POWER GRID TUBES
QUICK REFERENCE CATALOG
EIMAC division of varian

Contents Page

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.

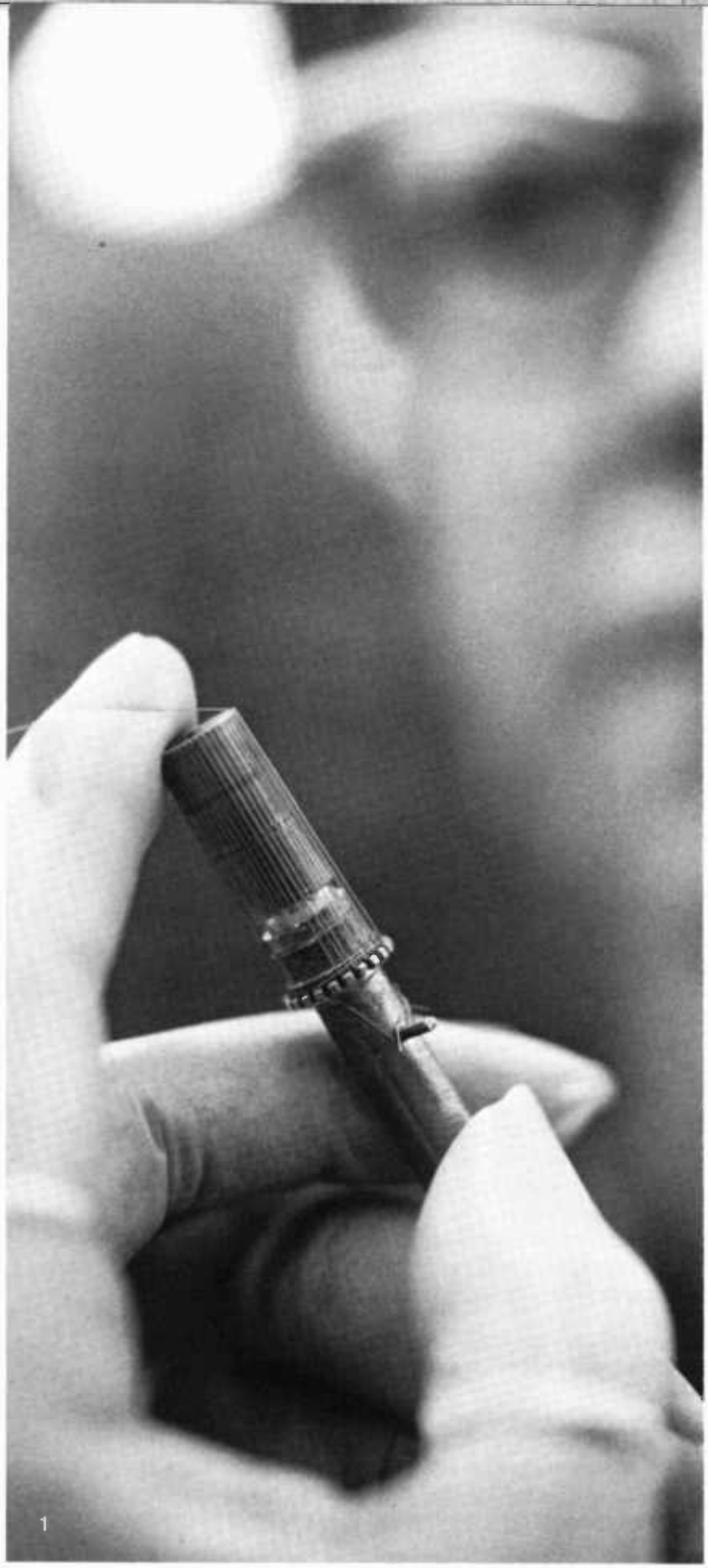
Major production activity at the San Carlos plant covers the manufacture of ceramic / metal triodes, tetrodes and pentodes; glass and ceramic envelope tubes and a wide line of planar triodes are major production items at the Salt Lake City plant.

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.

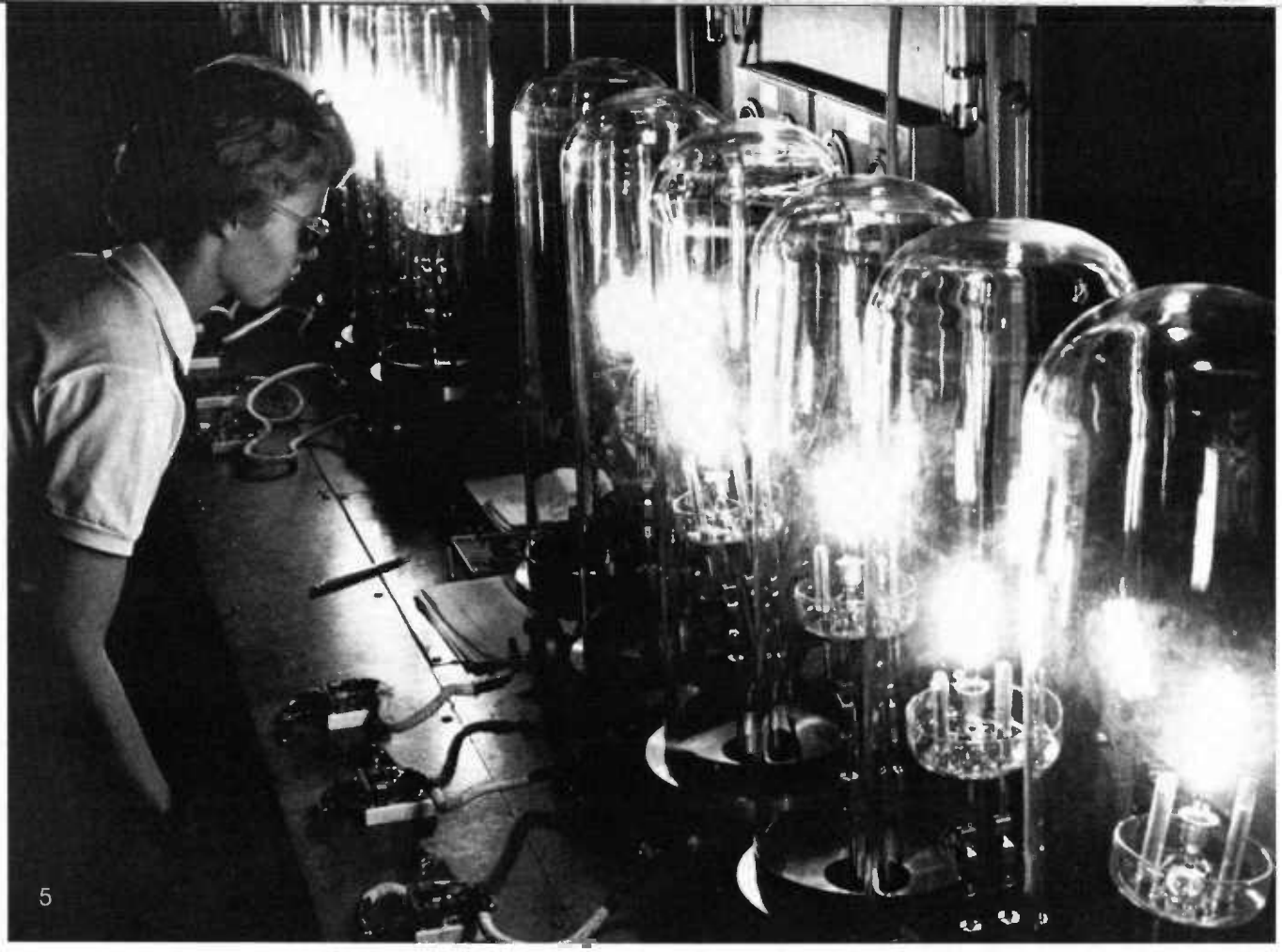
Quality assurance procedures are very rigid, and include both operator surveillance, batch sampling, and statistical controls.

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.



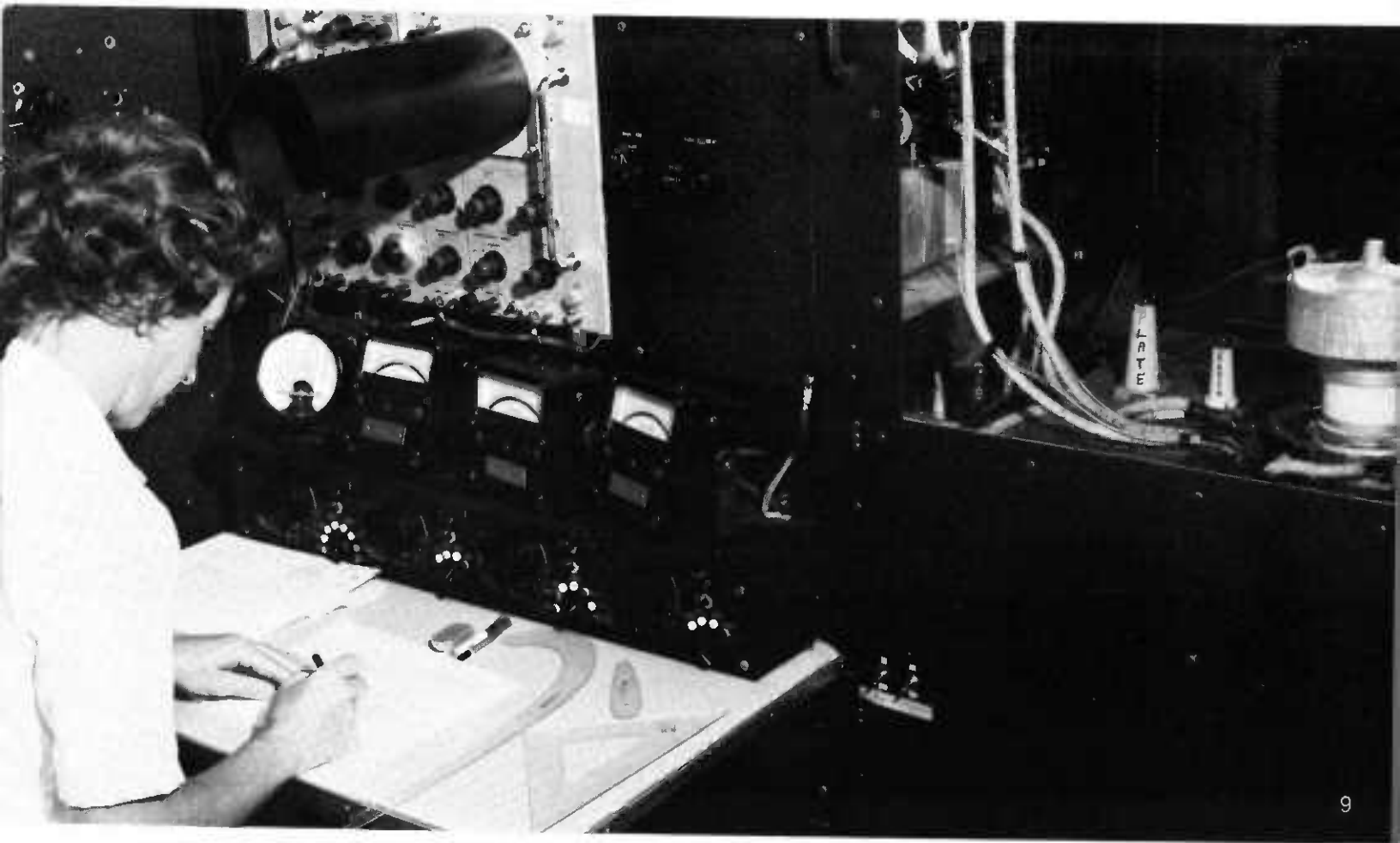
1. Hand-winding grid for 4CX250B—San Carlos
2. Sealing tube structure on glass lathe—Salt Lake City
3. Metallizing ceramic blanks in hydrogen furnace—San Carlos
4. Nitrogen atmosphere welder—San Carlos



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

6

7



9

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:

3CX100A5

NUMBER OF ELECTRODES
2—Diode
3—Triode
4—Tetrode
5—Pentode

DESCRIPTION
C—Ceramic Envelope (No Glass)
N—External Anode, Natural Convection Air Cooling
P—Primarily for Pulse Applications
*R—Internal Anode, Radiation Cooled
S—External Anode, Conduction Cooled
V—External Anode, Vapor Cooled
W—External Anode, Water Cooled
X—External Anode, Forced-Air Cooled

PLATE DISSIPATION (Watts)

AMPLIFICATION FACTOR
1—0 to 10
2—11 to 20
3—21 to 30
4—31 to 50
5—51 to 100
6—101 to 200
7—201 to 500
8—501 to 100

VERSION
Distinguishes tubes which, although alike as to number of electrodes and plate dissipation, are not necessarily interchangeable physically or electrically.

*In older types, the dash, as in the case of the 4-250A, carries the meaning of "R" given above.

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-mu 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
Heater:
Voltage 6.3 volts
Current 0.95 to 1.10 amperes
Capacitances:
Grid-Cathode 5.60 to 7.60 pf
Grid-Plate 1.86 to 2.16 pf
Plate-Cathode 0.035 pf

Base Coaxial
Socket Special
Maximum Seal Temp. 250 °C
Maximum Anode Core Temp. 250 °C
Maximum Height 2.75 inches
Maximum Diameter 1.27 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Cathode Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
Voltage 6.3 volts
Current 0.95 to 1.10 amperes
Capacitances:
Grid-Cathode 5.60 to 7.60 pf
Grid-Plate 1.86 to 2.16 pf
Plate-Cathode 0.035 pf

Base Coaxial
Socket Special
Maximum Seal Temp. 250 °C
Maximum Anode Core Temp. 250 °C
Maximum Height 2.75 inches
Maximum Diameter 1.27 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Cathode Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
Voltage 6.3 volts
Current 1.3 amperes
Capacitances:
Grid-Cathode 8.0 pf
Grid-Plate 2.25 pf
Plate-Cathode 0.06 pf

Base Coaxial
Maximum Seal Temp. 250°C
Maximum Anode-Core Temp. 250°C
Maximum Height 2.75 inches
Maximum Diameter 1.27 inches
Net Weight 2.5 ounches

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
Voltage 6.0 volts
Current 0.90 to 1.05 amperes
Capacitances:
Grid-Cathode 5.60 to 7.00 pf
Grid-Plate 1.86 to 2.15 pf
Plate-Cathode 0.035 pf

Base Coaxial
Maximum Seal Temp. 250 °C
Maximum Anode Temp. 250 °C
Maximum Height 2.70 inches
Maximum Diameter 1.195 inches
Net Weight 1.6 ounces

Class of Operation	Type of Service	Maximum Pulse Ratings: Plate Voltage (volts)	Plate Current (amps.)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Pulse Operation: 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	2500	3.0	10	2	2200	1.9	0.001	2000

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
Heater:
- Voltage 6.3 volts
- Current 1.3 amperes

Capacitances:
- Grid-Cathode 8.0 pf
- Grid-Plate 2.25 pf
- Plate-Cathode 0.06 pf

Base Coaxial
Maximum Seal Temp. 250°C
Maximum Anode Temp. 250°C
Maximum Height 2.276 inches
Maximum Diameter 1.195 inches
Net Weight 1.6 ounces

Class of Operation	Type of Service	Maximum Pulse Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Pulse Operation: 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
Heater:
- Voltage 6.0 volts
- Current 0.90 to 1.05 amperes

Capacitances:
- Grid-Cathode 5.6 to 7.0 pf
- Grid-Plate 1.95 to 2.15 pf
- Plate-Cathode 0.035 pf

Base Coaxial
Maximum Seal Temp. 250 °C
Maximum Anode-Core Temp. 250 °C
Maximum Height 2.701 inches
Maximum Diameter 1.264 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Cathode Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
- Voltage 26.5 volts
- Current 0.2 to 0.24 amperes

Capacitances:
- Grid-Cathode 5.6 to 7.0 pf
- Grid-Plate 1.95 to 2.15 pf
- Plate-Cathode 0.035 pf

Base Coaxial
Maximum Seal Temp. 250 °C
Maximum Anode-Core Temp. 250 °C
Maximum Height 2.701 inches
Maximum Diameter 1.264 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Cathode Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
- Voltage 6.0 volts
- Current 0.90 to 1.05 amperes

Capacitances:
- Grid-Cathode 5.6 to 7.0 pf
- Grid-Plate 1.86 to 2.15 pf
- Plate-Cathode 0.035 pf

Base Coaxial
Maximum Seal Temp. 250 °C
Maximum Anode-Core Temp. 250 °C
Maximum Height 2.701 inches
Maximum Diameter 1.264 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Pulse Ratings: Plate Voltage (volts)	Plate Current (amps.)	Plate Diss. (watts)	Grid. Diss. (watts)	Typical Pulse Operation: Plate Voltage (volts)	Plate Current (amps)	Duty	Output Power (watts)
C	Plate-Pulsed Power Oscillator—3000 MHz	3,500	3.0	100	2	3,500	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-mu 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 mu, 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
Heater:
- Voltage 6.0 volts
- Current 1.0 amperes

Capacitances:
- Grid-Cathode 6.3 pf
- Grid-Plate 2.5 pf
- Plate-Cathode 0.06 pf

Base Coaxial
Socket Special
Maximum Seal Temp. 250 °C
Maximum Anode Core Temp. 250 °C
Maximum Height 2.386 inches
Maximum Diameter 1.264 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-mu 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 mu, 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
Heater:
- Voltage 6.3 volts
- Current 1.3 amperes

Capacitances:
- Grid-Cathode 8.0 pf
- Grid-Plate 3.1 pf
- Plate-Cathode .065 pf

Base Coaxial
Socket Special
Maximum Anode Temp. 250 °C
Maximum Height 2.386 inches
Maximum Diameter 1.195 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-mu 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
Heater:
- Voltage 6.3 volts
- Current 1.3 amperes

Capacitances:
- Grid-Cathode 8.0 pf
- Grid-Plate 1.65 pf
- Plate-Cathode .06 pf

Base Coaxial
Socket Special
Maximum Envelope Temp. 250 °C
Maximum Height 2.701 inches
Maximum Diameter 1.195 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
- Voltage 6.0 volts
- Current 0.90 to 1.05 amperes

Capacitances:
- Grid-Cathode 5.6 to 7.0 pf
- Grid-Plate 1.86 to 2.15 pf
- Plate-Cathode 0.035 pf

Base Coaxial
Maximum Seal Temp. 250 °C
Maximum Anode-Core Temp. 250 °C
Maximum Height 2.701 inches
Maximum Diameter 1.264 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Pulse Ratings: Plate Voltage (volts)	Plate Current (amps.)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Pulse Operation: Plate Voltage (volts)	Plate Current (amps)	Duty	Output Power (watts)
C	Plate-Pulsed Power Oscillator—3000 MHz	3,500	3.0 pk	100	2	3,500	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
Heater:
- Voltage 6.3 volts
- Current 1.3 amperes

Capacitances:
- Grid-Cathode 9.3 pf
- Grid-Plate 1.25 pf
- Plate-Cathode 0.06 pf

Base Coaxial
Socket Special
Maximum Seal Temp. 250 °C
Maximum Anode Core Temp. 250 °C
Maximum Height 1.47 inches
Maximum Diameter 0.83 inches
Net Weight 0.67 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
- Voltage 6.0 volts
- Current 0.7 amperes

Capacitances:
- Grid-Cathode 7.0 pf
- Grid-Plate 1.6 pf
- Plate-Cathode 0.04 pf

Base Coaxial
Socket Special
Maximum Seal Temp. 250 °C
Maximum Anode Core Temp. 250 °C
Maximum Height 1.54 inches
Maximum Diameter 0.83 inches
Net Weight 0.67 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Cathode Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
- Voltage 6.3 volts
- Current 1.3 amperes

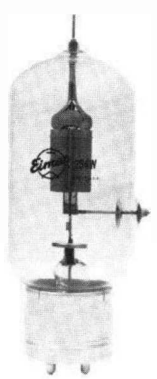
Capacitances:
- Grid-Cathode 9.5 pf
- Grid-Plate 2.25 pf
- Plate-Cathode 0.06 pf

Base Coaxial
Socket Special
Maximum Seal Temp. 250 °C
Maximum Anode Core Temp. 250 °C
Maximum Height 1.35 inches
Maximum Diameter 0.83 inches
Net Weight 0.67 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Cathode Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
- Voltage 5.0 volts
- Current 7.5 amperes

Capacitances:
- Grid-Filament 3.4 pf
- Grid-Plate 2.5 pf
- Plate-Filament 0.43 pf

Base Jumbo 4-pin JETEC A4-29
Socket Johnson 123-211
Maximum Height 7.13 inches
Maximum Diameter 2.69 inches
Net Weight 6 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Current (amps)	Typical Operation: 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

CHARACTERISTICS

Filament: Thoriated tungsten		Base	5-pin
Voltage	5.0 volts	Socket	Eimac SK-410
Current	14.1 amperes	Maximum Base Seal Temp.	180 °C
Capacitances:		Maximum Anode Seal Temp.	220 °C
Grid-Filament	7.2 pf	Maximum Height	5.875 inches
Grid-Plate	5.6 pf	Maximum Diameter	3.438 inches
Plate-Filament	0.5 pf	Net Weight	6 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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

CHARACTERISTICS

Filament: Thoriated tungsten		Base	5-pin Metal Shell
Voltage	5.0 volts	Socket	Johnson 122-275
Current	14.5 amperes	Maximum Plate Cap Temp.	170 °C
Capacitances:		Maximum Height	6.38 inches
Grid-Filament	7.6 pf	Maximum Diameter	3.56 inches
Grid-Plate	3.7 pf	Net Weight	8 ounces
Plate-Filament	0.10 pf		

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Current (amps)	Typical Operation: 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

CHARACTERISTICS

Filament: Thoriated tungsten		Base	5-pin Metal Shell
Voltage	5.0 volts	Socket	Johnson 122-275
Current	14.5 amperes	Maximum Plate Cap Temp.	170 °C
Capacitances:		Maximum Height	6.38 inches
Grid-Filament	7.6 pf	Maximum Diameter	3.56 inches
Grid-Plate	3.9 pf	Net Weight	8 ounces
Plate-Filament	0.10 pf		

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Current (amps)	Typical Operation: 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

CHARACTERISTICS

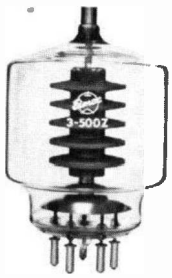
Filament: Thoriated tungsten		Base	5-pin, Special
Voltage	5.0 volts	Socket	Eimac SK-410
Current	13.5 to 14.7 amperes	Maximum Base Temp.	200 °C
Capacitances (Grounded Filament):		Maximum Plate Seal Temp.	225 °C
Grid-Filament	6.0 to 9.0 pf	Maximum Height	5.25 inches
Grid-Plate	4.0 to 5.3 pf	Maximum Diameter	3.57 inches
Plate-Filament	0.11 pf	Net Weight	7 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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

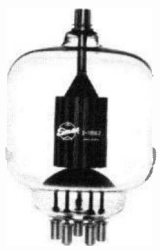
CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 14.5 amperes
Capacitances:
Grid-Filament 7.4 pf
Grid-Plate 4.1 pf
Plate-Filament 0.07 pf

Base 5-pin Special
Socket Special
Maximum Seal Temp. Plate 225 °C, Base 200 °C
Maximum Height 5.875 inches
Maximum Diameter 3.438 inches
Net Weight 7 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 7.5 volts
Current 21.3 amperes
Capacitances (Grounded Filament):
Grid-Filament 17.0 pf
Grid-Plate 6.9 pf
Plate-Filament 0.12 pf

Base 5-pin, Special
Socket Eimac SK-510
Maximum Base Temp. 200 °C
Maximum Plate Seal Temp. 225 °C
Maximum Height 7.88 inches
Maximum Diameter 5.25 inches
Net Weight 1.2 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 5.0 volts
Current 34 amperes
Capacitances (In Shielded Fixture):
Grid-Filament 35 pf
Grid-Plate 14 pf
Plate-Filament 0.08 pf

Base Special, breechblock
Socket Eimac SK-860 or SK-870
Maximum Seal Temp. 250 °C
Maximum Anode Core Temp. 250 °C
Maximum Height 4.68 inches
Maximum Diameter 3.36 inches
Net Weight 2.0 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 7.5 volts
Current 49 to 54 amperes
Capacitances:
Grid-Filament 29.2 to 40.2 pf
Grid-Plate 16.8 to 23.2 pf
Plate-Filament 0.6 to 1.2 pf

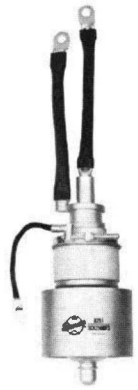
Base Coaxial
Maximum Seal Temp. 175 °C
Maximum Anode-Core Temp. 175 °C
Maximum Height 8.594 inches
Maximum Diameter 4.156 inches
Net Weight 6.25 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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

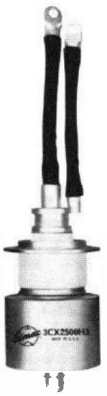
CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 49 to 54 amperes
Capacitances:
Grid-Filament 29.2 to 40.2 pf
Grid-Plate 16.8 to 23.2 pf
Plate-Filament 0.6 to 1.2 pf

Maximum Seal Temp. 175 °C
Maximum Anode-Core Temp. 175 °C
Maximum Height 18.0 inches
Maximum Diameter 3.625 inches
Net Weight 7.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 7.5 volts
Current 53 amperes (max)
Capacitances:
Grid-Filament 40.2 pf (max)
Grid-Plate 23.2 pf (max)
Plate-Filament 1.2 pf (max)

Base Special
Socket Special
Maximum Seal Temp. 250 °C
Maximum Height 18.437 inches
Maximum Diameter 4.156 inches
Net Weight 6.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-AB_1 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
Voltage 7.5 volts
Current 49 to 54 amperes
Capacitances:
Grid-Filament 29 pf
Grid-Plate 17 pf
Plate-Filament 2.5 pf

Base Coaxial
Maximum Seal Temp. 175 °C
Maximum Anode-Core Temp. 175 °C
Maximum Height 8.594 inches
Maximum Diameter 4.156 inches
Net Weight 6.25 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-mu 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-AB_1 amplifier.

PLATE DISSIPATION 3000 watts
GRID DISSIPATION 50 watts
COOLING Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 49 to 54 amperes
Capacitances:
Grid-Filament 29 pf
Grid-Plate 17 pf
Plate-Filament 2.5 pf

Maximum Seal Temp. 175 °C
Maximum Anode-Core Temp. 175 °C
Maximum Diameter 4.156 inches
Net Weight 7.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 mu (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
Voltage 7.5 volts
Current 51 amperes
Capacitances:
Grid-Filament 38 pf
Grid-Plate 24 pf
Plate-Filament 0.6 pf

Maximum Seal Temp. 175 C
Maximum Anode Core Temp. 175 °C
Maximum Height 8.594 inches
Maximum Diameter 4.156 inches
Net Weight 7.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 7.5 volts
Current 51 amperes
Capacitances:
Grid-Filament 38 pf
Grid-Plate 24 pf
Plate-Filament 0.6 pf

Maximum Seal Temp. 175 °C
Maximum Anode Core Temp. 175 °C
Maximum Height 8.594 inches
Maximum Diameter 4.156 inches
Net Weight 7.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-mu 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.

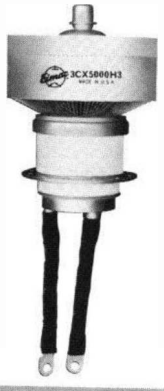
PLATE DISSIPATION 5000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 78 amperes
Capacitances:
Grid-Filament 53 pf
Grid-Plate 2.5 pf
Plate-Filament 1.5 pf

Base Special
Socket Special
Maximum Seal Temp. 250 °C
Maximum Height 8.750 inches
Maximum Diameter 6.4 inches
Net Weight 10 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Current (amps)	Typical Operation: 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
Voltage 7.5 volts
Current 78 amperes (max)
Capacitances:
Grid-Filament 53 pf
Grid-Plate 25 pf
Plate-Filament 1.5 pf

Base Special
Socket Special
Maximum Seal Temp. 250 °C
Maximum Height 17.750 inches
Maximum Diameter 6.400 inches
Net Weight 10 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Current 94.0 to 104.0 amperes
Capacitances (Grounded Filament):
Grid-Filament 45.0 to 57.0 pf
Grid-Plate 25.0 to 32.0 pf
Plate-Filament 3.4 to 4.2 pf

Base Coaxial
Socket Eimac SK-1300
Maximum Seal Temp. 250 °C
Maximum Anode-Core Temp. 250 °C
Maximum Height 8.50 inches
Maximum Diameter 7.00 inches
Net Weight 12 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Output Power (watts)
AB_1	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
Current 94 to 104 amperes
Capacitances (Grounded Filament):
Grid-Filament 48.0 to 58.0 pf
Grid-Plate 30.0 to 38.0 pf
Plate-Filament 1.20 to 1.50 pf

Base Coaxial
Socket Eimac SK-1300
Maximum Seal Temp. 250 °C
Maximum Anode-Core Temp. 250 °C
Maximum Height 8.50 inches
Maximum Diameter 7.00 inches
Net Weight 12 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Current 104 amperes (max)
Capacitances:
Grid-Filament 58 pf
Grid-Plate 38 pf
Plate-Filament 1.5 pf

Base Special
Socket Special
Maximum Seal Temp. 250 °C
Maximum Height 15.8 inches
Maximum Diameter 7.050 inches
Net Weight 12 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Current 94.0 to 104.0 amperes
Capacitances (Grounded Filament):
Grid-Filament 63 pf
Grid-Plate 41 pf
Plate-Filament 0.05 pf

Base Coaxial
Socket Eimac SK-1300
Maximum Seal Temp. 250 °C
Maximum Anode Core Temp. 250 °C
Maximum Height 8.5 inches
Maximum Diameter 7.0 inches
Net Weight 12 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-mu 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
Voltage 6.3 volts
Current 152 to 168 amperes
Capacitances (Grounded Filament):
Grid-Filament 40.0 to 58.0 pf
Grid-Plate 30.0 to 38.0 pf
Plate-Filament 1.2 to 1.5 pf

Base Coaxial
Socket Eimac SK-1300
Maximum Seal Temp. 250°C
Maximum Anode-Core Temp. 250°C
Maximum Height 8.5 inches
Maximum Diameter 7.0 inches
Net Weight 12 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps.)	Plate Diss. (watts)	Grid. Diss. (watts)	Typical Operation: 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_2	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
Voltage 6.3 volts
Current 172 amperes (max)
Capacitances:
Grid-Filament 58 pf
Grid-Plate 38 pf
Plate-Filament 1.5 pf

Base Special
Socket Special
Maximum Seal Temp. 250 °C
Maximum Height 17.750 inches
Maximum Diameter 7.050 inches
Net Weight 13 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 10 volts
Current 160 amperes
Capacitances (Grounded Cathode):
Grid-Filament 65 to 75 pf
Grid-Plate 38.0 to 48.0 pf
Plate-Filament 2.0 to 2.6 pf

Base Coaxial
Socket Eimac SK-1300
Maximum Seal Temp. 250 °C
Maximum Anode Temp. 250 °C
Maximum Height 10 inches
Maximum Diameter 8 inches
Net Weight 19.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 10 volts
Current 160 amperes
Capacitances (Grounded Cathode):
Grid-Filament 65 to 75 pf
Grid-Plate 38.0 to 48.0 pf
Plate-Filament 2.0 to 2.6 pf

Base Special
Maximum Seal Temp. 250 °C
Maximum Anode Temp. 250 °C
Maximum Height 10 inches
Maximum Diameter 8 inches
Net Weight 21 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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		Terminals	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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 reserve 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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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

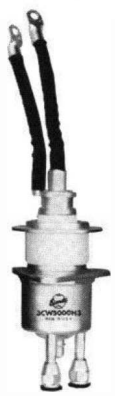
CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 49 to 54 amperes
Capacitances:
Grid-Filament 36 pf
Grid-Plate 21 pf
Plate-Filament 1.2 pf

Maximum Seal Temp. 250 °C
Maximum Height 22.0 inches
Maximum Diameter 3.625 inches
Net Weight 4.8 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 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
Voltage 7.5 volts
Current 53 amperes (max)
Capacitances:
Grid-Filament 40.2 pf
Grid-Plate 24.2 pf
Plate-Filament 1.20 pf

Base Flexible Leads
Maximum Seal Temp. 250 °C
Maximum Height 9.93 inches
Maximum Diameter 5.42 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)	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-mu water-cooled triode designed primarily for use in industrial radio-frequency heating service.

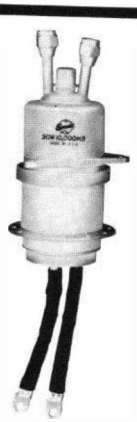
PLATE DISSIPATION 10,000 watts
FREQUENCY FOR MAXIMUM RATINGS 90 MHz
COOLING Water and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 78 amperes (max)
Capacitances:
Grid-Filament 53 pf
Grid-Plate 25 pf
Plate-Filament 1.5 pf

Base Coaxial
Socket SK-1300
Maximum Seal Temp. 250 °C
Maximum Height 10 inches
Maximum Diameter 6.05 inches
Net Weight 10 pounds

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)
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
Voltage 7.5 volts
Current 78 amperes (max)
Capacitances:
Grid-Filament 53 pf
Grid-Plate 25 pf
Plate-Filament 1.5 pf

Base Flexible Leads
Maximum Seal Temp. 250 °C
Maximum Height 17.9 inches
Maximum Diameter 5.090 inches
Net Weight 10 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	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-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 20,000 watts
GRID DISSIPATION 100 watts
COOLING Water and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 94.0 to 104.0 amperes
Capacitances (Grounded Filament):
Grid-Filament 45.0 to 57.0 pf
Grid-Plate 25.0 to 32.0 pf
Plate-Filament 3.4 to 4.2 pf

Base Coaxia
Socket Eimac SK-130
Maximum Seal Temp. 250 °C
Maximum Anode-Core Temp. 250 °C
Maximum Height 8.50 inche
Maximum Diameter 7.00 inche
Net Weight 12 pound

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-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 20,000 watts
GRID DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 140 MHz
COOLING Water and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 94 to 104 amperes
Capacitances (Grounded Filament):
Grid-Filament 48.0 to 58.0 pf
Grid-Plate 30.0 to 38.0 pf
Plate-Filament 1.20 to 1.50 pf

Base Coaxi
Socket Eimac SK-13
Maximum Seal Temp. 250
Maximum Anode-Core Temp. 250
Maximum Height 8.50 inch
Maximum Diameter 7.00 inch
Net Weight 12 poun

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Outpu Powe (watts
C	Radio-Frequency Industrial Oscillator	7000	4.0	20,000	250	7000	4.0	—	22,40
AB_2	Radio-Frequency Linear Power Amplifier—SSB, Grounded-Grid	7000	5.0	20,000	250	7000	4.0	2050	20,00
C	Radio-Frequency Power Amplifier, Grounded-Grid	7000	4.0	20,000	250	7000	4.0	4100	24,50
C	Plate-Modulated RF Power Amplifier	5500	3.0	13,500	250	5000	3.0	515	12,40

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

*Two tubes.

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 94.0 to 104.0 amperes
Capacitances (Grounded Filament):
Grid-Filament 63 pf
Grid-Plate 41 pf
Plate-Filament 0.05 pf

Base Coax
Socket Eimac SK-13
Maximum Seal Temp. 250 °C
Maximum Anode Core Temp. 250 °C
Maximum Height 8.5 inch
Maximum Diameter 7.0 inch
Net Weight 12 poun

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Outpu Powe (watt
B	Audio-Frequency Power Amplifier or Modulator	7000	5.0	20,000	500	7000	10.0*	560*	47,70
B	Radio-Frequency Linear Power Amplifier, Grounded-Grid—SSB	7000	5.0	20,000	500	7000	5.0	1540	24,20
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	21,30
C	Plate-Modulated RF Power Amplifier	5500	3.0	13,500	500	5000	3.0	380	11,90

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
Voltage 7.5 volts
Current 104 amperes (max)
Capacitances:
Grid-Filament 58 pf
Grid-Plate 38 pf
Plate-Filament 1.5 pf

Base Flexible Le
Maximum Seal Temp. 250 °C
Maximum Heignt 17.750 inch
Maximum Diameter 5.090 inch
Net Weight 12 pou

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Outp Pow (wat
C	RF Industrial Oscillator	12,000	4.0	20,000	250	10,000	4.0	340	28,0

TRIODES

EXTERNAL ANODE ■ WATER COOLED

3CW25,000A3

An integral water jacket allows an anode dissipation rating of 25 kilowatts with this new medium-mu, 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
Voltage 6.3 volts
Current 152 to 168 amperes
Capacitances (Grounded Filament):
Grid-Filament 48.0 to 58.0 pf
Grid-Plate 30.0 to 38.0 pf
Plate-Filament 1.2 to 1.5 pf

Base Coaxial
Socket Eimac SK-1300
Maximum Seal Temp. 250°C
Maximum Height 11.4 inches
Maximum Diameter 4.7 inches
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	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
Voltage 6.3 volts
Current 172 amperes (max)
Capacitances:
Grid-Filament 48 pf
Grid-Plate 38 pf
Plate-Filament 1.5 pf

Base Flexible Leads
Maximum Seal Temp. 250 °C
Maximum Height 17.750 inches
Maximum Diameter 5.090 inches
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	RF Industrial Oscillator	12,000	6.0	30,000	500	10,000	6.0	365	42,000

3CW40,000H3

The 3C40,000H3 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
Voltage 10 volts
Current 168 amperes (max)
Capacitances:
Grid-Filament 75 pf
Grid-Plate 48 pf
Plate-Filament 2.6 pf

Base Flexible Leads
Maximum Seal Temp. 250 °C
Maximum Height 19.050 inches
Maximum Diameter 5.090 inches
Net Weight 14 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	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 mu 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
Voltage 13 volts
Current 205 amperes
Capacitances (Grounded Filament):
Grid-Filament 76 pf
Grid-Plate 55 pf
Plate-Filament 2.7 pf

Terminals Coaxial
Maximum Seal Temp. 250°C
Maximum Height 19.75 inches
Maximum Diameter 4.8 inches
Net Weight 20 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	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 mu value and is recommended for Class AB_1, audio, or regulator service.

PLATE DISSIPATION 30,000 watts
COOLING Vapor Phase and Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 100 amperes
Base Coaxial
Socket SK-1310

Maximum Envelope Temp. 250 °C
Maximum Height 8.750 inches
Maximum Diameter 7.750 inches
Net Weight 18 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 6.3 volts
Current 158 amperes
Capacitances (Grounded Filament):
Grid-Filament 48.0 to 58.0 pf
Grid-Plate 30.0 to 38.0 pf
Plate-Filament 1.2 to 1.5 pf

Base Coaxial
Socket Eimac SK-1310
Maximum Seal Temp. 250 °C
Maximum Height 8.75 inches
Maximum Diameter 7.75 inches
Net Weight 22 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Current (amps)	Typical Operation: 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
Voltage 6.3 volts
Current 172 amperes (max)
Capacitances (Grounded Cathode):
Grid-Filament 48 to 58 pf
Grid-Plate 30 to 38 pf
Plate-Filament 1.2 to 1.5 pf

Base Special
Socket SK-131
Maximum Seal Temp. 250 °C
Maximum Height 8.75 inches
Maximum Diameter 7.75 inches
Net Weight 18 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 13.0 volts
Current 205 amperes
Capacitances (Grounded Filament):
Grid-Filament 76 pf
Grid-Plate 55 pf
Plate-Filament 2.7 pf

Terminals Coaxia
Maximum Seal Temp. 250°
Maximum Height 20.2 inche
Maximum Diameter 7.1 inch
Net Weight 50 pound

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 6.0 volts
Current 3.2 to 3.8 amperes
Capacitances (Grounded Filament):
Input 6.0 to 8.3 pf
Output 1.9 to 2.6 pf
Feed-Through 0.12 pf
Base 5-pin
Socket National HX29 or Johnson 122-101
Max. Base-Seal Temp. 170 °C.
Max. Envelope Temp. 225 °C.
Max. Height 4.38 inches
Max. Diameter 2.38 inches
Net Weight 3 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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.

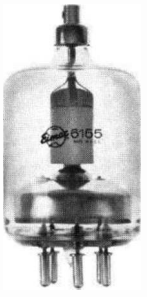
PLATE DISSIPATION 125 watts
FREQUENCY FOR MAXIMUM RATINGS 120 MHz
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 6.0 to 7.0 amperes
Capacitances (Grounded Filament):
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 HX100 or Johnson 122-275
Max. Base-Seal Temp. 170 °C.
Max. Envelope Temp. 225 °C.
Max. Height 5.69 inches
Max. Diameter 2.81 inches
Net Weight 6.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 5.0 volts
Current 6.0 to 7.0 amperes
Capacitances (Grounded Filament):
Input 9.2 to 12.4 pf
Output 2.5 to 3.5 pf
Feed-Through 0.07 pf
Base 5-pin
Socket National HX100 or Johnson 122-275
Max. Base-Seal Temp. 170 °C.
Max. Envelope Temp. 225 °C.
Max. Height 5.69 inches
Max. Diameter 2.81 inches
Net Weight 6.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 5.0 volts
Current 13.5 to 14.7 amperes
Capacitances (Grounded Filament):
Input 10.7 to 14.5 pf
Output 3.7 to 5.1 pf
Feed-Through 0.14 pf
Base 5-pin metal shell
Socket Eimac SK-400
Max. Base-Seal Temp. 170 °C.
Max. Envelope Temp. 225 °C.
Max. Height 6.38 inches
Max. Diameter 3.56 inches
Net Weight 8 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 5.0 volts
Current 13.5 to 14.7 amperes
Capacitances (Grounded Filament):
Input 10.7 to 14.5 pf
Output 3.7 to 5.1 pf
Feed-Through 0.14 pf

Base 5-pin metal shell
Socket Eimac SK-400
Max. Base-Seal Temp. 170 °C
Max. Envelope Temp. 225 °C
Max. Height 6.38 inches
Max. Diameter 3.56 inches
Net Weight 8 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 5.0 volts
Current 13.5 to 14.7 amperes
Capacitances (Grounded Filament):
Input 10.7 to 14.5 pf
Output 4.2 to 6.6 pf
Feed-Through 0.17 pf

Base 5-pin metal shell
Socket Eimac SK-400
Max. Base-Seal Temp. 170 °C.
Max. Envelope Temp. 225 °C.
Max. Height 6.38 inches
Max. Diameter 3.56 inches
Net Weight 9 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 5.0 volts
Current 14.5 amperes
Capacitances (Grounded Filament):
Input 12.5 pf
Output 4.7 pf
Feed-Through 0.12 pf

Base 5-pin special
Socket Johnson 122-275
Max. Base-Seal Temp. 170 °C.
Max. Envelope Temp 225 °C
Max. Height 5.962 inches
Max. Diameter 3.422 inches
Net Weight 6.7 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 5.0 volts
Current 14.5 amperes
Capacitances (Grounded Filament):
Input 12.5 pf
Output 4.5 pf
Feed-Through 0.12 pf

Base EIA A5-97
Socket Eimac SK-400
Max. Base-Seal Temp. 170 °C.
Max. Envelope Temp 225 °C
Max. Height 6.375 inches
Max. Diameter 3.562 inches
Net Weight 9 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss (watts)	Typical Operation: 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
Voltage 7.5 volts
Current 20.0 to 22.7 amperes
Capacitances (Grounded Filament):
Input 23.8 to 32.4 pf
Output 6.8 to 9.4 pf
Feed-Through 0.35 pf
Base 5-pin metal shell
Socket Eimac SK-500
Max. Base-Seal Temp. 150 °C.
Max. Envelope Temp. 225 °C.
Max. Height 9.63 inches
Max. Diameter 5.25 inches
Net Weight 1.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
Voltage 6.0 volts
Current 2.6 to 3.1 amperes
Capacitances (Grounded Cathode):
Input 25 to 33 pf
Output 3.5 to 4.5 pf
Feed-Through 0.06 pf
Base Special, breechblock
Socket Eimac SK-700 series
Maximum Seal Temp. 250 °C
Max. Anode-Core Temp. 250 °C
Max. Height 2.5 inches
Max. Diameter 0.894 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation
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	** 2500	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
Heater:
Voltage 26.5 volts
Current 0.45 to 0.57 amperes
Capacitances (Grounded Cathode):
Input 28.7 to 36.2 pf
Output 4.0 to 5.0 pf
Feed-Through 0.065 pf
Base Coaxial
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 1.805 inches
Max. Diameter 1.085 inches

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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

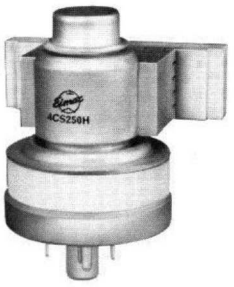
Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 2.6 amperes
Capacitances (Grounded Cathode):
Input 16.5 pf
Output 5.0 pf
Feed-Through 0.04 pf
Base Special 9-pin, JEDEC B8-236
Socket Eimac SK-600 Series
Max. Envelope Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 2.445 inches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

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 2000	200 250	0.195 0.250	5.0 2.9	112 390
AB_1	Radio-Frequency Linear Amplifier	2000	250	250	12	2.0	1500	350	0.250	—	215

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 11/16" x 3/4". Thermal design should insure that for maximum expected anode dissipation, heat flow through the berylium oxide wafer will be high enough to dissipate that power with no more than 225°C temperature at the interface between anode and berylium 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 AB_1 linear service. They have high transconductance and produce full output with extremely low drive power.

PLATE DISSIPATION 250 watts
COOLING Conduction

CHARACTERISTICS

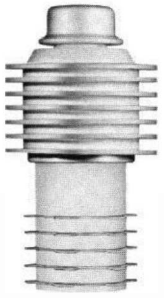
Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 3.6 amps (max)
Capacitances (Grounded Cathode):
Input 26.2 pf(max)
Output 6.0 pf(max)
Feed-Through 0.05 pf

Base Special 9-pin
Socket SK-600
Max. Seal Temp. 250 °C
Max. Height 2.4 inches
Net Weight 4 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Screen Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Outp Powe (watt
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 norizontally-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
Heater: **4CX125C** **4CX125F**
Voltage 6.0 2.65 volts
Current 2.6 to 3.1 .59 to .70 amps
Capacitances (Grounded Cathode):
Input 25 to 33 pf
Output 3.5 to 4.5 pf
Feed-Through 0.06 pf

Base Special, breechblock
Socket Eimac SK-700 series
Max. Seal Temp. 250 °C
Max. Anode-Core Temp. 250 °C
Max. Height 2.50 inches
Max. Diameter 1.25 inches
Net Weight 3.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Screen Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Outp Pow (wat
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
Heater:
Voltage 6.3 volts
Current 2.26 amps (max)
Capacitances:
Input 36.2 pf(max)
Output 5.0 pf(max)
Feed-Through 0.065 pf

Base Coaxial
Socket Erie 2948-000
Max. Seal Temp. 250 °C
Max. Height 1.95 inches
Max. Diameter 1.31 inches
Net Weight 2.2 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Screen Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Outpu Powe (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
Heater:
Voltage 26.5 volts
Current 0.45 to 0.57 amperes
Capacitances:
Input 28.7 to 36.2 pf
Output 4.0 to 5.0 pf
Feed-Through .065 pf

Base Coaxial
Socket Erie 2948-000
Max. Seal Temp. 250 °C
Max. Height 1.95 inches
Max. Diameter 1.31 inches
Net Weight 2.2 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Screen Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Outp Pow (wat
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
Heater: **4X150A** **4X150D**
Voltage 6.0 26.5 volts
Current 2.3 to 2.9 0.50 to 0.62 amps
Capacitances (Grounded Cathode):
Input 14.5 to 17.0 pf
Output 4.0 to 4.8 pf
Feed-Through 0.05 pf

Base 9-pin, special
Socket Eimac SK-600 series
Max. Base-Seal Temp. 175 °C
Max. Anode-Core Temp. 250 °C
Max. Height 2.404 inches
Max. Diameter 1.640 inches
Net Weight 4 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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_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	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
Heater:
Voltage 2.5 volts
Current 6.2 to 7.3 amperes
Capacitances (Grounded Cathode):
Input 25.0 to 29.0 pf
Output 4.0 to 4.9 pf
Feed-Through 0.05 pf

Base Coaxial
Max. Seal & Anode-Core Temp. 175 °C
Max. Height 2.750 inches
Max. Diameter 1.635 inches
Net Weight 6 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 4CX300A 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
Heater: **4X150R** **4X150S**
Voltage 6.0 26.5 volts
Current 2.4 to 3.0 0.56 to 0.68 amps
Capacitances (Grounded Cathode):
Input 16.25 to 18.75 pf
Output 4.0 to 4.8 pf
Feed-Through 0.06 pf

Base 9-pin, special
Socket Eimac SK-600 series
Max. Base Seal Temp. 175 °C
Max. Anode Core Temp. 250 °C
Max. Height 2.404 inches
Max. Diameter 1.640 inches
Net Weight 4 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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_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	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
Heater: **4CX250B** **4CX250F**
Voltage 6.0 26.5 volts
Current 2.3 to 2.9 0.5 to 0.62 amps
Capacitances (Grounded Cathode):
Input 14.2 to 17.2 pf
Output 4.0 to 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: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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_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

*Two tubes.

TETRODES

EXTERNAL ANODE ■ FORCED-AIR COOLED

8621/4CX250FG

The 4CX250F/G 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:
Voltage 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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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:
Voltage 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: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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	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:
Voltage 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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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** **4CX250M**
Voltage 6.0 26.5 volts
Current 2.3 to 3.0 0.53 to 0.68 amps
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: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Screen Voltage (volts)	Plate Current (amp)	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 250 watts
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 2.3 to 3.0 amperes
Capacitances (Grounded Grid):
Input 14.5 to 19.0 pf
Output 3.9 to 4.1 pf
Feed-Through 0.01 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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 4X150 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 300 watts
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 2.6 to 3.1 amperes
Capacitances (Grounded Cathode):
Input 25 to 33 pf
Output 3.5 to 4.5 pf
Feed-Through 0.06 pf

Base Special, breechblock
Socket Eimac SK-700 series
Max. Seal Temp. 225 °C
Max. Anode Core Temp. 250 °C
Max. Height 2.5 inches
Max. Diameter 1.65 inches
Net Weight 4 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 400 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 3.00 to 3.85 amperes
Capacitances (Grounded Cathode):
Input 30.0 to 38.0 pf
Output 3.9 to 5.0 pf
Feed-Through 0.07 pf

Base Special, breechblock
Socket Eimac SK-700 series
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 2.5 inches
Max. Diameter 1.65 inches
Net Weight 4 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 See Note
FREQUENCY FOR MAXIMUM RATINGS 500 MHz
COOLING Conduction

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 13.5 volts
Current 1.3 amperes
Capacitances (Grounded Cathode):
Input 16.0 pf
Output 7.0 pf
Feed-Through 0.01 pf

Base 11-pin
Socket Mycalex CP464-2
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 2.26 inches
Max. Diameter 1.436 inches
Net Weight 2 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Typical Operation: 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
Heater:
- Voltage 13.5 volts
- Current 1.3 amperes

Capacitances:
- Input 16.0 pf
- Output 7.0 pf
- Feed-Through 0.01 pf

Base 11-pin
Socket Mycalex CP464-2
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height
- 8121 2.196 inches
- 8122 2.260 inches

Max. Diameter
- 8121 1.75 inches
- 8122 1.640 inches

Net Weight 3 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-AB_1 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
Heater: **4CX350A** **4CX350F**
- Voltage 6.0 26.5 volts
- Current 2.9 to 3.6 0.66 to 0.81 amps

Capacitances (Grounded Cathode):
- Input 22.2 to 26.2 pf
- Output 5.0 to 6.0 pf
- Feed-Through 0.05 pf

Base Special, breechblock
Socket Eimac SK-600 Series
Max. Seal Temp. 250 °C
Max. Anode-Core Temp. 250 °C
Max. Height 2.46 inches
Max. Diameter 1.64 inches
Net Weight 4 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater: 4CX600B 4CX600F
- Voltage 6.0 26.5 volts
- Current 4.3 0.93 amperes

Capacitances (Grounded Filament):
- Input 42 to 48 pf
- Output 5.0 to 6.0 pf
- Feed-Through 0.20 pf

Base Special
Max. Seal Temp. 250 °C
Max. Height 2.5 inches
Max. Diameter 3.0 inches
Net Weight 7 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Heater:
- Voltage 6.0 volts
- Current 5.4 amperes

Capacitances:
- Input 50.0 pf
- Outpput 6.3 pf
- Feed-Through 0.2 pf(max)

Base Special 9-pin-B8-236
Socket Special
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 2.70 inches
Max. Diameter 2.08 inches
Net Weight 7.7 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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	.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-AB_1 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 1000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
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. Anode-Core Temp. 250 °C
Max. Height 4.8 inches
Max. Diameter 3.37 inches
Net Weight 27 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 solid-ring screen terminal. This terminal surface improves isolation between input and output circuits to a marked degree and insures stable UHF operation as a class-AB_1 amplifier.

PLATE DISSIPATION 1000 watts
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Voltage 6.0 volts
Current 8.1 to 9.9 amperes
Capacitances (Grounded Cathode):
Input 84 pf
Output 12 pf
Feed-Through 0.02 pf

Base Special, ring and breechblock
Socket SK-820
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 4.75 inches
Max. Diameter 3.36 inches
Net Weight 28 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 1500 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 38 to 43 amperes
Capacitances (Grounded Filament):
Input 68.0 to 78.0 pf
Output 10.5 to 14.5 pf
Feed-Through 0.4 pf (max)

Base Breechlock
Socket SK-831
Max. Seal Temp. 250 °C
Max. Envelope Temp. 250 °C
Max. Anode Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 4.825 inches
Max. Diameter 3.370 inches

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 1500 watts
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 11 amperes
Capacitances (Grounded Cathode):
Input 88 pf (max)
Output 12.8 pf (max)
Feed-Through 0.3 pf (max)

Base Special
Socket SD-800 Series
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 4.8 inches
Max. Diameter 3.37 inches
Net Weight 27 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-AB_1 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
Voltage 9.0 volts
Current 43.5 amperes
Capacitances (Grounded Filament):
Input 140 pf
Output 14.5 pf
Feed-Through 1.4 pf (max)

Base Special, ring and breechblock
Socket Eimac SK-1400
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 7.90 inches
Max. Diameter 4.63 inches
Net Weight 5.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-AB_1 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
Voltage 7.5 volts
Current 73 to 78 amperes
Capacitances (Grounded Filament):
Input 108 to 122 pf
Output 18.0 to 23.0 pf
Feed-Through 1.0 pf

Base Special, concentric
Socket Eimac SK-300A
Max. Seal 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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 7.5 volts
Current 100 amperes

Base Coaxial
Socket Eimac SK-300 or SK-300A
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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 7.5 volts
Current 73 to 78 amperes
Capacitances (Grounded Filament):
Input 108 to 122 pf
Output 18.0 to 23.0 pf
Feed-Through 1.0 pf

Base Special, concentric
Socket Eimac SK-300A
Max. Seal 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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 / 4CX10,000D

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
Voltage 7.5 volts
Current 73 to 78 amperes
Capacitances (Grounded Filament):
Input 115 pf
Output 21 pf
Feed-through 1.0 pf

Base Special, concentric
Socket Eimac SK-300A
Max. Seal Temp. 250 °C
Max. Anode-Core Temp. 250 °C
Max. Height 9.13 inches
Max. Diameter 7.05 inches
Net Weight 12.2 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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_1	Radio-Frequency Linear Power Amplifier	7500	4.00	12,000	250	75	7500	1500	3.33	0	15,950
C	Plate-Modulated rf 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 4CX10,000D 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
Voltage 6.3 volts
Current 152 to 168 amperes
Capacitances (Grounded Filament):
Input 148.5 to 161.5 pf
Output 22.0 to 27.0 pf
Feed-Through 2.0 pf

Base Special, concentric
Socket Eimac SK-300A
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 9.44 inches
Max. Diameter 7.58 inches
Net Weight 12.8 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 rf 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
Voltage 7.5 volts
Current 153 amperes

Base Coaxial
Socket Eimac SK-300, or SK-300A
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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 10.0 volts
Current 300 amperes
Capacitances (Grounded Filament):
Input 465 pf
Output 55 pf
Feed-Through 2.45 pf

Base Special, concentric rings
Socket Eimac SK-1500
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 17.0 inches
Max. Diameter 9.75 inches
Net Weight 50 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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_1	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 rf Power Amplifier	14,000	15.0	23,000	1750	500	12,000	750	5.40	125	55,000

*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 500 watts
FREQUENCY FOR MAXIMUM RATINGS 120 MHz — class-C CW; 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: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Screen Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
B_{TV}	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 800 watts
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 Special
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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Screen Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Output Power (watts)
AB_1	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 2000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 MHz
COOLING Water and Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
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: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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	2000	12	0	3000	325	1.75*	0	3360*
AB_1	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 12,000 watts
FREQUENCY FOR MAXIMUM RATINGS 30 MHz
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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Screen Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Output Power (watts)
AB_1	Audio-Frequency Power Amplifier and Modulator	7500	4.00	12,000	250	75	7500	1500	6.66*	0	31,900*
AB_1	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
Voltage 6.3 volts
Current 160 amperes
Capacitances (Grounded Filament):
Input 155 pf
Output 24 pf
Feed-Through
Less than 2.0 pf

Base Coaxial
Socket Eimac SK-300, or SK-300A
Max. Envelope Temp. 250 °C
Max. Height 12.6 inches
Max. Diameter 4.6 inches
Net Weight 13.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 12 volts
Current 220 amperes
Capacitances (Grounded Filament):
Input 340 pf
Output 53 pf
Feed-Through 0.7 pf

Base Special
Socket SK-2050
Coolant Jacket SK-2000 Series
Max. Seal Temp. 250 °C
Max. Height 13.0 inches
Max. Diameter 7.75 inches
Net Weight 35 pounds

*Shown with SK-2050 water jacket.

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 10.0 volts
Current 310 amps (max)
Capacitances (Grounded Filament):
Input 470 pf
Output 60 pf (max)
Feed-Through 3.2 pf

Base Special
Socket SK-1500 or 1510
Max. Seal Temp. 250 °C
Max. Height 18.0 inches
Max. Diameter 8.0 inches
Net Weight 60 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 16 volts
Current 230 amps (max)
Capacitances:
Input 400 pf
Output 60 pf
Feed-Through 0.9 pf

Base Special
Socket SK-2000 Series
Jacket SK-2100
Max. Seal Temp. 250 °C
Max. Height 14.5 inches
Max. Diameter 9.5 inches
Net Weight 38 pounds

*Shown with SK-2100 water jacket.

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 12.0 volts
Current 640 amperes
Capacitances (Grounded Filament):
Input 775 pf
Output 130 pf
Feed-Through 6.0 pf

Base Special
Socket Special
Max. Seal Temp. 200 °C
Max. Height 29.5 inches
Max. Diameter 13 inches
Net Weight 100 pounds

*Shown with SK-1720 water jacket.

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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

*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
Heater:
Voltage 6.0 volts
Current 2.3 to 2.9 amperes
Capacitances (Grounded Cathode):
Input 14.2 to 17.2 pf
Output 4.0 to 5.0 pf
Feed-Through 0.06 pf

Base 9-pin, special
Socket Eimac SK-600 series
Max. Seal Temp. 175 °C
Max. Height 3.407 inches
Max. Diameter 2.126 inches
Net Weight 6 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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	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
Filament: Thoriated tungsten
Voltage 10 volts
Current 25 amperes

Capacitances (Grounded Grid):
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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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

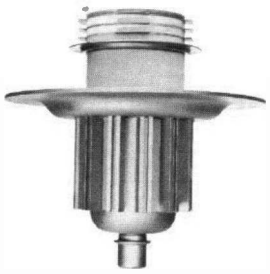
Cathode: Oxide coated, unipotential
Heater:
Voltage 6.0 volts
Current 11.0 amps (max)
Capacitances (Grounded Cathode):
Input 88 pf
Output 12.8 pf
Feed-Through 0.03 pf

Base Special
Socket SK-800 Series
Max. Seal Temp. 250 °C
Max. Height 5.35 inches
Max. Diameter 3.35 inches
Net Weight 27 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-AB_1 service.

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

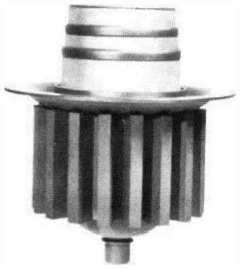
CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 10.0 volts
Current 43.5 to 48.5 amperes
Capacitances (Grounded Filament):
Input 120 to 140 pf
Output 10.5 to 14.5 pf
Feed-Through 1.4 pf

Base Special, ring and breechblock
Socket Eimac SK-1490
Max. Seal Temp. 250 °C
Max. Height 7.983 inches
Max. Diameter 7.016 inches
Net Weight 7.0 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-AB_1 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

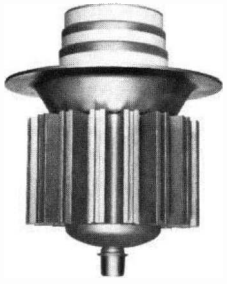
CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 73 to 78 amperes
Capacitances (Grounded Filament):
Input 108 to 122 pf
Output 18.0 to 23.0 pf
Feed-Through 1.0 pf

Base Special, concentric
Socket Eimac SK-310
Max. Seal Temp. 250 °C
Max. Height 9.125 inches
Max. Diameter 7.75 inches
Net Weight 21 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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-AB_1 circuits.

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

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 6.3 volts
Current 152 to 168 amperes
Capacitances (Grounded Filament):
Input 158 to 172 pf
Output 22.0 to 27.0 pf
Feed-Through 2.0 pf

Base Special, concentric
Socket Eimac SK-310
Max. Seal Temp. 250 °C
Max. Height 9.125 inches
Max. Diameter 7.88 inches
Net Weight 24 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 AB 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
Voltage 12 volts
Current 220 amperes
Capacitances:
Input 340 pf
Output 53 pf
Feed-Through 0.7 pf

Base Special
Socket SK-2000 Series
Boiler BR-700
Max. Seal Temp. 250 °C
Max. Anode Flange Temp. 200 °C
Max. Height 13.0 inches
Max. Diameter 7.75 inches
Net Weight 35 pounds

* Shown with BR-700 boiler.

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 10.0 volts
Current 300 amperes
Capacitances (Grounded Filament):
Input 440 pf
Output 55 pf
Feed-Through 2.3 pf

Base Coaxial
Socket Eimac SK-1500 or SK-1510
Max. Envelope Temp. 250 °C
Max. Height (In BR-320 Boiler) 19.3 inches
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: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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	11,000 (Carrier Condition)	750	9.1	1000	82,000
AB_1	Audio-Frequency Amplifier or Modulator	15,000	15.0	75,000	1750	500	11,000 (Two Tubes)	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
Voltage 10.0 volts
Current 300 amperes
Capacitances (Grounded Filament):
Input 430 uufd
Output 45 uufd
Feed-Through 2.3 uufd

Base Special concentric rings
Socket Eimac SK-1510
Max. Seal Temp. 250 °C
Max. Height 17.0 inches
Max. Diameter 10.0 inches
Net Weight 95 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 16 volts
Current 230 amperes
Capacitances (Grounded Cathode):
Input 400 pf
Output 60 pf
Feed-Through 0.9 pf

Base Special
Socket SK-2000 Series
Boiler BR-800
Max. Seal Temp. 250 °C
Max. Height 14.5 inches
Max. Diameter 9.5 inches
Net Weight 38 pounds

* Shown with BR-800 boiler.

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 12 volts
Current 660 amperes
Capacitances (Grounded Cathode):
Input 800 pf (max)
Output 136 pf (max)
Feed-Through 8.0 pf

Base Special
Socket BR-605 Boiler
Max. Seal Temp. 200 °C
Max. Anode Flange Temp. 130 °C
Max. Height 28.02 inches
Max. Dia. 15.062 inches
Net Weight 180 pounds

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

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 5.0 volts
Current 7.0 to 8.0 amperes
Capacitances (Grounded Filament):
Input 8.7 to 12.3 pf
Output 3.5 to 5.9 pf
Feed-Through 0.1 pf

Base 7-pin, metal shell
Socket Johnson 122-237
Max. Seal Temp. 225 °C
Max. Height 6.188 inches
Max. Diameter 2.750 inches
Net Weight 6 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 5.0 volts
Current 14.5 amperes
Capacitances:
Input 15.1 pf
Output 9.8 pf
Feed-Through 0.06 pf

Base 5-pin metal shell
Socket Johnson 122-275
Max. Height 6.63 inches
Max. Diameter 3.56 inches

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 6.0 volts
Current 3.2 amperes
Capacitances:
Input 7.5 pf
Output 4.2 pf
Feed-Through 0.06 pf

Base 7-pin
Socket Johnson 122-101
Max. Height 4.38 inches
Max. Diameter 2.38 inches

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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
Voltage 10.0 volts
Current 10.2 amperes
Capacitances (Grounded Cathode):
Input 19.0 pf (max)
Output 12.0 pf (max)
Feed-Through 0.10 pf

Base 5-pin
Socket SK-410
Max. Seal Temp. 200 °C
Max. Height 7.00 inches
Max. Diameter 3.56 inches
Net Weight 11 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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	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 AB_1 linear RF amplifier service.

PLATE DISSIPATION 1000 watts
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
- Voltage 6.0 volts
- Current 8.2 amperes

Capacitances:
- Input 42 pf
- Output 21 pf
- Feed-Through 0.09 pf

Base 7-pin
Socket Eimac 184
Max. Seal Temp. 175 °C
Max. Height 5.125 inches
Max. Diameter 4.032 inches
Net Weight 3.0 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 AB_1 linear RF amplifier service.

PLATE DISSIPATION 1000 watts
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
- Voltage 6.0 volts
- Current 8.2 amperes

Capacitances:
- Input 42 pf
- Output 21 pf
- Feed-Through 0.09 pf

Base 7-pin
Socket Eimac 184
Max. Seal Temp. 250 °C
Max. Height 5.125 inches
Max. Diameter 4.032 inches
Net Weight 3.0 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 AB_1 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 AB_2 and Class B service.

PLATE DISSIPATION 1000 watts
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
- Voltage 6.0 volts
- Current 8.2 amperes

Capacitances:
- Input 42 pf
- Output 20 pf
- Feed-Through 0.09 pf

Base 7-pin
Socket Eimac 209A
Max. Seal Temp. 250 °C
Max. Height 4.75 inches
Max. Diameter 3.53 inches
Net Weight 2.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 AB_1 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
- Voltage 5.0 volts
- Current 43 amperes (max)

Capacitances (Grounded Filament):
- Input 78 pf (max)
- Output 18.5 pf (max)
- Feed-Through 0.25 pf

Base Special
Socket SK-840
Max. Seal Temp. 250 °C
Max. Anode Core Temp. 250 °C
Max. Height 5.0 inches
Max. Diameter 3.4 inches
Net Weight 30 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 intermodulation distortion characteristics make it especially suitable for single sideband service.

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

CHARACTERISTICS

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

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 AB_1 amplifier applications.

PLATE DISSIPATION 3000 watts
COOLING Forced Air

CHARACTERISTICS

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

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 AB_1 amplifier applications.

PLATE DISSIPATION 5000 watts
COOLING Forced Air

CHARACTERISTICS

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

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Supp. Diss. (watts)	Screen Diss. (watts)	Grid Diss. (watts)	Typical Operation: 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 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

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

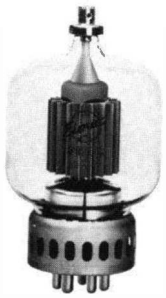
Filament: Thoriated tungsten	
Voltage	7.5 volts
Current	20.0 to 22.7 amperes
Capacitances (Grounded Cathode):	
Input	23.8 to 32.4 uufd
Output	6.8 to 9.4 uufd
Feed-through	0.35 uufd
Base	5-pin metal shell
Socket	Eimac SK-500
Max. Base-Seal Temp.	150 °C
Max. Plate-Seal Temp.	200 °C
Maximum Length	9.63 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 CAP. pF	BYPASS CAPACITOR VOLTAGE DCWV	BYPASS CAPACITOR ELEMENT BYPASSED	GROUNDED CONTACTS	CHIMNEY
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-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.						
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
* Body, contacts, & retainer supplied separately; no bypass capacitor. † Low inductance version.						

SOCKETS AND ACCESSORIES

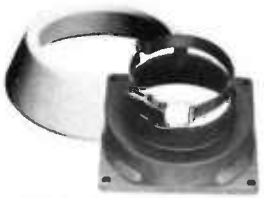
SK-604

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.

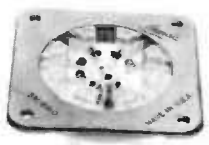
SK-605

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

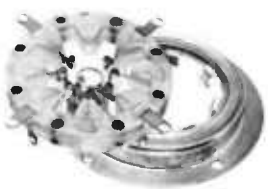


SK-626 SK-636B



SK-640

SK-606



SK-650 SK-655

SK-626

SK-700

SK-606

SK-740

SK-760

AIR-SYSTEM SOCKET	TUBE	BYPASS CAPACITOR CAP. pF	VOLTAGE DCWV	ELEMENT BYPASSED	GROUNDED CONTACTS	CHIMNEY
SK-600A* SK-602A*	4X150A 4X150D 4X150R 4X150S 4CX250B 4CX250F 4CX250FG 4CX250R 4CX350A 4CX350F 7609	2700	1000	screen	none	SK-606
SK-610A*					cath.	
	4W300B					none
* Bypass capacitor is encapsulated for moisture resistance.						
SK-620 SK-620A*	4X150A 4X150D 4X150R 4X150S 4CX250B 4CX250F 4CX250FG 4CX250R 4CX350A 4CX350F 7609	1100	1000	screen	none	SK-626 SK-636B†
SK-621		525	500	cathode	none	
SK-630 SK-630A*		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*†					1 htr & cath.	
SK-712A*†					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 4CX300A 4CX300Y	none			none	integral
SK-770		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 4CX1500B 4CW2000A†	1500	400	screen	none	SK-806
SK-810B SK-890B*					1 htr & cath.	
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 SK-870	3CX1000A7	none none			none gl	SK-816

* 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* SK-1510† SK-1511‡	4CX35,000C 4CW100,000D 4CV100,000C	none			none	none

* 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 4CW250,000A 4CW250,000V	Filament connector (two required)
SK-1712		Control grid connector
SK-1720	4CW250,000A/V	Water jacket
SK-1900	Y-398 Y-401	BeO insulator disc, attaches to anode of tube for conduction cooling applications.
SK-1910	4CS250HA	BeO block, attaches to anode of tube for conduction cooling applications.
SK-2000 series	4CV50,000E 4CW50,000E 4CW100,000E	


SK-800B

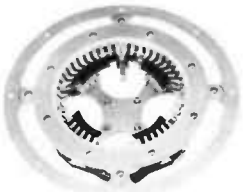

SK-806


SK-900


SK-906


SK-1300


SK-1306


SK-1400A


SK-1406


SK-1500

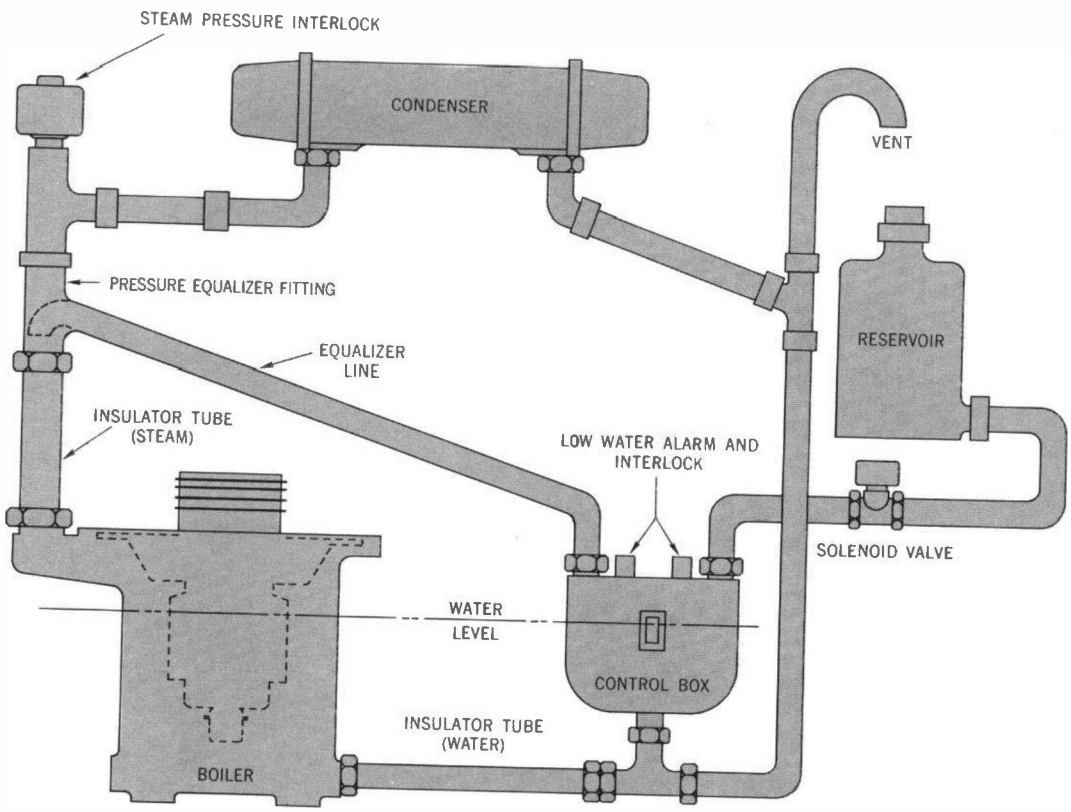
CUSTOM SOCKET DESIGN

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 Eimac 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.

SCHEMATIC 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	—	—	—	—	AD-300
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	—	1⅜" 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.

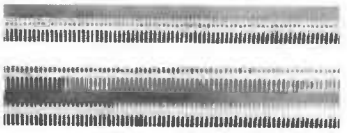
TYPE *	Length	Dia.	Hole Dia.
HR-1	11/16"	1/2"	.052"
HR-2	11/16"	1/2"	.062"
HR-3	11/16"	1/2"	.072"
HR-4	7/8"	3/4"	.102"
HR-5	7/8"	3/4"	.127"
HR-6	7/8"	3/4"	.367"
HR-7	1-11/32"	1-3/8"	.127"
HR-8	1-11/32"	1-3/8"	.575"
HR-9	4-11/32"	1-3/8"	.569"
HR-10	1-11/32"	1-3/8"	.510"

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	.....

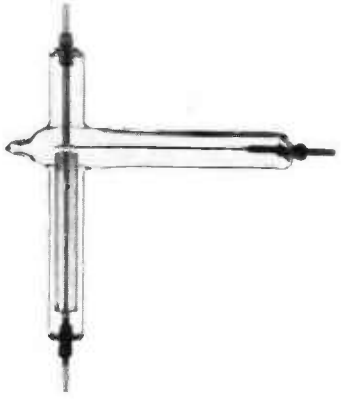
*For marking per MIL-STD-130B add prefix letter "M" to the part number for connectors HR-4 through HR-10. Note HR-1 through HR-3 are too small to permit marking.

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.

Eimac will be glad to furnish additional information on the products listed in this catalog. Simply note your product interest on a reply card and mail. Prompt response is assured.

Date ______________________

Please send me further information on the following Eimac products:

____

My application is ______________________________

Special requirements ____________________________

Name ____

Title or Position _________________________________

Company _____________________________________

Address ______________________________________

____

EIMAC division of varian 301 INDUSTRIAL WAY • SAN CARLOS, CALIFORNIA

Date ______________________

Please send me further information on the following Eimac products:

____

My application is ______________________________

Special requirements ____________________________

Name ____

Title or Position _________________________________

Company _____________________________________

Address ______________________________________

____

EIMAC division of varian 301 INDUSTRIAL WAY • SAN CARLOS, CALIFORNIA

Date ______________________

Please send me further information on the following Eimac products:

____

My application is ______________________________

Special requirements ____________________________

Name ____

Title or Position _________________________________

Company _____________________________________

Address ______________________________________

____

EIMAC division of varian 301 INDUSTRIAL WAY • SAN CARLOS

BUSINESS REPLY MAIL
No postage stamp necessary if mailed in the United States

FIRST CLASS
PERMIT No. 103
San Carlos, Calif.

POSTAGE WILL BE PAID BY—

EIMAC division of varian
301 INDUSTRIAL WAY
SAN CARLOS, CALIFORNIA 94070

BUSINESS REPLY MAIL
No postage stamp necessary if mailed in the United States

FIRST CLASS
PERMIT No. 103
San Carlos, Calif.

POSTAGE WILL BE PAID BY—

EIMAC division of varian
301 INDUSTRIAL WAY
SAN CARLOS, CALIFORNIA 94070

BUSINESS REPLY MAIL
No postage stamp necessary if mailed in the United States

FIRST CLASS
PERMIT No. 103
San Carlos, Calif.

POSTAGE WILL BE PAID BY—

EIMAC division of varian
301 INDUSTRIAL WAY
SAN CARLOS, CALIFORNIA 94070

FACTORY LOCATIONS

EIMAC division of Varian
301 Industrial Way
San Carlos, California 94070
Telephone: (415) 592-1221
TWX: 910-376-4893

EIMAC division of Varian
1678 South Pioneer Road
Salt Lake City, Utah 84104
Telephone: (801) 487-7561

FIELD SALES OFFICES

ATLANTA
3110 Maple Drive N.E.
Suite 203
Atlanta, Georgia 30305
Telephone: (404) 261-4574
TWX: 810-751-8369

ALBUQUERQUE
9000 Menual Boulevard NE
Albuquerque, New Mexico 87112
Telephone: (505) 296-1248

BOSTON
400 Wyman Street
Waltham, Massachusetts 02154
Telephone: (617) 891-4560
TWX: 710-324-0688

CHICAGO
Executive Plaza Office Bldg.
205 West Touhy Avenue
Park Ridge, Illinois 60068
Telephone: (312) 825-6686
TWX: 910-253-1824

DALLAS
First Bank & Trust Building
P.O. Box 689
811 South Central Expressway
Richardson, Texas 75081
Telephone: (214) 235-2385
TWX: 910-867-4712

DAYTON
Southmoor Building
10 Southmoor Circle
Dayton, Ohio 45429
Telephone: (513) 298-7318
TWX: 810-459-1924

LONG ISLAND
Forte Suffolk Office Center
900 Walt Whitman Road
Melville, Long Island, New York 11746
Telephone: (516) 549-5422
TWX: 510-226-6987

LOS ANGELES
2901 Wilshire Boulevard
Santa Monica, California 90403
Telephone: (213) 828-5588
TWX: 910-343-6868

NEW YORK
25 Route 22
Springfield, New Jersey 07081
Telephone: (201) 376-6600
TWX: 710-983-4373

PHILADELPHIA
P.O. Box 256
1500 Kings Highway
Cherry Hill, New Jersey 08034
Telephone: (609) 428-6800
TWX: 710-896-0640

PHOENIX
77 West Third Avenue
Scottsdale, Arizona 85251
Telephone: (602) 947-5461
TWX: 910-950-1298

SAN FRANCISCO
4940 El Camino Real
Los Altos, California 94022
Telephone: (415) 968-7630
TWX: 910-379-6446

SYRACUSE
113 Twin Oaks Drive
Syracuse, New York 13206
Telephone: (315) 437-2568
TWX: 710-541-1524

TAMPA
314 South Missouri
Suite 205
Clearwater, Florida 33516
Telephone: (813) 446-8513
TWX: 810-866-0434

WASHINGTON
714 Church Street
Alexandria, Virginia 22314
Telephone: (703) 549-8205
TWX: 710-832-9823

INTERNATIONAL SALES OFFICES

AUSTRALIA
Varian Pty. Ltd.
38 Oxley Street
Crows Nest
Sydney, Australia
Telephone: 430-673
Telex: 790-20096

Varian Pty. Ltd.
541 St. Kilda Road
Melbourne, Australia
Telephone: 511-361

BENELUX
Varian Associates Holland N.V.
Maassluisstraat 100
P.O. Box 9158
Amsterdam, Holland
Telephone: (020) 15 94 10
Telex: 14 099

BRAZIL
Varian Industria e Comercio Ltda.
Av. Paulista, 2073-18°-conj. 1824
Sao Paulo - ZP 3, Brazil
Telephone: 80 99 27
Cable: Varian Sao Paulo

CANADA
Varian Associates of Canada, Ltd.
45 River Road
Georgetown, Ontario, Canada
Telephone: (416) 877-6901
Telex: 022-95628

FRANCE
MICROWAVE
Thomson-Varian S.A.
6 rue Mario Nikis
75 Paris 15e
France
Telephone: 783.91.00
Telex: 25 873

POWER GRID
Varian S.A.
Quartier de Courtaboeuf
Boite Postale No. 12
91 Orsay
France
Telephone: 920-8312
Telex: 27 642

GERMANY
Varian GmbH
Breitwiesenstrasse 9
7 Stuttgart-Vaihingen
Germany
Telephone: (0711) 73 20 28
Telex: 7-255614

ITALY
Varian SpA
Via Varian
10040 Leini (Torino)
Italy
Telephone: (02) 26 80 86
Telex: 21 228

JAPAN
Marubun Co., Ltd.
1, 2-Chome, Odemmacho
Nihombashi, Chuo-Ku
Tokyo, Japan
Telephone: 662-8151
Telex: 22-957
Cable: Marubun, Tokyo

SCANDINAVIA
Varian AB
Skytteholmsvagen 7D
P.O. Box 1099
Solna 1, Sweden
Telephone: (08) 82 00 30
Telex: 10 403

SWITZERLAND
Varian AG
Baarerstrasse 77
6300 Zug, Switzerland
Telephone: (042) 21 45 55
Telex: 78 841

UNITED KINGDOM AND IRELAND
Varian Associates Ltd.
Russell House
Molesey Road
Walton-on-Thames
Surrey, England
Telephone: Walton-on-Thames 2 87 66
Telex: 261 351

EIMAC division of varian

301 Industrial Way, San Carlos, California 94070

1678 South Pioneer Road, Salt Lake City, Utah 84104