through: 0.03 pf | Max. Height: 5.35 inches | Max. Diameter: 3.35 inches |
| | Net Weight: 27 ounces | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB | RF Linear Amplifier | 3000 | 0.900 | 1500 | 12 | 1.0 | 2900 | 225 | 0.710 | 1.5 | 1100 |
| AB ₁ | AF Amplifier or Modulator | 3000 | 0.900 | 1500 | 12 | 1.0 | 2900 | 325 | 1.69 | — | 2774 |

TETRODES

EXTERNAL ANODE ■ VAPOR COOLED

4CV8000A



This vapor-cooled version of Eimac's 4CX3000A offers a conservative plate dissipation rating of 8000 watts. It is recommended for Class-AB audio and radio-frequency applications as well as Class-C rf amplifier service.

A pair of these tubes will deliver over 14 kilowatts of audio frequency output with low distortion in Class-AB1 service.

PLATE DISSIPATION 8000 watts
FREQUENCY FOR MAXIMUM RATINGS 150 MHz
COOLING Vapor and Forced Air

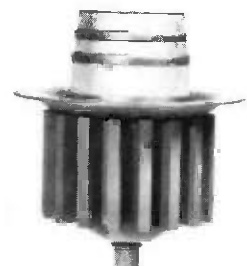
CHARACTERISTICS

| | | |
|-----------------------------------|-----------------|-------------------------------|
| Filament: Thoriated tungsten | Base | Special, ring and breechblock |
| Voltage 10.0 volts | Socket | Eimac SK-1490 |
| Current 43.5 to 48.5 amperes | Max. Seal Temp. | 250 °C |
| Capacitances (Grounded Filament): | Max. Height | 7.983 inches |
| Input 120 to 140 pf | Max. Diameter | 7.016 inches |
| Output 10.5 to 14.5 pf | Net Weight | 7.0 pounds |
| Feed-Through 1.4 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 6000 | 2.0 | 8000 | 175 | 50 | 6000 | 850 | 4.0* | 0 | 14,500* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 6000 | 2.0 | 8000 | 175 | 50 | 6000 | 850 | 2.0 | 0 | 7,250 |
| C | Radio-Frequency Power Amplifier and Oscillator | 7000 | 2.0 | 8000 | 175 | 50 | 7000 | 500 | 1.9 | 47 | 11,000 |
| C | Plate-Modulated rf Power Amplifier | 5000 | 1.4 | 5500 | 175 | 50 | 5000 | 400 | 1.35 | 42 | 5,500 |

*Two tubes.

4CV20,000A



A vapor-cooled version of the popular 4CX5000A, the 4CV20,000A has a plate dissipation rating of 20 kilowatts. Two of these tubes in a push-pull, Class-AB₁ amplifier will produce 35 kilowatts output. A full complement of vapor cooling accessories is available for this and all other Eimac vapor-cooled tube types.

PLATE DISSIPATION 20,000 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Vapor and Forced Air

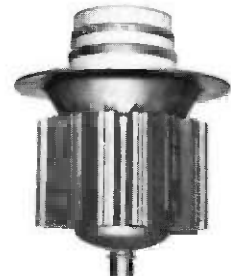
CHARACTERISTICS

| | | |
|-----------------------------------|-----------------|---------------------|
| Filament: Thoriated tungsten | Base | Special, concentric |
| Voltage 7.5 volts | Socket | Eimac SK-310 |
| Current 73 to 78 amperes | Max. Seal Temp. | 250 °C |
| Capacitances (Grounded Filament): | Max. Height | 9.125 inches |
| Input 108 to 122 pf | Max. Diameter | 7.75 inches |
| Output 18.0 to 23.0 pf | Net Weight | 21 pounds |
| Feed-Through 1.0 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 7500 | 4.0 | 20,000 | 250 | — | 7500 | 1500 | 8.0* | 0 | 35,000* |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 7500 | 4.0 | 20,000 | 250 | — | 7500 | 1500 | 4.0 | 0 | 17,500 |
| C | Radio-Frequency Power Amplifier and Oscillator | 7500 | 3.0 | 20,000 | 250 | 75 | 7500 | 500 | 3.0 | 155 | 17,000 |
| C | Plate-Modulated rf Power Amplifier | 5000 | 2.5 | 13,500 | 250 | 75 | 5000 | 500 | 2.2 | 77 | 7,750 |

*Two tubes.

4CV35,000A



Recommended for use as a modulator, oscillator or amplifier, the 4CV35,000A is usable to 110 megacycles. With a plate voltage of 10 kV in Class C service, the tube is capable of over 35 kilowatts output power. The plate dissipation of 35 kilowatts allows use of the 4CV35,000A in low efficiency Class-AB₁ circuits.

PLATE DISSIPATION 35,000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Vapor and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|-----------------|---------------------|
| Filament: Thoriated tungsten | Base | Special, concentric |
| Voltage 6.3 volts | Socket | Eimac SK-310 |
| Current 152 to 168 amperes | Max. Seal Temp. | 250 °C |
| Capacitances (Grounded Filament): | Max. Height | 9.125 inches |
| Input 158 to 172 pf | Max. Diameter | 7.88 inches |
| Output 22.0 to 27.0 pf | Net Weight | 24 pounds |
| Feed-Through 2.0 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | Radio-Frequency Power Amplifier and Oscillator | 10,000 | 5.0 | 35,000 | 450 | 200 | 10,000 | 750 | 4.8 | 225 | 38,000 |
| C | Plate-Modulated rf Power Amplifier | 7500 | 4.0 | 23,000 | 450 | 200 | 7500 | 750 | 3.65 | 150 | 23,500 |
| AB ₁ | Audio-Frequency Power Amplifier or Modulator | 10,000 | 6.0 | 35,000 | 450 | 200 | 10,000 | 1500 | 10.7* | 0 | 66,000* |

*Two tubes.

4CV50,000E *



The 4CV50,000E is a ceramic-metal, vapor-cooled tetrode intended for use at the 50 to 100 kw output power level. It is recommended for use as a Class C RF amplifier or oscillator, a Class AB₁ RF linear amplifier or a Class AB push-pull AF amplifier or modulator. The 4CV50,000E can also be used as a plate and screen modulated Class C RF amplifier.

PLATE DISSIPATION 50,000 watts
COOLING Vapor and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|-------------------------|----------------|
| Filament: Thoriated tungsten mesh | Base | Special |
| Voltage 12 volts | Socket | SK-2000 Series |
| Current 220 amperes | Boiler | BR-700 |
| Capacitances: | Max. Seal Temp. | 250 °C |
| Input 340 pf | Max. Anode Flange Temp. | 200 °C |
| Output 53 pf | Max. Height | 13.0 inches |
| Feed-Through 0.7 pf | Max. Diameter | 7.75 inches |
| | Net Weight | 35 pounds |

* Shown with BR-700 boiler.

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|------------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator | 17,500 | 12 | 50,000 | 1500 | 400 | 15,000 | 1500 | 12 | 250 | 140,000 |
| C | Plate-Modulated RF Power Amplifier | 15,000 | 12 | 33,300 | 1500 | 400 | 14,000 | 750 | 9.9 | 700 | 110,000 |
| AB ₁ | AF Amplifier or Modulator | 17,500 | 12 | 50,000 | 1500 | 400 | — | — | — | — | — |
| AB ₁ | RF Linear Amplifier | 17,500 | 12 | 50,000 | 1500 | 400 | — | — | — | — | — |

TETRODES

EXTERNAL ANODE ■ VAPOR COOLED



4CV75,000A *

The 4CV75,000A is a vapor phase cooled tetrode with basic characteristics the same as the 4CV100,000C. It is intended for use with the compact, upright, boiler, Eimac BR-320. This combination results in low capacitance of anode and boiler to ground.

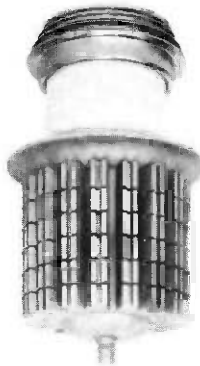
PLATE DISSIPATION 75,000 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Vapor Phase and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|--------------------------|---------------------|
| Filament: Thoriated tungsten | Base | Coaxial |
| Voltage 10.0 volts | Socket | Eimac SK-1510 |
| Current 300 amperes | | or SK-1510 |
| Capacitances (Grounded Filament): | Max. Envelope | Temp. 250 °C |
| Input 440 pf | | |
| Output 55 pf | Max. Height (In BR-320 | Boiler) 19.3 inches |
| Feed-Through 2.3 pf | Max. Diameter (Of BR-320 | Boiler) 9.4 inches |
| | Net Weight | 60 pounds |

* Shown with BR-320 boiler.

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|----------------------|---------------------|----------------------|-------------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C (CW) | Power Amplifier Radio-Frequency | 15,000 | 15.0 | 75,000 | 1750 | 500 | 15,000 | 1500 | 11.8 | 120 | 140,000 |
| C | Radio-Frequency Power Amplifier (Plate-Modulated) | 12,500 | 15.0 | 50,000 | 1750 | 500 (Carrier Condition) | 11,000 | 750 | 9.1 | 1000 | 82,000 |
| AB ₁ | Audio-Frequency Amplifier or Modulator | 15,000 | 15.0 | 75,000 | 1750 | 500 (Two Tubes) | 11,000 | 1500 | 18.8 | — | 129,000 |



8351/4CV100,000C

The largest of Eimac's power grid tubes, the 4CV100,000C is finding wide acceptance in application where a very high power rugged tetrode is desired. Vapor cooling allows a conservative plate dissipation rating of 100 kilowatts.

PLATE DISSIPATION 100,000 watts
FREQUENCY FOR MAXIMUM RATINGS: 30 MHz
COOLING Vapor and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|---------------|--------------------------|
| Filament: Thoriated tungsten | Base | Special concentric rings |
| Voltage 10.0 volts | Socket | Eimac SK-1510 |
| Current 300 amperes | | Max. Seal Temp. 250 °C |
| Capacitances (Grounded Filament): | Max. Height | 17.0 inches |
| Input 430 uufd | Max. Diameter | 10.0 inches |
| Output 45 uufd | Net Weight | 95 pounds |
| Feed-Through 2.3 uufd | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|--|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Frequency Power Amplifier and Modulator | 20,000 | 15.0 | 100,000 | 1750 | 500 | 18,000 | 1500 | 20.0* | 0 | 246,400 |
| AB ₁ | Radio-Frequency Linear Power Amplifier—SSB | 20,000 | 15.0 | 100,000 | 1750 | 500 | 18,000 | 1500 | 10.0 | 0 | 123,200 |
| C | Radio-Frequency Power Amplifier and Oscillator | 20,000 | 15.0 | 100,000 | 1750 | 500 | 17,500 | 1500 | 11.8 | 125 | 168,000 |
| C | Plate-Modulated rf Power Amplifier | 17,500 | 15.0 | 66,500 | 1750 | 500 | 16,000 | 750 | 12.0 | 1260 | 138,500 |

* Two Tubes



4CV100,000E *

The 4CV100,000E is a ceramic-metal, vapor-cooled power tetrode intended for use at the 100 to 250 kW CW, and 300 to 500 kW pulse output power level. Its low grid-to-plate capacitance and high transconductance make the tube ideal for broadband grid drive operation. The 4CV100,000E is also useful in pulse modulator and regulator service.

PLATE DISSIPATION 100,000 watts
COOLING Vapor and Forced Air

CHARACTERISTICS

| | | |
|----------------------------------|-----------------|----------------|
| Filament: Thoriated tungsten | Base | Special |
| Voltage 16 volts | Socket | SK-2000 Series |
| Current 230 amperes | Boiler | BR-800 |
| Capacitances (Grounded Cathode): | Max. Seal Temp. | 250 °C |
| Input 400 pf | Max. Height | 14.5 inches |
| Output 60 pf | Max. Diameter | 9.5 inches |
| Feed-Through 0.9 pf | Net Weight | 38 pounds |

* Shown with BR-800 boiler.

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| — | Radio-Frequency Pulse Power Amplifier or Oscillator | 30,000 | — | 100,000 | 1700 | 500 | 25,000* | 2500 | 68 | — | 180,000 |

* Typical operation in distributed amplifier service. ** RF power into load per tube.



4CV250,000A and 4CV250,000V

The 4CV250,000A and V are ceramic-metal, vapor-cooled power tetrodes. The tubes are recommended for use as a Class C RF amplifier or oscillator, a Class AB RF linear amplifier or Class AB push-pull AF amplifier or modulator.

PLATE DISSIPATION 250,000 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Vapor and Water

CHARACTERISTICS

| | | |
|----------------------------------|-------------------|---------------|
| Filament: Thoriated tungsten | Base | Special |
| Voltage 12 volts | Socket | BR-605 Boiler |
| Current 660 amperes | Max. Seal Temp. | 200 °C |
| Capacitances (Grounded Cathode): | Max. Anode Flange | Temp. 130 °C |
| Input 800 pf(max) | Max. Height | 28.02 inches |
| Output 136 pf(max) | Max. Dia. | 15.062 inches |
| Feed-Through 8.0 pf | Net Weight | 180 pounds |

4CV250,000V is supplied with a Vaclon pump.

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | |
|--------------------|------------------------------------|-----------------------|----------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator | 20,000 | 40 | 250,000 | 3500 | 1500 | 19,000 | 800 | 32.5 | 3000 | 460,000 |
| C | Plate Modulated RF Power Amplifier | 17,500 | 30 | 167,000 | 3500 | 1500 | 14,000 | 800 | 29.0 | 2320 | 285,000 |
| AB | AF Amplifier or Modulator | 20,000 | 40 | 250,000 | 3500 | 1500 | 20,000 | 1800 | 46** | — | 660,000 |
| AB | RF Linear Amplifier | 20,000 | 40 | 250,000 | 3500 | 1500 | 20,000 | 1800 | 23 | — | 330,000 |
| — | Pulse Modulator or Regulator | 40,000 | — | 250,000 | 3500 | 1500 | — | 2500 | — | — | — |

** Two tubes.

* Corresponds to 250,000 watts at 100 per cent sine wave modulation.

PENTODES

4E27A/5-125B

A general-purpose compact pentode cooled by radiation and convection and with maximum ratings applicable to 75 MHz. No forced-air cooling is required in most installations.

PLATE DISSIPATION 125 watts
FREQUENCY FOR MAXIMUM RATINGS 75 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|-----------------|------------------------------------|
| Filament: Thoriated tungsten | Base Socket | 7-pin, metal shell Johnson 122-237 |
| Voltage 5.0 volts | Max. Seal Temp. | 225 °C |
| Current 7.0 to 8.0 amperes | Max. Height | 6.188 inches |
| Capacitances (Grounded Filament): | Max. Diameter | 2.750 inches |
| Input 8.7 to 12.3 pf | Net Weight | 6 ounces |
| Output 3.5 to 5.9 pf | | |
| Feed-Through 0.1 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | | Typical Operation | | | | |
|--------------------|---|-----------------------|---------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amp) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amp) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Audio-Freq. Power Amp. and Modulator | 4000 | 0.200 | 125 | 20 | 20 | — | 2500 | 500 | 0.220* | 0 | 300* |
| AB ₂ | Audio-Freq. Power Amp. and Modulator | 4000 | 0.200 | 125 | 20 | 20 | 5 | 2500 | 500 | 0.250* | 0.2* | 400* |
| C | Radio-Freq. Power Amp. and Oscillator Zero Suppressor Volts | 4000 | 0.200 | 125 | 20 | 20 | 5 | 3000 | 500 | 0.167 | 1.9 | 375 |
| C | Plate-Mod. Radio-Freq. Amp. Zero Suppressor Volts | 2500 | 0.160 | 85 | 20 | 20 | 5 | 2500 | 500 | 0.152 | 2 | 295 |
| C | Suppressor-Mod. Radio-Freq. Amp. | 4000 | 0.200 | 125 | 20 | 20 | 5 | 3000 | 400 | 0.060 | 1.2 | 75 |

*Two tubes.



175A

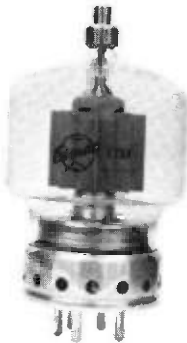
The 175A is a beam pentode which incorporates a unique vane-type suppressor grid. The suppressor grid terminates in the tube shell and is designed to operate at zero voltage. The base shell must be grounded to the chassis by means of suitable spring clips.

PLATE DISSIPATION 400 watts
COOLING Forced Air

CHARACTERISTICS

| | | |
|------------------------------|---------------|-----------------------------------|
| Filament: Thoriated tungsten | Base Socket | 5-pin metal shell Johnson 122-275 |
| Voltage 5.0 volts | Max. Height | 6.63 inches |
| Current 14.5 amperes | Max. Diameter | 3.56 inches |
| Capacitances: | | |
| Input 15.1 pf | | |
| Output 9.8 pf | | |
| Feed-Through 0.06 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | | Typical Operation | | | | |
|--------------------|----------------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Amplifier or Oscillator | 4000 | 0.350 | 400 | — | 25 | — | 3000 | 600 | 0.350 | 1.3 | 715 |
| AB ₁ | Linear RF Amplifier | 4000 | 0.350 | 400 | — | 25 | — | 3000 | 750 | 0.350 | — | 680 |



177WA

The 177WA beam pentode is a ruggedized version of the 177A with which it is directly interchangeable. The 177WA may be mounted in any position and will withstand high levels of shock and vibration. The tube incorporates a unique vane-type suppressor grid which permits high power output at relatively low plate voltages and provides excellent characteristics for use as a linear RF or audio amplifier.

PLATE DISSIPATION 75 watts
COOLING Forced Air

CHARACTERISTICS

| | | |
|------------------------------|---------------|-----------------------|
| Filament: Thoriated tungsten | Base Socket | 7-pin Johnson 122-101 |
| Voltage 6.0 volts | Max. Height | 4.38 inches |
| Current 3.2 amperes | Max. Diameter | 2.38 inches |
| Capacitances: | | |
| Input 7.5 pf | | |
| Output 4.2 pf | | |
| Feed-Through 0.06 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | | Typical Operation | | | | |
|--------------------|----------------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Amplifier or Oscillator | 2000 | 0.150 | 75 | — | — | — | 1500 | 400 | 0.150 | 0.75 | 160 |
| AB | Linear RF Amplifier | 2000 | 0.175 | 75 | — | — | — | 1500 | 600 | 0.175 | — | 140 |



5-500A

The 5-500A is a compact, ruggedly constructed radial-beam power pentode with a maximum plate dissipation rating of 500 watts. It is intended for use as an amplifier, oscillator or modulator. The high plate-current rating, low grid-plate capacitance and low driving power requirements permit maximum power capability to be combined with circuit simplicity and economic driver requirements.

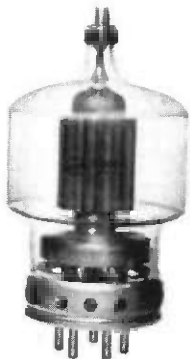
PLATE DISSIPATION 500 watts
COOLING Radiation and Forced Air

CHARACTERISTICS

| | | |
|----------------------------------|-----------------|--------------|
| Filament: Thoriated tungsten | Base Socket | 5-pin SK 410 |
| Voltage 10.0 volts | Max. Seal Temp. | 200 °C |
| Current 10.2 amperes | Max. Height | 7.00 inches |
| Capacitances (Grounded Cathode): | Max. Diameter | 3.56 inches |
| Input 19.0 pf (max) | Net Weight | 11 ounces |
| Output 12.0 pf (max) | | |
| Feed-Through 0.10 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | | Typical Operation | | | | |
|--------------------|----------------------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator | 4000 | 0.450 | 500 | — | 35 | 12 | 3000 | 500 | 0.432 | 12 | 805 |
| AB ₁ | RF Linear Amplifier | 4000 | 0.450 | 500 | — | 35 | 12 | 3000 | 750 | 0.320 | — | 612 |
| C | Plate Modulated RF Amplifier | 4000 | 0.340 | 330 | — | 35 | 12 | 3100 | 470 | 0.260 | 6.0 | 580 |
| AB | AF Power Amplifier or Modulator | 4000 | 0.450 | 500 | — | 35 | 12 | 3000 | 750 | 0.640* | — | 1224* |

*Two tubes.



PENTODES

8295/172



This tube is an air cooled, glass and metal beam pentode capable of high power gain and excellent efficiency at relatively low plate voltages. The tube is especially suited for low-distortion Class AB₁ linear RF amplifier service.

PLATE DISSIPATION 1000 watts
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------|--------------|
| Cathode: Oxide-coated, unipotential | Base | 7-pin |
| Heater: | Socket | Eimac 184 |
| Voltage 6.0 volts | Max. Seal Temp. | 175 °C |
| Current 8.2 amperes | Max. Height | 5.125 inches |
| Capacitances: | Max. Diameter | 4.032 inches |
| Input 42 pf | Net Weight | 3.0 pounds |
| Output 21 pf | | |
| Feed-Through 0.09 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | | Typical Operation | | | | |
|--------------------|----------------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Amplifier or Oscillator | 3000 | 1.0 | 1000 | — | 30 | 5 | 2500 | 500 | 0.840 | 2.1 | 1440 |
| AB ₁ | Linear RF Amplifier | 3000 | 0.800 | 1000 | — | 30 | 5 | 2500 | 500 | 0.800 | — | 1260 |

8295A



The 8295A is an air-cooled, ceramic-metal beam pentode capable of high power gain and excellent efficiency at relatively low plate voltages. The tube is especially suited for low-distortion Class AB₁ linear RF amplifier service.

PLATE DISSIPATION 1000 watts
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------|--------------|
| Cathode: Oxide-coated, unipotential | Base | 7-pin |
| Heater: | Socket | Eimac 184 |
| Voltage 6.0 volts | Max. Seal Temp. | 250 °C |
| Current 8.2 amperes | Max. Height | 5.125 inches |
| Capacitances: | Max. Diameter | 4.032 inches |
| Input 42 pf | Net Weight | 3.0 pounds |
| Output 21 pf | | |
| Feed-Through 0.09 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | | Typical Operation | | | | |
|--------------------|----------------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Amplifier or Oscillator | 3000 | 1.0 | 1000 | — | 30 | 5 | 2500 | 500 | 0.840 | 2.1 | 1440 |
| AB ₁ | Linear RF Amplifier | 3000 | 0.800 | 1000 | — | 30 | 5 | 2500 | 500 | 0.800 | — | 1260 |

8432



The 8432 is a ceramic-metal beam pentode featuring compact construction. The tube is especially suited for low distortion Class AB₁ linear RF amplifier use where a single tube will deliver over 1500 watts of useful power output. The tube also provides outstanding performance in Class AB₂ and Class B service.

PLATE DISSIPATION 1000 watts
COOLING Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|-----------------|-------------|
| Cathode: Oxide coated, unipotential | Base | 7-pin |
| Heater: | Socket | Eimac 209A |
| Voltage 6.0 volts | Max. Seal Temp. | 250 °C |
| Current 8.2 amperes | Max. Height | 4.75 inches |
| Capacitances: | Max. Diameter | 3.53 inches |
| Input 42 pf | Net Weight | 2.5 pounds |
| Output 20 pf | | |
| Feed-Through 0.09 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | | Typical Operation | | | | |
|--------------------|----------------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Linear RF Amplifier | 3000 | 0.800 | 1000 | — | 30 | 5 | 2500 | 500 | 0.780 | — | 1280 |
| C | RF Amplifier or Oscillator | 3000 | 1.0 | 1000 | — | 30 | 5 | — | — | — | — | — |

5CX1500A



The 5CX1500A is a ceramic-metal power pentode designed to be used as a Class AB₁ linear amplifier in audio or radio-frequency applications. Its low intermodulation distortion characteristics make it especially suitable for single-sideband service.

PLATE DISSIPATION 1500 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|-----------------------|------------|
| Filament: Thoriated tungsten mesh | Base | Special |
| Voltage 5.0 volts | Socket | SK-840 |
| Current 43 amperes (max) | Max. Seal Temp. | 250 °C |
| Capacitances (Grounded Filament): | Max. Anode Core Temp. | 250 °C |
| Input 78 pf (max) | Max. Height | 5.0 inches |
| Output 18.5 pf (max) | Max. Diameter | 3.4 inches |
| Feed-Through 0.25 pf | Net Weight | 30 ounces |

| Class of Operation | Type of Service | Maximum Ratings | | | | | | Typical Operation | | | | |
|--------------------|------------------------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator | 5000 | 1.0 | 1500 | 25 | 75 | 25 | 4000 | 500 | 0.800 | 6.5 | 2350 |
| C | Plate-Modulated RF Power Amplifier | 3500 | 0.8 | 1000 | 25 | 75 | 25 | 3200 | 500 | 0.800 | 10 | 1958 |
| AB | AF Amplifier or Modulator | 4000 | 1.0 | 1500 | 25 | 75 | 25 | 3800 | 500 | 1.33* | — | 3220* |
| AB | RF Linear Amplifier | 4000 | 1.0 | 1500 | 25 | 75 | 25 | 3000 | 500 | 0.690 | — | 1785 |

*Two tubes.

PENTODES



5CX3000A

The 5CX3000A is a ceramic-metal power pentode designed for Class AB linear amplifier AF and RF applications. Its low inter-modulation distortion characteristics make it especially suitable for single sideband service.

PLATE DISSIPATION
FREQUENCY FOR MAXIMUM RATINGS
COOLING

3000 watts
150 MHz
Forced Air

CHARACTERISTICS

| | | |
|-----------------------------------|--------------------------|---------|
| Filament: Thoriated tungsten | Base | Special |
| Voltage 9.0 volts | Socket SK-1420 Series | 291A |
| Current 43.5 amperes (max) | Max. Seal Temp. 250 °C | |
| Capacitances (Grounded Filament): | Max. Height 6.8 inches | |
| Input 145 pf | Max. Diameter 4.6 inches | |
| Output 24 pf | Net Weight 5.5 pounds | |
| Feed-Through 0.60 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | | |
|--------------------|----------------------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| C | RF Power Amplifier or Oscillator | 7000 | 2.0 | 4000 | 100 | 175 | 50 | 6800 | 500 | 1.64 | 52 | 8500 |
| AB | AF Amplifier or Modulator | 7000 | 2.0 | 4000 | 100 | 175 | 50 | 6000 | 850 | 2.9* | — | 11,000* |
| C | RF Linear Amplifier | 7000 | 2.0 | 4000 | 100 | 175 | 50 | 6000 | 850 | 1.4 | — | 5500 |

*Two tubes.



8576/264

The 8576/264 is a ceramic-metal beam pentode with exceptionally low input capacitance for its power-handling capability. The tube is especially suited for use in broadband linear amplifiers, but will also provide outstanding performance in other Class AB₁ amplifier applications.

PLATE DISSIPATION
COOLING

3000 watts
Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|--------------------------|---------|
| Cathode: Oxide-coated, unipotential | Base | Special |
| Heater: 6.0 volts | Socket Eimac 265A | 291A |
| Current 17 amperes | Max. Seal Temp. 250 °C | |
| Capacitances (Grounded Cathode): | Max. Height 5.7 inches | |
| Input 57 pf | Max. Diameter 4.4 inches | |
| Output 33 pf | Net Weight 4.8 pounds | |
| Feed-Through 0.16 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | | |
|--------------------|---------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Linear RF Amplifier | 5000 | 2.0 | 3000 | — | 50 | — | 5000 | 750 | 1.06 | — | 5300 |



290

The 290 is a ceramic-metal beam pentode with exceptionally low input capacitance for its power-handling capability. The tube is especially suited for use in broadband linear amplifiers, but will also provide outstanding performance in other Class AB₁ amplifier applications.

PLATE DISSIPATION
COOLING

5000 watts
Forced Air

CHARACTERISTICS

| | | |
|-------------------------------------|--------------------------|---------|
| Cathode: Oxide-coated, unipotential | Base | Special |
| Heater: 6.0 volts | Socket 291A | 291A |
| Current 17 amperes | Max. Seal Temp. 250 °C | |
| Capacitances (Grounded Cathode): | Max. Height 7.2 inches | |
| Input 57 pf | Max. Diameter 5.5 inches | |
| Output 33 pf | Net Weight 4.8 pounds | |
| Feed-Through 0.16 pf | | |

| Class of Operation | Type of Service | Maximum Ratings | | | | | Typical Operation | | | | | |
|--------------------|---------------------|-----------------------|----------------------|---------------------|---------------------|----------------------|--------------------|-----------------------|------------------------|----------------------|---------------------|----------------------|
| | | Plate Voltage (volts) | Plate Current (amps) | Plate Diss. (watts) | Supp. Diss. (watts) | Screen Diss. (watts) | Grid Diss. (watts) | Plate Voltage (volts) | Screen Voltage (volts) | Plate Current (amps) | Drive Power (watts) | Output Power (watts) |
| AB ₁ | Linear RF Amplifier | 6000 | 2.0 | 5000 | — | 50 | — | 5000 | 750 | 1.06 | — | 5300 |

POWER GRID TUBE HANDBOOK

A comprehensive book providing information on design, construction and operation of power grid tubes has been published by EIMAC, Division of Varian.

The 158-page book, "THE CARE AND FEEDING OF POWER GRID TUBES," discusses the types and uses of high power vacuum tubes from diodes to pentodes and includes special tubes such as zero-bias triodes and super power tetrodes.

In addition, cooling, emission, secondary emission, high frequency operation, limiting factors in tube design and operation

are discussed in the book. Electron tube materials used in cathodes, grids, filaments, anodes and envelopes as well as construction methods are also explained.

Primarily written as a guide to the tube specifier and circuit designer, it is also useful to amateur radio enthusiasts and teachers.

The \$3.95 book is being distributed by Stacey's Scientific Book Center, 2575 Hanover Avenue, Palo Alto, California, and is available through your nearest Eimac Distributor.

PULSE MODULATORS



6C21

A high-vacuum triode designed for pulse-modulator service and incorporating a pyrovac plate and a non-emitting grid. It is recommended for use where long-pulse requirements rule out the use of tubes employing oxide-coated cathodes.

MAXIMUM PLATE VOLTAGE 30 kilovolts
MAXIMUM PULSE PLATE CURRENT 15 amperes
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
 Voltage 8.2 volts
 Current 15.9 to 17.7 amperes

Capacitances:
 Grid-Plate 3.0 to 5.6 pf
 Grid-Filament 7.0 to 12.0 pf
 Plate-Filament 2.0 pf

Base 50-watt jumbo 4-pin
 Socket E. F. Johnson Co. No. 123-211
 or National Co. XM-50

Maximum Seal Temp. 225 °C
 Maximum Length 12.625 inches
 Maximum Diameter 5.125 inches
 Net Weight 1.3 pounds

MAXIMUM RATINGS

DC PLATE VOLTAGE 30 kilovolts
 PEAK PLATE CURRENT 15 amperes
 PLATE DISSIPATION 300 watts
 GRID DISSIPATION 50 watts

TYPICAL OPERATION

DC Plate Voltage 28 kilovolts
 Pulse Plate Voltage 25 kilovolts
 Pulse Plate Current 15 amperes
 Peak Drive Power 7.5 kilowatts
 Peak Output Power 375 kilowatts
 Duty 0.2 percent



8252 / 4PR60B

The Eimac 4PR60B is a high-vacuum, radial-beam tetrode intended for pulse modulator service in circuits employing resistive loads. The 4PR60B supersedes the 4PR60A and unilaterally replaces the 715C and 5D21. It is recommended for use in equipment of new design.

MAXIMUM PLATE VOLTAGE 20 kilovolts
MAXIMUM PULSE PLATE CURRENT 18 amperes
COOLING Radiation and Convection

CHARACTERISTICS

Cathode: Oxide-coated, unipotential

Heater:
 Voltage 26.0 volts
 Current 1.95 to 2.35 amperes

Capacitances (Grounded Cathode):
 Input 35.0 to 50.0 pf
 Output 6.0 to 11.0 pf
 Feed-through 2.0 pf

Socket E. F. Johnson Co. No. 122-234

Maximum Seal Temp. 200 °C
 Maximum Envelope Temp. 200 °C
 Maximum Length 6.0 inches
 Maximum Diameter 3.063 inches
 Net Weight 12 ounces

MAXIMUM RATINGS

DC PLATE VOLTAGE 20 kilovolts
 DC SCREEN VOLTAGE 1.5 kilovolts
 PEAK PLATE CURRENT 18 amperes
 PLATE DISSIPATION 60 watts
 SCREEN DISSIPATION 8 watts
 GRID DISSIPATION 1 watt

TYPICAL OPERATION

DC Plate Voltage 20 kilovolts
 DC Screen Voltage 1.25 kilovolts
 Pulse Plate Voltage 18.75 kilovolts
 Pulse Plate Current 18 amperes
 Peak Drive Power 552 watts
 Peak Output Power 337 kilowatts
 Duty 0.1 percent
 Pulse Duration 2 microseconds



8252W / 4PR60C

The Eimac 4PR60C is a ruggedized version of the 4PR60B. It is a high-vacuum, radial-beam tetrode intended for pulse modulator service in circuits employing resistive loads. The 4PR60C supersedes the 4PR60A and unilaterally replaces the 715C and 5021. It is recommended for use in equipment of new design.

MAXIMUM PLATE VOLTAGE 20 kilovolts
MAXIMUM PULSE PLATE CURRENT 18 amperes
COOLING Radiation and Convection

CHARACTERISTICS

Cathode: Oxide-coated, unipotential

Heater:
 Voltage 26.0 volts
 Current 1.95 to 2.35 amperes

Capacitances (Grounded Cathode):
 Input 35.0 to 50.0 pf
 Output 6.0 to 11.0 pf
 Feed-through 2.0 pf

Socket E. F. Johnson Co. No. 122-234

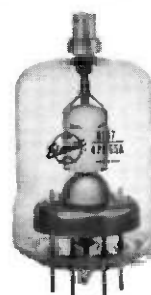
Maximum Seal Temp. 200 °C
 Maximum Envelope Temp. 200 °C
 Maximum Length 6.0 inches
 Maximum Diameter 3.063 inches
 Net Weight 12 ounces

MAXIMUM RATINGS

DC PLATE VOLTAGE 20 kilovolts
 DC SCREEN VOLTAGE 1.5 kilovolts
 PEAK PLATE CURRENT 18 amperes
 PLATE DISSIPATION 60 watts
 SCREEN DISSIPATION 8 watts
 GRID DISSIPATION 1 watt

TYPICAL OPERATION

DC Plate Voltage 20 kilovolts
 DC Screen Voltage 1.25 kilovolts
 Pulse Plate Voltage 18.75 kilovolts
 Pulse Plate Current 18 amperes
 Peak Drive Power 552 watts
 Peak Output Power 337 kilowatts
 Duty 0.1 percent
 Pulse Duration 2 microseconds



8187 / 4PR65A

A compact, high-vacuum, radial-beam tetrode incorporating a pyrovac plate and non-emitting grids, intended for pulse-modulator service.

It is recommended for use in new equipments whenever long pulse durations, high duty factors, or high voltages preclude the use of tubes employing oxide-coated cathodes.

MAXIMUM PLATE VOLTAGE 15 kilovolts
MAXIMUM PULSE PLATE CURRENT 1 ampere
COOLING Radiation and Convection

CHARACTERISTICS

Filament: Thoriated tungsten
 Voltage 6.0 volts
 Current 3.2 to 3.8 amperes

Capacitances (Grounded Cathode):
 Input 6.0 to 8.3 pf
 Output 1.9 to 2.6 pf
 Feed-through 0.12 pf

Base 5-pin metal shell
 Socket National HX-29
 or Johnson 122-101

Maximum Base-Seal Temp. 200 °C
 Max. Plate-Seal Temp. 225 °C
 Maximum Length 4.38 inches
 Maximum Diameter 2.38 inches
 Net Weight 3 ounces

MAXIMUM RATINGS

DC PLATE VOLTAGE 15 kilovolts
 DC SCREEN VOLTAGE 2 kilovolts
 PEAK PLATE CURRENT 1 ampere
 PLATE DISSIPATION 65 watts
 SCREEN DISSIPATION 10 watts
 GRID DISSIPATION 5 watts

TYPICAL OPERATION

DC Plate Voltage 15 kilovolts
 DC Screen Voltage 1 kilovolt
 Pulse Plate Voltage 14 kilovolts
 Pulse Plate Current 1 ampere
 Peak Drive Power 11 watts
 Peak Output Power 14 kilowatts
 Duty 5.0 percent



8247 / 4PR125A

A compact, high-vacuum, radial-beam tetrode incorporating a pyrovac plate and non-emitting grids, intended for pulse-modulator service.

It is recommended for use in new equipments whenever long pulse durations, high duty factors, or high voltages preclude the use of tubes employing oxide-coated cathodes.

MAXIMUM PLATE VOLTAGE 18 kilovolts
MAXIMUM PULSE PLATE CURRENT 1.8 amperes
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
 Voltage 5.0 volts
 Current 6.0 to 7.0 amperes

Capacitances (Grounded Cathode):
 Input 9.2 to 12.4 pf
 Output 2.5 to 3.5 pf
 Feed-through 0.07 pf

Base 5-pin metal shell
 Socket National HX-100
 or Johnson 122-275

Maximum Base-Seal Temp. 200 °C
 Maximum Plate-Seal Temp. 170 °C

Maximum Length 5.69 inches
 Maximum Diameter 2.81 inches
 Net Weight 6.5 ounces

MAXIMUM RATINGS

DC PLATE VOLTAGE 18 kilovolts
 DC SCREEN VOLTAGE 2 kilovolts
 PEAK PLATE CURRENT 1.8 amperes
 PLATE DISSIPATION 125 watts
 SCREEN DISSIPATION 20 watts
 GRID DISSIPATION 5 watts

TYPICAL OPERATION

DC Plate Voltage 18 kilovolts
 DC Screen Voltage 1 kilovolt
 Pulse Plate Voltage 17 kilovolts
 Pulse Plate Current 1.8 amperes
 Peak Drive Power 30 watts
 Peak Output Power 30.6 kilowatts
 Duty 4.0 percent

PULSE MODULATORS



8248 / 4PR250C

A 50-kilovolt tetrode for use in pulse-modulator and switch-tube applications. The 4PR250C has a 250-watt plate dissipation rating and is capable of supplying pulses of four amperes and nearly 50 kilovolts to a resistive load. It is recommended for use in new equipments.

MAXIMUM PLATE VOLTAGE 50 kilovolts
MAXIMUM PULSE PLATE CURRENT 4 amperes
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
 Voltage 5.0 volts
 Current 13.5 to 14.7 amperes
 Capacitances:
 Input 11 to 15 uufd
 Output 2.7 to 3.7 uufd
 Feed-Through 0.15 uufd
 Socket Eimac SK-400
 Max. Plate-Seal Temp. 200 °C
 Max. Envelope Temp. 200 °C
 Max. Length 7.5 inches
 Max. Diameter 3.5 inches
 Net Weight 12.5 ounces

MAXIMUM RATINGS

DC PLATE VOLTAGE 50 kilovolts
 DC SCREEN VOLTAGE 2 kilovolts
 PEAK PLATE CURRENT 4 amperes
 PLATE DISSIPATION 250 watts
 SCREEN DISSIPATION 25 watts
 GRID DISSIPATION 5 watts

TYPICAL OPERATION

DC Plate Voltage 49.7 kilovolts
 DC Screen Voltage 1 kilovolt
 Pulse Plate Voltage 48 kilovolts
 Pulse Plate Current 4 amperes
 Peak Drive Power 415 watts
 Peak Output Power 192 kilowatts
 Duty 1.7 percent



8188 / 4PR400A

A compact, high-vacuum, radial-beam tetrode incorporating a pyrovac plate and non-emitting grids, intended for pulse-modulator service. It is recommended for use in new equipments whenever long pulse lengths, high duty factors, or high voltages preclude the use of tubes employing oxide-coated cathodes.

MAXIMUM PLATE VOLTAGE 20 kilovolts
MAXIMUM PULSE PLATE CURRENT 4 amperes
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
 Voltage 5.0 volts
 Current 13.5 to 14.7 amperes
 Capacitances (Grounded Cathode):
 Input 10.7 to 14.5 uufd
 Output 4.2 to 5.6 uufd
 Feed-through 0.17 uufd
 Base 5-pin metal shell
 Socket Eimac SK-400
 Max. Base-Seal Temp. 200 °C
 Max. Plate-Seal Temp. 225 °C
 Maximum Length 8.0 inches
 Maximum Diameter 5.5 inches
 Net Weight 9 ounces

MAXIMUM RATINGS

DC PLATE VOLTAGE 20 kilovolts
 DC SCREEN VOLTAGE 2.5 kilovolts
 PEAK PLATE CURRENT 4 amperes
 PLATE DISSIPATION 400 watts
 SCREEN DISSIPATION 35 watts
 GRID DISSIPATION 10 watts

TYPICAL OPERATION

DC Plate Voltage 20 kilovolts
 DC Screen Voltage 1.5 kilovolts
 Pulse Plate Voltage 19 kilovolts
 Pulse Plate Current 4 amperes
 Peak Drive Power 40 watts
 Peak Output Power 76 kilowatts
 Duty 1.5 Percent



8189 / 4PR1000A

A compact, high-vacuum, radial-beam tetrode incorporating a pyrovac plate and non-emitting grids, intended for pulse-modulator service. This heavy duty pulse modulator is recommended for use in new equipments where high voltage, high current, or high duty preclude the use of tubes employing oxide-coated cathodes.

MAXIMUM PLATE VOLTAGE 30 kilovolts
MAXIMUM PULSE PLATE CURRENT 8 amperes
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
 Voltage 7.5 volts
 Current 20.0 to 22.7 amperes
 Capacitances (Grounded Cathode):
 Input 23.8 to 32.4 uufd
 Output 6.8 to 9.4 uufd
 Feed-through 0.35 uufd
 Base 5-pin metal shell
 Socket Eimac SK-500
 Max. Base-Seal Temp. 150 °C
 Max. Plate-Seal Temp. 200 °C
 Maximum Length 9.63 inches
 Maximum Diameter 5.25 inches
 Net Weight 1.5 pounds

MAXIMUM RATINGS

DC PLATE VOLTAGE 30 kilovolts
 DC SCREEN VOLTAGE 2.5 kilovolts
 PEAK PLATE CURRENT 8 amperes
 PLATE DISSIPATION 1000 watts
 SCREEN DISSIPATION 75 watts
 GRID DISSIPATION 25 watts

TYPICAL OPERATION

DC Plate Voltage 30 kilovolts
 DC Screen Voltage 1.5 kilovolts
 Pulse Plate Voltage 29.4 kilovolts
 Pulse Plate Current 8 amperes
 Peak Drive Power 900 watts
 Peak Output Power 235 kilowatts
 Duty 1.0 percent



8189 / 4PR1000B

The Eimac 4PR1000B is a ruggedized version of the 4PR1000A. A compact, high-vacuum, radial-beam tetrode incorporating a pyrovac plate and non-emitting grids, intended for pulse-modulator service. This heavy-duty pulse modulator is recommended for use in new equipments where high voltage, high current, or high duty preclude the use of tubes employing oxide-coated cathodes.

MAXIMUM PLATE VOLTAGE 30 kilovolts
MAXIMUM PULSE PLATE CURRENT 8 amperes
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
 Voltage 7.5 volts
 Current 20.0 to 22.7 amperes
 Capacitances (Grounded Cathode):
 Input 23.8 to 32.4 uufd
 Output 6.8 to 9.4 uufd
 Feed-through 0.35 uufd
 Base 5-pin metal shell
 Socket Eimac SK-500
 Max. Base-Seal Temp. 150 °C
 Max. Plate-Seal Temp. 200 °C
 Maximum Length 9.63 inches
 Maximum Diameter 5.25 inches
 Net Weight 1.5 pounds

MAXIMUM RATINGS

DC PLATE VOLTAGE 30 kilovolts
 DC SCREEN VOLTAGE 2.5 kilovolts
 PEAK PLATE CURRENT 8 amperes
 PLATE DISSIPATION 1000 watts
 SCREEN DISSIPATION 75 watts
 GRID DISSIPATION 25 watts

TYPICAL OPERATION

DC Plate Voltage 30 kilovolts
 DC Screen Voltage 1.5 kilovolts
 Pulse Plate Voltage 29.4 kilovolts
 Pulse Plate Current 8 amperes
 Peak Drive Power 900 watts
 Peak Output Power 235 kilowatts
 Duty 1.0 percent



284

This tube is a premium quality pulse tetrode intended for use in pulse-modulator, pulsed-amplifier, and pulsed-oscillator service. This compact, high-vacuum, radial-beam tetrode is recommended for use in new equipments where high voltage, high current or high duty factor is encountered.

PLATE DISSIPATION 1000 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
 Voltage 7.5 volts
 Current 20 to 22.7 amperes
 Capacitances (Grounded Cathode):
 Input 23.8 to 32.4 pf
 Output 5.5 to 7.2 pf
 Feed-through 0.35 pf max.
 Base 5-pin special
 Socket SK-500
 Maximum Operating Temperatures:
 Envelope Temperature 225 °C max.
 Seal Temperature 200 °C max.
 Maximum Height 9.625 inches
 Maximum Diameter 5.250 inches
 Net Weight 1.5 pounds
 Class of Operation Class "C"
 Type of Service Pulse Modulator

MAXIMUM RATINGS

PLATE VOLTAGE 45 kilovolts
 PEAK PLATE CURRENT 8 amperes
 PLATE DISSIPATION 1000 watts
 SCREEN DISSIPATION 75 watts
 GRID DISSIPATION 25 watts

TYPICAL OPERATIONS

Capacitive Load
 Plate Voltage 37 kilovolts
 Peak Plate Current 5 amperes
 Screen Voltage 1000 volts
 Peak Drive Power 220 watts
 Peak Output Power 4.2 kilowatts
Resistive Load
 Plate Voltage 17 kilovolts
 Peak Plate Current 7 amperes
 Screen Voltage 1500 volts
 Peak Drive Power 320 watts
 Peak Output Power 98 kilowatts

SOCKETS AND ACCESSORIES

These sockets and accessories are specifically designed for use with Eimac tubes. Choice of the proper socket insures longer tube life and better performance. All sockets incorporate low loss insulating materials. All metal parts are plated for corrosion protection. Tube contact surfaces are non-ferrous spring alloy, silver plated for good rf conductivity and heat treated for positive contact and long life. Open construction permits adequate air flow for tube cooling.



SK-300A



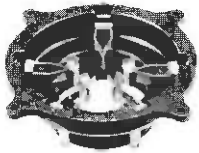
SK-1306 SK-306



SK-400



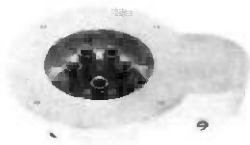
SK-406



SK-410



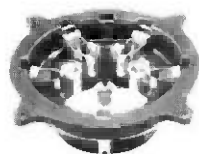
SK-416



SK-500



SK-506



SK-510



SK-516



SK-600



SK-606

| AIR-SYSTEM SOCKET | TUBE | BYPASS CAPACITOR | | | GROUNDED CONTACTS | CHIMNEY |
|-----------------------------|---|------------------|--------------|------------------|----------------------|---------|
| | | CAP. pF | VOLTAGE DCWV | ELEMENT BYPASSED | | |
| SK-184 | 8295 8295A | 2000 2500 | 1000 500 | screen supp. | none | C-184 |
| SK-184A | 8295 8295A | 2000 | 1000 | screen | supp. | C-184 |
| SK-209B | 8432 | 2000 | 1000 | screen | none | C-209 |
| SK-265A | 264 | 2000 | 1000 | screen | none | C-265 |
| SK-291A | 290 | 2000 | 1000 | screen | none | C-290 |
| SK-300 SK-300A* | 4CX5000A 4CX5000J 4CX5000R | none † | | | none | SK-306 |
| | 4CW10.000A 4CW25.000A | | | | | none |
| | 4CX10.000D | | | | | SK-1306 |
| | 4CX15.000A 4CX15.000J | | | | | SK-316 |
| SK-310 | 4CV20.000A 4CV35.000A | none | | | none | none |
| SK-400 | 4-125A 4D21A 4PR125A | none | | | none | none |
| | 4-250A 4-400A 4PR400A 175A 6775 | | | | | SK-406 |
| | 4PR250C | | | | | none |
| | 5-500A | | | | | SK-426 |
| SK-410 | 6155 | none | | | none | SK-406 |
| | 3-400Z | | | | | SK-416 |
| | 3-500Z 6156 7527 | | | | | SK-406 |
| | 4-125A 4D21A 4PR125A | | | | | none |
| | 4-250A 4-400A 4PR400A 175A 6775 | | | | | SK-406 |
| | 4PR250C | | | | | none |
| 5-500A | SK-426 | | | | | |
| SK-500 | 4-1000A 4PR1000A 4PR1000B 279 284 294 | none | | | none | SK-506 |
| SK-510 | 3-1000Z 4-1000A 4PR1000A 4PR1000B 279 284 294 | none | | | none | SK-506 |
| SK-600 SK-602 SK-611* | 4X150A 4X150D 4X150R 4X150S | 2700 | 400 | screen | none | SK-606 |
| SK-610 | 4CX250B 4CX250F | | | | cath. | |
| SK-612† | 4CX250FG 4CX250R 4CX350A 4CX350F 7609 | | | | cath. gl. & 1 htr | |
| | 4W300B | | | | none | |

* SK-300A has low pressure drop characteristic; recommended for new designs.

† Accessory screen bypass cap. available as Y-433 (3600 pf, 1800 DCWV) for the SK-300 and SK-300A.

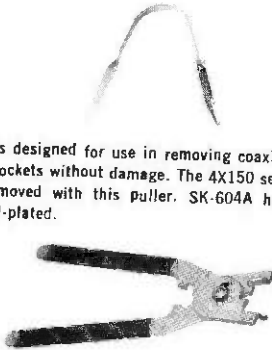
* Body, contacts, & retainer supplied separately; no bypass capacitor.

† Low inductance version.

SOCKETS AND ACCESSORIES

SK-604

This tube puller is designed for use in removing coaxial-base and 9-pin-base tubes from their sockets without damage. The 4X150 series and 4CX250 series tubes may be removed with this puller. SK-604A has a bonderize finish, SK-604B is nickel-plated.



SK-605

These special pliers are designed for use in removing breechblock base tubes from their sockets without damage. The 4CX300 series and 4CX1000 series tubes may be removed with these pliers.

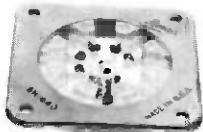


SK-620



SK-626

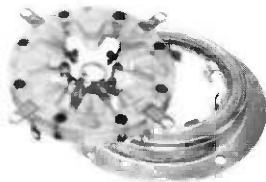
SK-636B



SK-640



SK-606



SK-650

SK-655



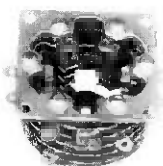
SK-626



SK-700



SK-606



SK-740

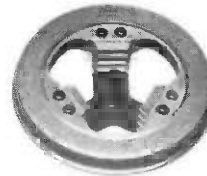


SK-760

| AIR-SYSTEM SOCKET | TUBE | BYPASS CAPACITOR | | | GROUNDED CONTACTS | CHIMNEY |
|--|---|------------------|--------------|------------------|------------------------|--------------------|
| | | CAP. pF | VOLTAGE DCWV | ELEMENT BYPASSED | | |
| SK-600A* SK-602A* | 4X150A 4X150D 4X150R 4X150S 4CX250B 4CX250F 4CX250FG 4CX250R 4CX350A 4CX350F 7609 | 2700 | 1000 | screen | none | SK-606* |
| SK-610A* | 4CX250B 4CX250F 4CX250FG 4CX250R 4CX350A 4CX350F 7609 | | | | cath. | |
| | 4W300B | | | | | none |
| * Bypass capacitor is encapsulated for moisture resistance. | | | | | | |
| SK-620 SK-620A* | 4X150A 4X150D 4X150R | 1100 | 1000 | screen | none | SK-626 SK-636B† |
| SK-621 | 4X150S 4CX250B 4CX250F 4CX250FG | 525 | 500 | cathode | none | |
| SK-630 SK-630A* | 4CX250R 4CX350A 4CX350F 7609 | 1100 | 1000 | screen | cath. | |
| | 4W300B | | | | | none |
| * Bypass capacitor is encapsulated for moisture resistance. † Chimney includes anode clamp. | | | | | | |
| SK-640 | 4X150A 4X150D 4X150R 4X150S 4CX250B 4CX250F 4CX250FG 4CX250R 4CX350A 4CX350F 7609 | none | | | none | SK-606 |
| | 4W300B | | | | | none |
| SK-650 SK-655* | 4X150A 4X150D 4X150R 4X150S 4CX250B 4CX250F 4CX250FG 4CX250R 4CX350A 4CX350F 7609 | 1100 | 1000 | screen | none | SK-626 |
| | 4W300B | | | | | none |
| * SK-650 is a simple, light-weight socket; SK-655 is matching bypass unit, can also be used with coaxial-based tubes in family (e.g. 4CX250K). | | | | | | |
| SK-660*† SK-660A*‡ SK-661*† SK-661A*Δ | | none | | | none | none |
| * For conduction-cooled tube types. † Ceramic body with threaded mounting inserts. ‡ SK-660 with threaded mounting inserts deleted. § BeO body only, no mounting bracket. Δ SK-661 with clamp assembly; matches tube type 4CS250HA with SK-1910 BeO block attached to its anode. | | | | | | |
| SK-700 | 4CN15A 4CX125C 4CX125F 4CX300A 4CX300Y | 1100 | 400 | screen | 1 htr | SK-606 |
| SK-710 SK-710A* SK-711† SK-711A*† SK-712A*† | | | | | 1 htr & cath. 1 htr | |
| * Bypass capacitor has long external arc path. † Body insulation is teflon. | | | | | | |
| SK-740 | 4CN15A 4CX125C 4CX125F 4CX300A 4CX300Y | none | | | none | none |
| SK-760 SK-761* | 4CN15A 4CX125C 4CX125F | none | | | none | integral |
| SK-770 | 4CX300A 4CX300Y | none | | | screen | integral |
| * SK-761 is a low-capacitance version of the SK-760. | | | | | | |

SOCKETS AND ACCESSORIES

| AIR SYSTEM SOCKET | TUBE | BYPASS CAPACITOR | | | GROUNDED CONTACTS | CHIMNEY |
|---|---|--|--------------|------------------|-------------------|----------------|
| | | CAP. pF | VOLTAGE DCWV | ELEMENT BYPASSED | | |
| SK-800B | 4CX1000A | 1500 | 400 | screen | none | SK-806 |
| SK-810B | 4CX1500B | | | | 1 htr & cath. | |
| SK-890B* | 4CW2000A† | | | | | |
| SK-820 | 4CX1000K | 500 | 400 | cathode | screen | |
| SK-830A | 4CX1000K | 2500 | 1000 | screen | cath. | |
| SK-831 | 4CX1000K 4CX1500A | 2500 | 1000 | screen | none | |
| SK-840 | 5CX1500A | 2500 | 1000 | supp. | screen | |
| SK-860 | 3CX1000A7 | none | | | none gl | SK-816 |
| SK-870 | | none | | | | |
| * Screen bypass capacitor isolated from screen contacts. † No chimney required. | | | | | | |
| SK-900 | 4X500A | *650 | 700 | screen | none | SK-906† |
| * Screen bypass capacitor is detachable. † Chimney includes anode clamp. | | | | | | |
| SK-1300 | 3CW10.000A3 3CW20.000A1 3CW20.000A3 3CW20.000A7 | none | | | none | none req'd |
| | 3CX5000A3 | | | | | Y-463 |
| | 3CW25.000A3 3CX10.000A1 3CX10.000A3 3CX10.000A7 3CX15.000A3 | | | | | SK-1306 |
| | 3CX20.000A3 | | | | | none available |
| | | | | | | |
| SK-1310 | 3CV30.000A1 3CV30.000A3 | none | | | none | none req'd |
| SK-1400A | 4CX3000A | 1800 | 1000 | screen | none | SK-1406 |
| SK-1470 | | none | | | screen | |
| SK-1420* | 5CX3000A | 1800 | 1000 | screen | supp. | SK-1426 |
| SK-1490† | 4CV8000A | none | | | none | none req'd |
| * Low-inductance base arrangement. † No mounting flange included. | | | | | | |
| SK-1500* | 4CX35.000C 4CW100.000D 4CV100.000C | none | | | none | none |
| SK-1510† | | | | | | |
| SK-1511‡ | | | | | | |
| * Special assembly, to allow for stem cooling of tube. † SK-1510 is an SK-1500 with tube seating device added. ‡ Tube lifting & seating device for tubes shown. | | | | | | |
| SK-1606A | 6697A | Air distributor | | | | |
| SK-1606B | 6697A | Tube support for air distributor | | | | |
| SK-1610 | 6696A 6697A 7480 | Filament connector, small | | | | |
| SK-1611 | 6696A 6697A 7480 | Filament connector, large | | | | |
| SK-1612 | 6696A | Grid connector | | | | |
| SK-1620 | | Anode water jacket | | | | |
| SK-1625 | | Mounting clamp for water jacket | | | | |
| SK-1626 | | Mounting plate for water jacket | | | | |
| SK-1710 | 4CV250.000A 4CV250.000V | Filament connector (two required) | | | | |
| SK-1712 | 4CW250.000A 4CW250.000V | Control grid connector | | | | |
| SK-1720 | 4CW250.000A/V | Water jacket | | | | |
| SK-1900 | Y-398 Y-401 | BeD insulator disc, attaches to anode of tube for conduction cooling applications. | | | | |
| SK-1910 | 4CS250HA | BeD block, attaches to anode of tube for conduction cooling applications. | | | | |
| SK-2000 series | 4CV50.000E 4CW50.000E 4CW100.000E | | | | | |



SK-800B



SK-806



SK-900



SK-906



SK-1300



SK-1306



SK-1400A



SK-1406



SK-1500

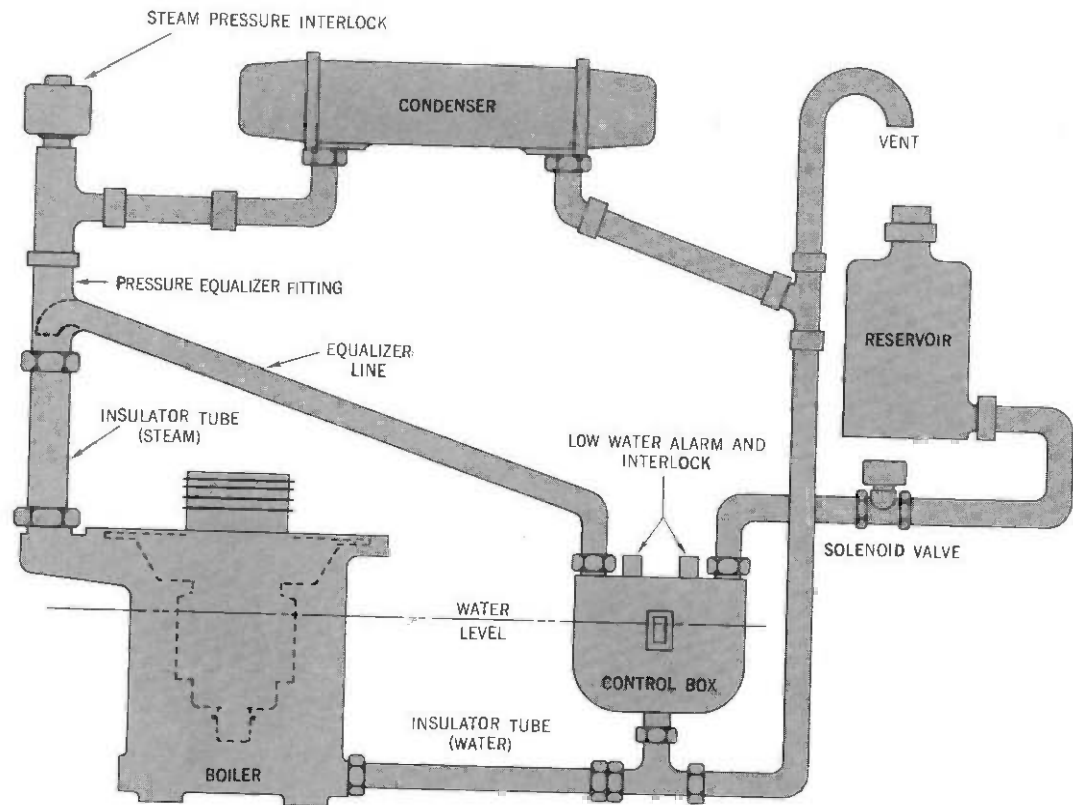
CUSTOM SOCKET DESIGN

For special applications which require features different from these standard sockets, custom designed sockets are offered. These may be modifications of the standard sockets or completely new designs, manufactured to customer drawings or Elmac design. Common modifications include: contact spacing, mounting features, encapsulation of components, grounded contacts, by-pass capacitors, insulating materials, contact materials, and plating.

VAPOR-PHASE COOLING ACCESSORIES

In order to take the guess work out of using vapor cooling, Eimac has developed a complete line of accessories to complement its series of vapor-cooled tubes. All the components labeled in the system at right are available from Eimac. For more information on how this cooling technique can improve the performance of your equipment, write for a free copy of Application Bulletin Number 11, "The Care and Feeding of Vapor-Phase Cooling." Also available from Eimac is application engineering assistance in planning vapor-cooled systems. Eimac representatives can put you in touch with the same people who produced the first completely integrated vapor-phase cooling packages.

SCHMATIC OF TYPICAL EIMAC VAPOR COOLING INSTALLATION



| Tube Type Number | Tube Type | Maximum Plate Dissipation (kW) | Socket | Boiler ¹ | Control Box ² | Reservoir ³ | Steam Line ⁴ | | Water Line ⁴ | | Pressure Equalizer Fitting |
|----------------------------|-----------|--------------------------------|-----------------------------|----------------------------|--------------------------|------------------------|--------------------------------|-----------------------|-------------------------------|-----------------------|----------------------------|
| | | | | | | | Pyrex Line | Pyrex-Cu Adapter | Pyrex Line | Pyrex-Cu Adapter | |
| 4CV8,000A | Tetrode | 8 | SK-1490 | BR-101 | CB-102 | RE-100 | 043028N | AF-100 | 043067N | AF-102 | AD-100 |
| 4CV20,000A | Tetrode | 20 | SK-310 | BR-200 | CB-202 | RE-200 | 043060N | AF-200 | 043068N | AF-202 | AD-200 |
| 3CV30,000A3 | Triode | 30 | SK-1310 | BR-200 | CB-202 | RE-200 | 043060N | AF-200 | 043068N | AF-202 | AD-200 |
| 4CV35,000A | Tetrode | 35 | SK-310 | BR-200 | CB-202 | RE-200 | 043060N | AF-200 | 043068N | AF-202 | AD-200 |
| 4CV50,000E | Tetrode | 50 | SK-2000 | BR-700 | — | — | — | — | — | — | — |
| 4CV75,000 | Tetrode | 75 | SK-1500 | BR-320 | CB-202 | RE-200 | — | — | — | — | — |
| 7480 | Triode | 80 | SK-1600 Series ⁵ | BR-400 | CB-202 | RE-200 | 043033N | AF-300 | 043069N | AF-302 | AD-300 |
| 4CV100,000C | Tetrode | 100 | SK-1510 | BR-300 BR-310 BR-500 | CB-202 — CB-202 | RE-200 — RE-200 | 043033N 043033N 120mm OD | AF-300 AF-300 — | 043069N 043068N 35mm OD | AF-302 AF-302 — | AD-300 — — |
| 4CV100,000E | Tetrode | 100 | SK-2000 | BR-800 | — | — | — | — | — | — | — |
| 4CV250,000V 4CV250,000A | Tetrode | 250 | SK-1700 Series ⁵ | BR-605 | CB-202 | — | 5½" OD | — | 1¾" OD | — | — |

1. One boiler per tube except BR-500 which accommodates two tubes.
 2. Solenoid Operated Valve #124281 and Pressure Interlock #124434 may be used in all system combinations.
 3. Capacities of the reservoirs are: RE-100 = 1 qt., RE-200 = 2 qt., RE-300 = 1 gal.
 4. For multiple tube systems, these components are multiplied by the number of tubes used.
 5. Includes water-cooled filament and grid connections.
- Eimac will recommend condensers for specific system cooling requirements.

OTHER PRODUCTS

HEAT DISSIPATING CONNECTORS

Eimac HR Heat-Dissipating Connectors are used to make electrical connections to the plate and grid terminals of Eimac Tubes, and at the same time, provide efficient heat transfer from the tube element and glass seal to the air. These connectors are machined from solid dural rod and are supplied with the necessary set screws.



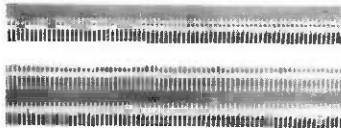
| TYPE * | Length | Dia. | Hole Dia. |
|--------|----------|--------|-----------|
| HR-1 | 11/16" | 1/2" | .052" |
| HR-2 | 11/16" | 1/2" | .062" |
| HR-3 | 11/16" | 1/2" | .072" |
| HR-4 | 7/8" | 3/4" | .102" |
| HR-5 | 7/8" | 3/4" | .127" |
| HR-6 | 7/8" | 3/4" | .367" |
| HR-7 | 1-11/32" | 1-3/8" | .127" |
| HR-8 | 1-11/32" | 1-3/8" | .575" |
| HR-9 | 4-11/32" | 1-3/8" | .569" |
| HR-10 | 1-11/32" | 1-3/8" | .510" |

RECOMMENDED CONNECTORS FOR USE WITH EACH EIMAC TUBE TYPE

| TUBE | Plate Connector | Grid Connector | TUBE | Plate Connector | Grid Connector |
|--------------|-----------------|----------------|-------------|-----------------|----------------|
| 2-25A | HR-1 | ..... | 25T | HR-1 | ..... |
| 2-50A | HR-3 | ..... | 35T | HR-3 | ..... |
| 2-150D | HR-6 | ..... | 35TG | HR-3 | HR-3 |
| 2-240A | HR-6 | ..... | 75TH-TL | HR-3 | HR-2 |
| 2-450A | HR-8 | ..... | 100TH-TL | HR-6 | HR-2 |
| 2-2000A | HR-8 | ..... | VT127A | HR-3 | HR-3 |
| 3-1000Z | HR-8 | ..... | 250TH-TL | HR-6 | HR-3 |
| 3C24 | HR-1 | HR-1 | 250R | HR-6 | ..... |
| 4-65A | HR-6 | ..... | 304TH-TL | HR-7 | HR-6 |
| 4D21/4-125A | HR-6 | ..... | 450TH-TL | HR-8 | HR-8 |
| 5D22/4-250A | HR-6 | ..... | 592/3-200A3 | HR-10 | HR-5 |
| 4-400A | HR-6 | ..... | 750TL | HR-8 | HR-8 |
| 4-1000A | HR-8 | ..... | 866A | HR-8 | ..... |
| 4E27A/5-125B | HR-5 | ..... | 872A | HR-8 | ..... |
| 4PR60A | HR-8 | ..... | 1000T | HR-9 | HR-9 |
| 6C21 | HR-8 | HR-8 | 1500T | HR-8 | HR-8 |
| KY21A | HR-3 | ..... | 2000T | HR-8 | HR-8 |
| RX21A | HR-3 | ..... | 8020 100R) | HR-8 | ..... |

*For marking per MIL-STD-130B add prefix letter "M" to the part number for connectors HR-4 through HR-10. Note HR-1 through HR-3 are too small to permit marking.

PREFORMED CONTACT FINGER STOCK

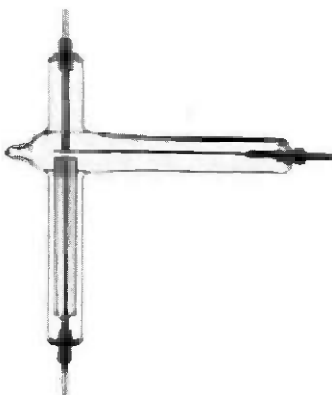


Eimac Preformed Finger Stock is a prepared strip of spring material slotted and formed into a series of fingers designed to make a sliding contact. It is especially suitable for making connections to tubes with coaxial terminals or to moving parts, such as long-line and cavity circuits or screen-room doors. Eimac finger stock is available in 9 different shapes and sizes, three of which incorporate "spooned" contact fingers. All sizes come in standard 36 inch lengths. Standard stock is heat treated and silver plated. Also available without heat treating or plating.

| Type | Finger Radius (inches) | Finger Width (inches) | Slot Width (inches) | Slot Depth (inches) | Comments |
|--------|------------------------|-----------------------|---------------------|---------------------|-------------------------------------|
| CF-100 | 1/16 | 1/8 | 0.040 | 9/32 | spooned |
| CF-200 | 1/16 | 1/8 | 0.040 | 9/32 | double-edged |
| CF-300 | 13/64 | 1/8 | 0.040 | 19/32 | finger tip has reverse radius |
| CF-400 | 13/64 | 1/8 | 0.040 | 35/64 | double-edged |
| CF-500 | 15/32 | 1/8 | 0.040 | 7/8 | finger tip has reverse radius |
| CF-600 | 15/32 | 1/8 | 0.040 | 29/32 | double-edged with reverse tip radii |
| CF-700 | 1/16 | 1/8 | 0.040 | 9/32 | spooned |
| CF-800 | 1/16 | 1/8 | 0.040 | 15/32 | spooned and bent |
| CF-900 | 0.030 | 1/16 | 0.020 | 15/64 | smallest fingers |

Eimac Contact Finger Stock is available on special factory order in the following semi-finished states:

| |
|---|
| Slotted and formed (Not heat treated or plated) |
| Slotted, formed, and heat treated (Not plated) |
| Slotted, formed, and plated (Not heat treated) |



VACUUM SWITCHES

Eimac Vacuum Switches are offered for pulse service or rf switching. For details inquire of Eimac Power Grid Division.

| Type | Intended Service | Insulation | Current | Peak Test Voltage | DC Coil |
|------|-----------------------|------------|--------------|-------------------|----------------|
| VS-2 | RF | Glass | 5a (30 MHz) | 20 KV | 12 V. 24 V. |
| VS-6 | Pulse | Glass | 150a (Pulse) | 22 KV | 12 V. 24 V. |
| VS-8 | Medical Defibrillator | Glass | — | 15 KV | 30 V. |
| VS-9 | RF General | Ceramic | 4a (16 MHz) | 4 KV | 26.5 V. |

Date _____

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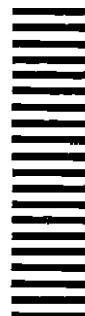
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