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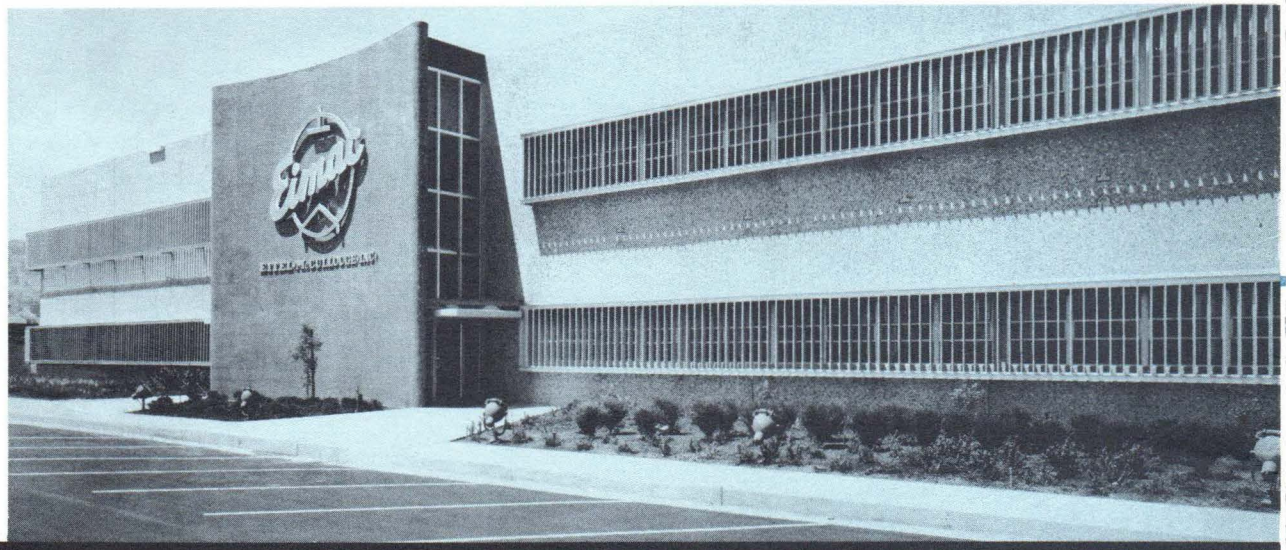
1960 QUICK REFERENCE CATALOG

AND WHAT'S NEW WITH THE ELECTRON

EITEL-McCULLOUGH, INC.



THE CORPORATE HEADQUARTERS of Eitel-McCullough, Inc. at San Carlos, California is the most modern electron-tube manufacturing facility in the United States.

1960 QUICK REFERENCE CATALOG

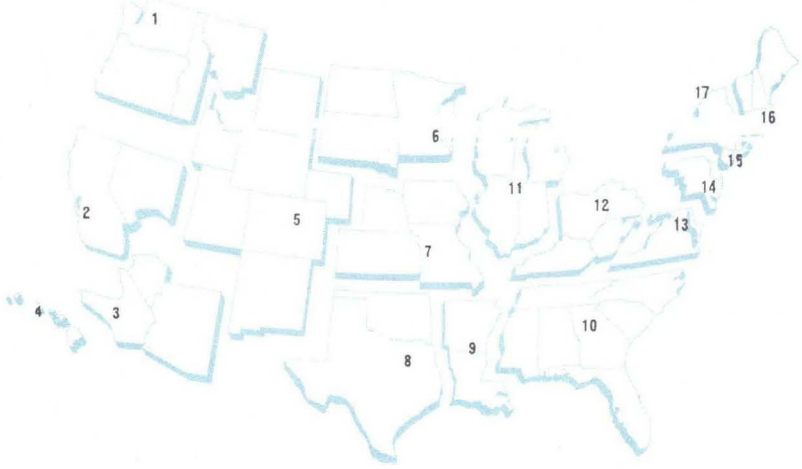
Contents

The Company

More than twenty-five years of electronics experience has made Eitel-McCullough, Inc. the world's largest manufacturer of transmitting tubes for communications, electronic systems and industrial processes.

Over 2500 people at Eimac have approximately 500,000 square feet of floor space in locations throughout the world. Eitel-McCullough, Inc. has plants in San Carlos, San Bruno and Belmont, California and Salt Lake City, Utah. An Eimac subsidiary is located in Geneva, Illinois and a marketing subsidiary operates in Geneva, Switzerland.

From pioneering early pre-World War II radar applications to providing pulsed power for radar contact with the planet Venus and the sun — Eimac is demonstrating its ability to meet the challenge of modern electronics. Eimac produces over 100 commercial tube types and many accessories.



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3—HERB BECKER COMPANY
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GENERAL INFORMATION

APPLICATION ENGINEERING SERVICES

Application engineers will help you personally with equipment design and tube application. New tube operating techniques are continually being explored, tested, and proved by Eimac engineers — whose combined knowledge and experience are at your service. For engineering assistance and application bulletins without obligation, contact:

EITEL-McCULLOUGH, INC.
Application Engineering
301 Industrial Way
San Carlos, California

OR

For local service, contact your nearest field engineering office listed on opposite page.

CONVENIENT ORDERING SERVICES

Eitel-McCullough, Inc. offers three convenient ordering services to meet your particular requirements: Distributors, Field Engineers, and our Factory Customer Services Department.

DISTRIBUTORS Located in every major city.	Carry all standard products (with exception of power and reflex klystrons, X-tubes, and associated hardware).
FIELD ENGINEERS See list on opposite page.	Provide assistance in selection and application of all standard products, special product development, and requests for quotation.
FACTORY Customer Services Department 301 Industrial Way San Carlos, California	Provides information concerning product availability, shipping instructions, and supporting services.

ALL EIMAC CATALOG ITEMS ARE AVAILABLE FOR IMMEDIATE DELIVERY

➧ Indicates new item

EIMAC PRODUCTS ARE STOCKED BY DISTRIBUTORS IN EVERY MAJOR CITY THROUGHOUT THE COUNTRY.

TUBE INDEX

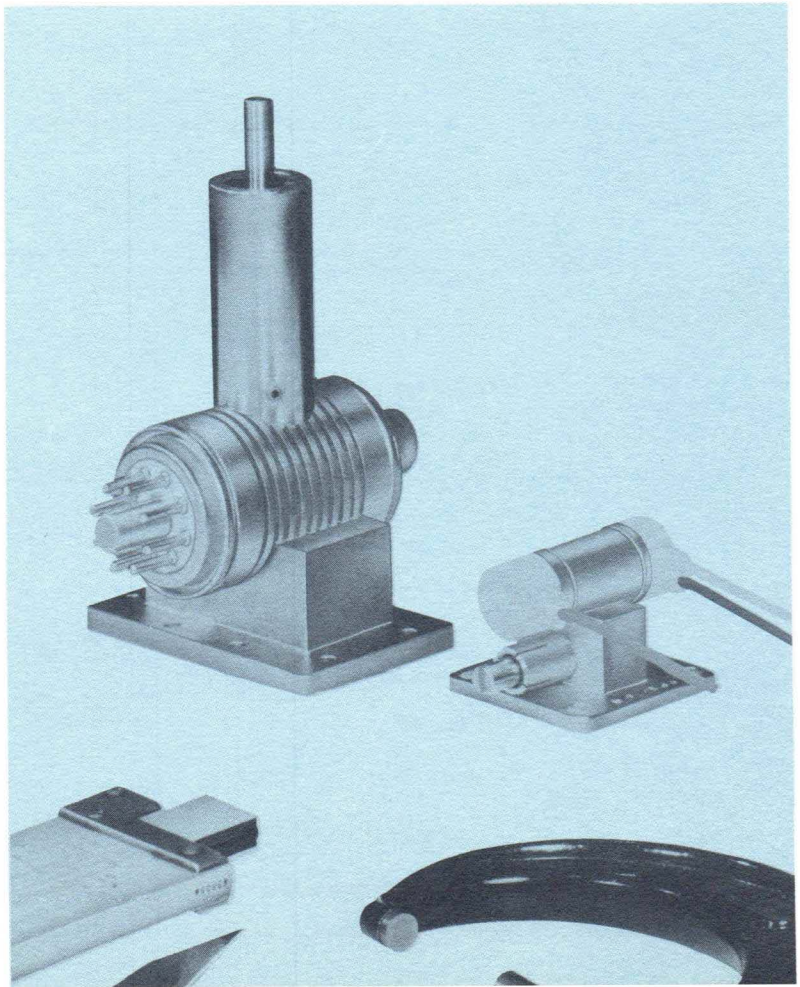
FIELD ENGINEERS WILL ASSIST YOU IN SELECTION AND APPLICATION OF ALL EIMAC PRODUCTS.

REFLEX KLYSTRONS

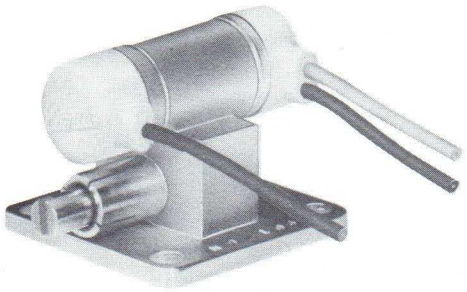
Eitel-McCullough, Inc. manufactures small, rugged ceramic-and-metal reflex klystrons which provide reliable, long-life operation at microwave frequencies. Eimac is continuing an extensive program of development on new microwave devices and modification of existing products to maintain exceptional frequency stability under severe conditions of heat—humidity—high altitude—shock—vibration—acceleration. Achieving this exceptional stability, Eimac reflex klystrons incorporate advanced stacked-ceramic construction with "dual cavity" design. This permits internal electrodes to be supported on rigid concentric cones —allowing the entire vacuum assembly to be furnace-brazed into a single ruggedized structure.

An extensive amount of electronics work is being done throughout the world in the microwave frequencies to improve existing radar and communication systems. Reflex klystrons are used as local oscillators in microwave receivers and as drivers in microwave transmitters. Eimac reflex klystrons are used in power radar, airborne altimeters, electronic test equipment, and missile and aircraft guidance systems.

▶ Indicates new item



REFLEX KLYSTRONS



1K20 series

The 1K20-series tubes are ceramic and metal, ruggedized reflex klystrons designed for local oscillator service under conditions of severe environmental extremes. Electrical connections to these tubes are completed with encapsulated flexible leads. A single screw-tuner, in a brazed-on external cavity provides a tuning rate of approximately 150 Mc per turn, with extremely low microphonics.

TUNING RANGE AND TYPICAL OUTPUT

1K20XS	**8.5 - 9.2 kMc at 75 mW**
1K20XK	**9.2 - 10.0 kMc at 75 mW**
1K20XD	**10.0 - 10.7 kMc at 75 mW**
1K20KA	**10.7 - 11.5 kMc at 40 mW**

COOLING

Conduction and Radiation

CHARACTERISTICS

Cathode: Oxide-coated, unipotential			
Heater: Voltage		6.3 volts	
Current		0.7 to 1.0 ampere	
RF Output		RG-52/U waveguide	
Net Weight		4 ounces	
Maximum Over-All Dimensions:	**XS/XK**	**XD/KA**	
Length	2.3	2.3	inches
Width	1.6	1.6	inches
Depth	1.4	1.3	inches

MAXIMUM OPERATING ENVIRONMENT

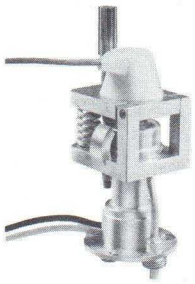
Maximum Ambient	150 °C
Maximum Altitude	No limit
Maximum Shock (11 ms)	40 g
Maximum Vibration (20-2000 cps)	10 g

MAXIMUM RATINGS

RESONATOR VOLTAGE	350 Vdc
CATHODE CURRENT	55 mAdc
REPELLER VOLTAGE	−500 Vdc

TYPICAL OPERATION

	1K20XS		**1K20XK**		**1K20XD**		**1K20KA**
Mode	5¾	5¾	5¾	5¾	5¾	5¾	5¾
Frequency	8.85	8.85	9.60	9.60	10.35	10.35	11.10 kMc
Resonator Voltage	300	350	300	350	300	350	350 Vdc
Output Power	70	90	70	90	50	75	40 mW
Cathode Current	40	50	40	50	45	55	50 mAdc
Repeller Voltage	−150	−135	−170	−155	−165	−150	.... Vdc
3-db Bandwidth	40	40	35	35	30	30	.... Mc
Modulation Sens.	1.5	1.5	1.7	1.7	2.0	2.0	.... Mc/v



1K015CA

The ceramic and metal 1K015CA is a ruggedized, internal-cavity reflex klystron designed for local oscillator service. Encapsulated leads provide electrical connections. A single screw-tuner provides a tuning rate of 100 Mc per turn and allows tuner cycling in excess of 100 cycles.

TUNING RANGE	**5.35 to 5.95 kMc**
MINIMUM OUTPUT	**70 mW**
COOLING	**Conduction**

MAXIMUM OPERATING ENVIRONMENT

Maximum Ambient	100 °C
Maximum Altitude	No limit
Maximum Shock (11 ms.)	40 g
Maximum Vibration (20 to 2000 cps)	10 g

MAXIMUM RATINGS

RESONATOR VOLTAGE	350 Vdc
CATHODE CURRENT	55 mAdc
REPELLER VOLTAGE	−500 Vdc

CHARACTERISTICS

Cathode: Oxide-coated, unipotential	
Heater: Voltage	6.3 volts
Current	0.7 to 1.0 ampere
RF Output	Miniature coaxial jack
Net Weight	4.2 ounces
Maximum Depth	1.19 inches
Maximum Width	1.32 inches
Maximum Length	3.38 inches

TYPICAL OPERATION

Mode	4¾	3¾
Frequency	5650	5650 Mc
Resonator Voltage	300	350 Vdc
Output Power	35	130 mW
Cathode Current	35	49 mAdc
Repeller Voltage	−135	−240 Vdc
3-db Bandwidth	45	45 Mc
Modulation Sens.	1600	900 kc/v

1K015CG

The 1K015CG is a waveguide-output version of the 1K015CA with identical electrical characteristics. It is a metal and ceramic, ruggedized, internal-cavity reflex klystron designed for local oscillator service.

TUNING RANGE	**5.35 to 5.95 kMc**
MINIMUM OUTPUT	**70 mW**
COOLING	**Conduction**

MAXIMUM OPERATING ENVIRONMENT

Maximum Ambient	100 °C
Maximum Altitude	No limit
Maximum Shock (11 ms.)	40 g
Maximum Vibration (20 to 2000 cps)	10 g

MAXIMUM RATINGS

RESONATOR VOLTAGE	350 Vdc
CATHODE CURRENT	55 mAdc
REPELLER VOLTAGE	−500 Vdc

CHARACTERISTICS

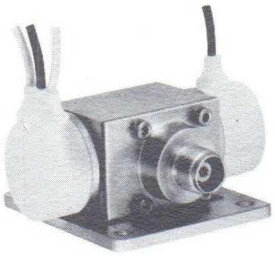
Cathode: Oxide-coated, unipotential	
Heater: Voltage	6.3 volts
Current	0.7 to 1.0 ampere
RF Output	RG-50/U waveguide
Net Weight	17.5 ounces
Maximum Depth	1.63 inches
Maximum Width	3.13 inches
Maximum Length	5.25 inches

TYPICAL OPERATION

Mode	4¾	3¾
Frequency	5650	5650 Mc
Resonator Voltage	300	350 Vdc
Output Power	35	130 mW
Cathode Current	35	49 mAdc
Repeller Voltage	−135	−240 Vdc
3-db Bandwidth	45	45 Mc
Modulation Sens.	1600	900 kc/v

APPLICATION ENGINEERS AT EIMAC WILL HELP YOU WITH PRODUCT DESIGN AND EXPERIMENTATION.

REFLEX KLYSTRONS



1K75CH

The 1K75CH is a low-noise, ceramic and metal, ruggedized, reflex klystron designed for fixed-frequency altimeter applications. When the resonator and insulated TNC connector are grounded, the tube may be operated at any altitude without flashover.

FREQUENCY 4300 ± 50 Mc
MINIMUM OUTPUT 1.0 W
COOLING Conduction

MAXIMUM OPERATING ENVIRONMENT

Maximum Ambient	125 °C
Maximum Altitude	40,000 ft
Maximum Shock (11 ms.)	15 g
Max. Vibration (20 to 2000 cps)	10 g

CHARACTERISTICS

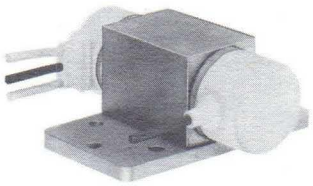
Cathode: Oxide-coated, unipotential	
Heater: Voltage	6.3 volts
Current	1.0 to 1.5 amperes
RF Output	Insulated TNC jack
Net Weight	8.5 ounces
Maximum Depth	1.13 inches
Maximum Width	2.50 inches
Maximum Length	2.51 inches

MAXIMUM RATINGS

RESONATOR VOLTAGE	850 Vdc
CATHODE CURRENT	100 mAdc
REPELLER VOLTAGE	−500 Vdc

TYPICAL OPERATION

Mode	4¾	2¾
Frequency	4300	4300 Mc
Resonator Voltage	550	750 Vdc
Output Power	0.25	1.0 W
Cathode Current	35	60 mAdc
Repeller Voltage	−150	−350 Vdc
3-db Bandwidth	60	30 Mc
Modulation Sens.	1600	160 kc/v



1K75CK

The 1K75CK is a low-noise, ceramic and metal, ruggedized, reflex klystron designed for fixed-frequency altimeter service. Encapsulated, flexible leads allow operation of this tube at any altitude without flashover.

FREQUENCY 4300 ± 50 Mc
MINIMUM OUTPUT 1.0 W
COOLING Conduction

MAXIMUM OPERATING ENVIRONMENT

Maximum Ambient	125 °C
Maximum Altitude	No limit
Maximum Shock (11 ms.)	30 g
Max. Vibration (20 to 2000 cps)	10 g

CHARACTERISTICS

Cathode: Oxide-coated, unipotential	
Heater: Voltage	6.3 volts
Current	1.0 to 1.5 amperes
RF Output	Half-height waveguide
Net Weight	8.0 ounces
Maximum Depth	1.19 inches
Maximum Width	2.73 inches
Maximum Length	2.76 inches

MAXIMUM RATINGS

RESONATOR VOLTAGE	850 Vdc
CATHODE CURRENT	100 mAdc
REPELLER VOLTAGE	−500 Vdc

TYPICAL OPERATION

Mode	4¾	2¾
Frequency	4300	4300 Mc
Resonator Voltage	550	750 Vdc
Output Power	0.25	1.0 W
Cathode Current	35	60 mAdc
Repeller Voltage	−150	−350 Vdc
3-db Bandwidth	60	30 Mc
Modulation Sens.	1600	160 kc/v

1K125CA

The 1K125CA is a low-noise ceramic and metal reflex klystron designed for use as an oscillator or transmitter in communication service. Tuner cycling in excess of 1000 cycles, with a tuning rate of 100 Mc per turn, is provided by the bellows-coupled, dielectric tuner.

TUNING RANGE 3.7 to 4.4 kMc
MINIMUM OUTPUT 1.25 W
COOLING Forced Air

MAXIMUM OPERATING ENVIRONMENT

Maximum Ambient	50 °C
Maximum Altitude	10,000 ft
Maximum Shock (1 ms.)*	80 g
Max. Vibration (120 sec. 40 cps)*	10 g

*Non-operating specification

CHARACTERISTICS

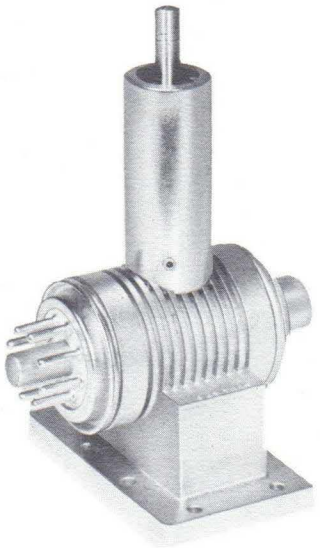
Cathode: Oxide-coated, unipotential	
Heater: Voltage	6.3 volts
Current	1.0 to 1.5 amperes
RF Output	RG-49/U waveguide
Net Weight	18 ounces
Maximum Depth	3.3 inches
Maximum Width	2.8 inches
Maximum Length	4.4 inches
Air-Flow Rate (50°C.)	10 cfm

MAXIMUM RATINGS

RESONATOR VOLTAGE	1000 Vdc
CATHODE CURRENT	110 mAdc
REPELLER VOLTAGE	−750 Vdc

TYPICAL OPERATION

Mode	2¾
Frequency	4050 Mc
Resonator Voltage	1000 Vdc
Output Power	1.6 W
Cathode Current	75 mAdc
Repeller Voltage	−275 Vdc
3-db Bandwidth	28 Mc
Modulation Sens.	310 kc/v



1K125CB

The 1K125CB is a low-noise, ceramic and metal, reflex klystron designed for use as an oscillator or transmitter in communication service. Tuner cycling in excess of 1000 cycles, with a tuning rate of 100 Mc per turn, is provided by the bellows-coupled, dielectric tuner.

TUNING RANGE 4.4 to 5.0 kMc
MINIMUM OUTPUT 1.8 W
COOLING Forced Air

MAXIMUM OPERATING ENVIRONMENT

Maximum Ambient	50 °C
Maximum Altitude	10,000 ft
Maximum Shock (1 ms.)*	80 g
Max. Vibration (120 sec. 40 cps)*	10 g

*Non-operating specification

CHARACTERISTICS

Cathode: Oxide-coated, unipotential	
Heater: Voltage	6.3 volts
Current	1.0 to 1.5 amperes
RF Output	RG-49/U waveguide
Net Weight	18 ounces
Maximum Depth	2.8 inches
Maximum Width	3.3 inches
Maximum Length	4.4 inches
Air-Flow Rate (50°C.)	10 cfm

MAXIMUM RATINGS

RESONATOR VOLTAGE	1000 Vdc
CATHODE CURRENT	110 mAdc
REPELLER VOLTAGE	−750 Vdc

TYPICAL OPERATION

Mode	3¾	2¾
Frequency	4700	4700 Mc
Resonator Voltage	800	1000 Vdc
Output Power	0.77	2.5 W
Cathode Current	55	75 mAdc
Repeller Voltage	−130	−345 Vdc
3-db Bandwidth	50	32 Mc
Modulation Sens.	700	290 kc/v

1K125CC

The 1K125CC is designed for use as an oscillator or transmitter under environmental conditions encountered in Military mobile service. The electrical characteristics of the 1K125CC are similar to those of the 1K125CB. However, the use of stricter process control provides closer modulation sensitivity and repeller voltage limits, and higher output power.

TUNING RANGE 4.4 to 5.0 kMc
MINIMUM OUTPUT 2.0 W
COOLING Forced Air

MAXIMUM OPERATING ENVIRONMENT

Maximum Ambient	50 °C
Maximum Altitude	10,000 ft
Maximum Shock (1 ms.)*	80 g
Max. Vibration (120 sec. 40 cps)*	10 g

*Non-operating specification

CHARACTERISTICS

Cathode: Oxide-coated, unipotential	
Heater: Voltage	6.3 volts
Current	1.0 to 1.5 amperes
RF Output	RG-49/U Waveguide
Net Weight	18 ounces
Maximum Depth	2.8 inches
Maximum Width	3.3 inches
Maximum Length	4.4 inches
Air Flow Rate (50°C.)	10 cfm

MAXIMUM RATINGS

RESONATOR VOLTAGE	1000 Vdc
CATHODE CURRENT	110 mAdc
REPELLER VOLTAGE	−750 Vdc

TYPICAL OPERATION

Mode	3¾	2¾
Frequency	4700	4700 Mc
Resonator Voltage	800	1000 Vdc
Output Power	0.80	2.6 W
Cathode Current	55	75 mAdc
Repeller Voltage	−130	−345 Vdc
3-db Bandwidth	50	35 Mc
Modulation Sens.	700	325 kc/v

EIMAC PRODUCTS ARE STOCKED BY DISTRIBUTORS IN EVERY MAJOR CITY THROUGHOUT THE COUNTRY.

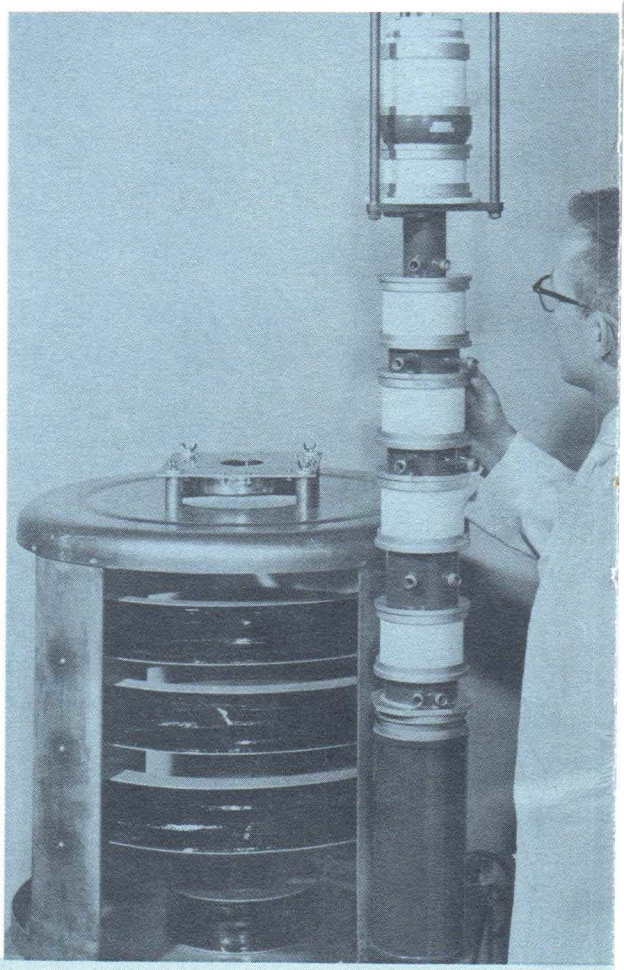
POWER KLYSTRONS

Eitel-McCullough, Inc. produces a complete line of ceramic-and-metal, magnetically-focused power-amplifier klystrons. Cavities of most Eimac power-amplifier klystrons are completed by tuning boxes outside the vacuum envelope, permitting wide tuning ranges and making it possible to load the cavities externally for broad-band applications requiring linearity that is not achievable by stagger tuning. Since all tuning is accomplished outside the vacuum envelope, no mechanical damage to the tube can result from repeated tuning operations. Eimac power klystrons employ adjustable output load couplers which make possible optimum loading at each frequency over a wide range of load VSWR. An amplifier circuit assembly consisting of a magnetic frame, focusing coils, tuning boxes, socket, and accessory components is available for each Eimac power klystron.

An outstanding feature of Eimac klystrons is the achievement of high-power gains without sacrificing beam efficiency. Under narrow band CW conditions, driving powers of one to five watts are sufficient for output powers up to 75,000 watts, and typical efficiencies range from 35 to 45 percent. The excellent life experienced with Eimac klystrons is a direct result of the clean, simple tube construction permitted by the external cavity design. A klystron life of over 20,000 hours is not uncommon as a result of the conservatively designed cathode structure and the high processing temperatures permitted by the ceramic-and-metal construction.

Many of the Eimac power klystrons incorporate the modulating anode—an original Eimac development, which provides an excellent means for amplitude or pulse modulating the amplifier without changing the beam voltage. The modulating anode also serves as a very effective protective device—either in conjunction with external circuits or when grounded through a resistor.

The ability of these tubes to conveniently and reliably generate high power at ultra-high frequencies and above has led to their widespread use throughout the world in such applications as tropo-scatter communications systems—television broadcasting—high-power radar—particle accelerators—satellite tracking stations—missile control transmitters—processing of foods, chemicals, petroleum.



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FIELD ENGINEERS WILL ASSIST YOU IN SELECTION AND APPLICATION OF ALL EIMAC PRODUCTS.

POWER KLYSTRONS

3K2500LX

The Eimac 3K2500LX is a ceramic and metal, three-cavity, magnetically focused power amplifier klystron. Its resonant cavities are completed by tuning boxes external to the tube. This design permits a wide tuning range, and allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly, Catalog Number H-114, has been designed for use with this tube.

FREQUENCY RANGE 980 - 1200 Mc
MINIMUM CW OUTPUT POWER 1000 watts
TYPICAL POWER GAIN 25 db

CHARACTERISTICS

Cathode: Unipotential, Oxide Coated
Heater:
Voltage 7.5 volts
Current 5.8 amperes
RF Connections:
Input 50-ohm Type N
Output 1 5/8 inch 50-ohm line
Net Weight (Tube): 22 pounds
Net Weight (Circuit Assembly): 267 pounds
Maximum Dimensions (Tube):
Length 26.19 inches
Diameter 5.15 inches
Maximum Dimensions (Tube and Circuit Assembly):
Length 27.22 inches
Diameter 22.22 inches
Cooling Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	7000 Vdc
D-C FOCUS ELECTRODE VOLTAGE	−100 Vdc
D-C BODY CURRENT	60 mAdc
COLLECTOR DISSIPATION	2500 W
D-C BEAM CURRENT	600 mAdc

TYPICAL OPERATION (Narrow-Band, CW Amplifier)

RF Frequency	1000	1000 Mc
Output Power	830	1320 W
Drive Power	2	2 W
D-C Beam Voltage	6000	7000 Vdc
D-C Beam Current	350	455 mAdc

3K2500SG

The Eimac 3K2500SG is a ceramic and metal, three-cavity, magnetically focused, power-amplifier klystron. Its resonant cavities are an integral part of the tube structure and are completed and tuned outside the vacuum envelope. This design allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly, Catalog Number H-113, has been designed for use with this tube to cover the specified frequency range.

FREQUENCY RANGE 1700 - 2400 Mc
MINIMUM CW OUTPUT POWER 1000 watts
TYPICAL POWER GAIN 25 db

CHARACTERISTICS

Cathode: Unipotential, Oxide Coated
Heater:
Voltage 7.5 volts
Current 5.5 amperes
RF Connections:
Input Type BNC
Output 1 5/8 inch 50-ohm line
Net Weight (Tube): 28 pounds
Net Weight (Circuit Assembly): 115 pounds
Maximum Dimensions (Tube):
Length 17.88 inches
Diameter 7.75 inches
Maximum Dimensions (Tube and Circuit Assembly):
Length 18.63 inches
Diameter 24.16 inches
Cooling Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	7000 Vdc
D-C FOCUS ELECTRODE VOLTAGE	−100 Vdc
D-C BODY CURRENT	60 mAdc
COLLECTOR DISSIPATION	2500 W
D-C BEAM CURRENT	600 mAdc

TYPICAL OPERATION (Narrow-Band, CW Amplifier)

RF Frequency	1700	2400 Mc
Output Power	1350	1300 W
Drive Power	4	4 W
D-C Beam Voltage	7000	7000 Vdc
D-C Beam Current	570	570 mAdc

3K3000LQ

The Eimac 3K3000LQ is a ceramic and metal, three-cavity, magnetically focused, power-amplifier klystron. Its resonant cavities are completed by tuning boxes external to the tube. This design permits a wide tuning range, and allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly (H-124) has been designed for use with this tube to cover the frequency range of 720 to 985 Mc. It permits operation of the klystron as a narrow-band amplifier or, with external resistive loads, as a wide-band amplifier.

FREQUENCY RANGE 610 - 985 Mc
MINIMUM CW OUTPUT POWER 2000 watts
TYPICAL POWER GAIN 25 db

CHARACTERISTICS

Cathode: Unipotential, Oxide Coated
Heater:
Voltage 5.0 volts
Current 32 amperes
RF Connections:
Input 50-ohm Type N
Output 1 5/8 inch 50-ohm line
Net Weight (Tube): 32 pounds
Net Weight (Circuit Assembly): 215 pounds
Maximum Dimensions (Tube):
Length 34.44 inches
Diameter 5.13 inches
Maximum Dimensions (Tube and Circuit Assembly):
Length 38.0 inches
Diameter 22.84 inches
Cooling Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	10,000 Vdc
D-C FOCUS ELECTRODE VOLTAGE	−500 Vdc
D-C BODY CURRENT	75 mAdc
COLLECTOR DISSIPATION	3000 W
D-C BEAM CURRENT	750 mAdc

TYPICAL OPERATION (Narrow-Band, CW Amplifier)

RF Frequency	850	850 Mc
Output Power	1050	2400 W
Drive Power	4	10 W
D-C Beam Voltage	7000	9000 Vdc
D-C Beam Current	375	600 mAdc

APPLICATION ENGINEERS AT EIMAC WILL HELP YOU WITH PRODUCT DESIGN AND EXPERIMENTATION.

POWER KLYSTRONS

3K50,000LA
3K50,000LF
3K50,000LQ

The Eimac 3K50,000LA, 3K50,000LF, and 3K50,000LQ are ceramic and metal, three-cavity, magnetically focused, power-amplifier klystrons. In television visual service they will each provide more than 12 kilowatts of peak synchronizing output power with a power gain of 20 db. The resonant cavities of these tubes are completed by external tuning boxes. This design permits wide tuning ranges and allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assemblies, Catalog Numbers H-108 and H-111 have been designed for the 3K50,000LA and 3K50,000LQ respectively.

FREQUENCY RANGES

3K50,000LA	**400 - 600 Mc**
3K50,000LF	**570 - 720 Mc**
3K50,000LQ	**720 - 985 Mc**
MINIMUM CW OUTPUT POWER	**10 kilowatts**
TYPICAL POWER GAIN	**25 db**

CHARACTERISTICS

Cathode: Unipotential,	Bombardment Heated
Heater:	
Voltage	8.0 volts
Current	40 amperes
Bombarder:	
Voltage	2100 volts
Current	0.66 ampere
RF Connections:	
Input	50-ohm Type N
Output	3 1/8 inch 50-ohm line

Mechanical Data —	"LA"	"LF"	"LQ"	
Weight (Tube)	53	51	48	pounds
Wt. (Circuit Assembly)	491	393	....	pounds
Max. Tube Dimensions:				
Length	52.87	48.37	41.17	inches
Diameter	5.13	5.13	5.13	inches
Max. Dimensions (Tube and Circuit Assembly):				
Length	55.87	51.38	44.17	inches
Diameter	26.69	27.44	26.25	inches

Cooling — Water and forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	20 kVdc
D-C FOCUS ELECTRODE VOLTAGE	—500 Vdc
D-C BODY CURRENT	150 mAdc
COLLECTOR DISSIPATION	50 kW
D-C BEAM CURRENT	2.5 Adc

TYPICAL OPERATION

	TV VISUAL	CW
Drive Power	55	17 W
Output Power	12*	10.7 kW
D-C Beam Voltage	17.2	15 kVdc
D-C Beam Current	2.15	1.65 Adc

*Peak synchronizing level.

3KM3000LA

The Eimac 3KM3000LA is a ceramic and metal, three-cavity, magnetically focused, power-amplifier klystron. It employs the Eimac modulating anode, which provides an effective means of amplitude or pulse modulating the output power, without changing beam voltage.

All tuning for this tube is accomplished outside the vacuum envelope. This allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly, Catalog Number H-120, has been designed for use with this tube.

FREQUENCY RANGE	**385 - 585 Mc**
MINIMUM CW OUTPUT POWER	**2 kilowatts**
TYPICAL POWER GAIN	**30 db**

CHARACTERISTICS

Cathode: Unipotential, Oxide Coated	
Heater:	
Voltage	5 volts
Current	32 amperes
RF Connections:	
Input	50-ohm Type N
Output	1 5/8 inch 50-ohm line
Net Weight (Tube):	46 pounds

Net Weight (Circuit Assembly):	538 pounds
Maximum Dimensions (Tube):	
Length	44.99 inches
Diameter	5.13 inches
Maximum Dimensions (Tube and Circuit Assembly):	
Length	50.75 inches
Diameter	26.31 inches
Cooling	Forced air

MAXIMUM RATINGS

CW D-C BEAM VOLTAGE	10 kVdc
PULSE D-C BEAM VOLTAGE	20 kVdc
PULSE MOD. ANODE VOLTAGE	20 kv
D-C FOCUS ELECTRODE VOLTAGE	—500 Vdc
D-C BODY CURRENT	75 mAdc
COLLECTOR DISSIPATION	3 kW
AVE. D-C BEAM CURRENT	750 mAdc
PULSE D-C BEAM CURRENT	2.8 a

TYPICAL OPERATION

	PULSE	CW
RF Frequency	425	520 Mc
Output Power	12.25	2.3 kW
Drive Power	10	2 W
D-C Beam Voltage	15	9 kVdc
D-C Beam Current	0.105	0.590 Adc
Peak Mod. Anode Voltage	15	.... kVac
Peak Beam Current	1.74	.... a

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POWER KLYSTRONS

3KM4000LT

The Eimac 3KM4000LT is a ceramic and metal, three-cavity, magnetically focused, power-amplifier klystron designed primarily for pulse applications. It employs the Eimac modulating anode, which provides an effective means of amplitude or pulse modulating the output power, without changing the beam voltage.

The external-cavity design allows a wide tuning range, and allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly, Catalog Number H-116, has been designed for use with this tube.

FREQUENCY RANGE 960 - 1215 Mc
MINIMUM PULSE OUTPUT POWER 40 kilowatts
TYPICAL POWER GAIN 32 db

CHARACTERISTICS

Cathode: Unipotential, Oxide Coated

Heater:
- Voltage 7.5 volts
- Current 5.5 amperes

RF Connections:
- Input 50-ohm Type N
- Output 1 5/8 inch 50-ohm line

Net Weight (Tube): 21 pounds

Net Weight (Circuit Assembly): 240 pounds

Maximum Dimensions (Tube):
- Length 30.47 inches
- Diameter 5.13 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 30.47 inches
- Diameter 19.0 inches

Cooling Forced air

MAXIMUM RATINGS

CW D-C BEAM VOLTAGE	8 kVdc
PULSE D-C BEAM VOLTAGE	28 kVdc
PULSE MOD. ANODE VOLTAGE	14 kv
D-C FOCUS ELECTRODE VOLTAGE	−400 Vdc
D-C BODY CURRENT	20 mAdc
COLLECTOR DISSIPATION	4 kW
PEAK BEAM CURRENT	6.0 a
AVE. D-C BEAM CURRENT	500 mAdc

TYPICAL OPERATION
(Narrow-Band Pulse Amplifier)

Peak Output Power	31.5	38.2 kw
Peak Drive Power	15	15 w
D-C Beam Voltage	24	26 kVdc
Ave. D-C Beam Current	119	133 mAdc
Peak Mod. Anode Voltage	12	13 kv
Peak Beam Current	3.75	4.2 a

3KM50,000PA

The Eimac 3KM50,000PA is a ceramic and metal, three-cavity, magnetically focused, power-amplifier klystron. It employs the Eimac modulating anode, which provides an effective means of amplitude or pulse modulating the output power without changing beam voltage.

All tuning for this tube is accomplished outside the vacuum envelope. This allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly, Catalog Number H-126, has been designed for use with this tube.

FREQUENCY RANGE 225 - 400 Mc
MINIMUM CW OUTPUT POWER 20 kilowatts
TYPICAL POWER GAIN 35 db

CHARACTERISTICS

Cathode: EMA, Unipotential

Heater:
- Voltage 7.5 volts
- Current 40 amperes

Getter:
- Voltage 1.75 volts
- Current 30 amperes

RF Connections:
- Input 50-ohm Type N
- Output 6 1/8 inch 50-ohm line

Net Weight (Tube): 163 pounds

Net Weight (Circuit Assembly): 1940 pounds

Maximum Dimensions (Tube):
- Length 81.13 inches
- Diameter 8.13 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 88.75 inches
- Diameter 51.13 inches

Cooling Liquid and Forced air

MAXIMUM RATINGS

	CW	AM
D-C BEAM VOLTAGE	23	30 kVdc
MODULATING ANODE: D-C VOLTAGE	23	17 kVdc
PEAK VOLTAGE SWING	....	±13 kVdc
D-C FOCUS ELECTRODE VOLTAGE	−500	−500 Vdc
D-C BODY CURRENT	250	250 mAdc
GETTER CURRENT (RMS OR D-C)	60	60 A
COLLECTOR DISSIPATION	60	60 kW
D-C BEAM CURRENT	2.75	2.0 Adc

TYPICAL OPERATION
(Narrow-Band, CW Amplifier)

RF Frequency	300	400 Mc
Output Power	24.4	23.1 kW
Drive Power	5	5 W
D-C Beam Voltage	23	23 kVdc
D-C Beam Current	2.6	2.6 Adc

4K50,000LQ

The Eimac 4K50,000LQ is a ceramic and metal, four-cavity, magnetically focused, power-amplifier klystron. Its resonant cavities are completed through the cylindrical ceramic windows of the klystron and all tuning is accomplished outside the vacuum envelope. This design permits a wide tuning range and allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly, Catalog Number H-101A, has been designed for use with this tube to cover the frequency range of 720 to 985 Mc.

FREQUENCY RANGE 600 - 985 Mc
MINIMUM CW OUTPUT POWER 10 kilowatts
TYPICAL POWER GAIN 55 db

CHARACTERISTICS

Cathode: Unipotential, Bombardment Heated

Filament:
- Voltage 8.0 volts
- Current 40 amperes

Bombarder:
- Voltage 2250 volts
- Current 0.71 amperes

RF Connections:
- Input 50-ohm Type N
- Output 3 1/8 inch 50-ohm line

Net Weight (Tube): 53 pounds

Net Weight (Circuit Assembly): 797 pounds

Maximum Dimensions (Tube):
- Length 46.32 inches
- Diameter 5.13 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 50.38 inches
- Diameter 27.63 inches

Cooling Water and Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	20 kVdc
D-C FOCUS ELECTRODE VOLTAGE	−500 Vdc
D-C BODY CURRENT	100 mVdc
COLLECTOR DISSIPATION	50 kW
D-C BEAM CURRENT	2.5 Adc

TYPICAL OPERATION
(CW Amplifier)

RF Frequency	900 Mc
Output Power	11.2 kW
Drive Power	0.02 W
D-C Beam Voltage	16 kVdc
D-C Beam Current	1.59 Adc

FIELD ENGINEERS WILL ASSIST YOU IN SELECTION AND APPLICATION OF ALL EIMAC PRODUCTS.

POWER KLYSTRONS

4KM3000LQ

The 4KM3000LQ is a ceramic and metal, four - gap, external - cavity, magnetically focused power-amplifier klystron employing the Eimac Modulating Anode.

This klystron is designed to operate with collector depression, thereby realizing an improvement in efficiency.

The Eimac Klystron Amplifier Circuit Assembly (H-118) has been designed for use with this tube to cover the specified frequency range. It permits operation of the klystron as a narrow-band amplifier or, with external resistive loads, as a wide-band amplifier.

FREQUENCY RANGE 710 - 985 Mc
MINIMUM CW OUTPUT POWER 2 kilowatts
TYPICAL POWER GAIN 30 db

CHARACTERISTICS

Cathode: Oxide Coated, Unipotential

Heater:
- Voltage 5.0 volts
- Current 33.0 amperes

RF Connections:
- Input 50-ohm Type N
- Cavity Loading 50-ohm Type N
- Output 1 5/8 inch 50-ohm line

Net Weight:
- Klystron 49 pounds
- Circuit Assembly 327 pounds

Maximum Dimensions (Klystron):
- Length 45.2 inches
- Diameter 5.4 inches

Maximum Dimensions (Klystron in Circuit Assembly):
- Length 48.5 inches
- Diameter 22.8 inches

Cooling Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	10 kVdc
D-C FOCUS ELECTRODE VOLTAGE	−500 Vdc
D-C BEAM CURRENT	750 mAdc
COLLECTOR DISSIPATION	3 kW

TYPICAL OPERATION (Narrow-Band, CW Amplifier, Collector Depressed)

RF Frequency	900 Mc
Output Power	2150 W
Drive Power	4.0 W
D-C Beam Voltage	9000 Vdc
D-C Beam Current	580 mAdc
D-C Collector Voltage (from Cathode)	4500 kVdc
D-C Collector Current	210 mAdc
D-C Body Current	370 mAdc
Efficiency	50 %

4KM3000LR

The Eimac 4KM3000LR is a ceramic and metal, four-gap, external-cavity, magnetically focused, power-amplifier klystron designed for communication service. An Eimac Modulating Anode is employed, providing an effective means of amplitude or pulse modulating the output power without changing the beam voltage.

The Eimac Klystron Amplifier Circuit Assembly (H-125) has been designed for use with this tube to cover the specified frequency range. It permits operation of the klystron as a narrow-band amplifier or, with external resistive loads, as a wide-band amplifier.

FREQUENCY RANGE 610 - 985 Mc
MINIMUM CW OUTPUT POWER 2 kilowatts
TYPICAL POWER GAIN 45 db

CHARACTERISTICS

Cathode: Oxide Coated, Unipotential

Heater:
- Voltage 5.0 volts
- Current 31.0 amperes

RF Connections:
- Input 50-ohm Type N
- Cavity Loading 50-ohm Type N
- Output 1 5/8 inch 50-ohm line

Net Weight (Tube): 38 pounds

Net Weight (Circuit Assembly): 225 pounds

Maximum Dimensions (Tube):
- Length 37.5 inches
- Diameter 5.2 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 40.8 inches
- Width 25.9 inches

Cooling Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE*	10 kVdc
D-C BEAM CURRENT*	750 mAdc
D-C FOCUS ELECTRODE VOLTAGE	−500 Vdc
D-C BODY CURRENT	75 mAdc
COLLECTOR DISSIPATION	3 kW

*These ratings are not to be applied simultaneously.

TYPICAL OPERATION (Narrow-Band, CW Amplifier)

RF Frequency	900 Mc
Output Power	2100 W
Drive Power	0.050 W
D-C Beam Voltage	8500 Vdc
D-C Beam Current	550 mAdc

4KM50,000LA

The Eimac 4KM50,000LA is a ceramic and metal, four-cavity, magnetically focused, power amplifier klystron employing the Eimac Modulating Anode. The resonant cavities are completed through cylindrical ceramic windows and all tuning is accomplished outside the vacuum envelope.

The Eimac Klystron Amplifier Circuit Assembly (H-121) has been designed for use with this tube to cover the specified frequency range. It permits operation of the klystron as a narrow-band amplifier or, with external resistive loads, as a wide-band amplifier.

FREQUENCY RANGE 400 - 630 Mc
MINIMUM CW OUTPUT POWER 10 kilowatts
TYPICAL POWER GAIN 55 db

CHARACTERISTICS

Cathode: EMA, Unipotential

Heater:
- Voltage 7.5 volts
- Current 40 amperes

RF Connections:
- Cavity Loading 1 5/8 inch 50-ohm line
- Input 50-ohm Type N
- Output 3 1/8 inch 50-ohm line

Net Weight (Tube): 64 pounds

Net Weight (Circuit Assembly): 767 pounds

Maximum Dimensions (Tube):
- Length 66.5 inches
- Diameter 5.13 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 68.5 inches
- Diameter 26.25 inches

Cooling Water and Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	20 kVdc
D-C FOCUS ELECTRODE VOLTAGE	−500 Vdc
D-C BODY CURRENT	150 mAdc
COLLECTOR DISSIPATION	50 kW
D-C BEAM CURRENT	2.5 Adc

TYPICAL OPERATION (Narrow-Band, CW Amplifier)

RF Frequency	600 Mc
Output Power	10 kW
Drive Power	0.020 W
D-C Beam Voltage	17 kVdc
D-C Beam Current	1.8 Adc

APPLICATION ENGINEERS AT EIMAC WILL HELP YOU WITH PRODUCT DESIGN AND EXPERIMENTATION.

POWER KLYSTRONS

4KM50,000LQ

The Eimac 4KM50,000LQ is a ceramic and metal, four-cavity, magnetically focused, power-amplifier klystron employing the Eimac Modulating Anode.

The external cavity design permits a wide tuning range and allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly (H-122) has been designed for use with this tube to cover the specified frequency range. It permits operation of the klystron as a narrow-band amplifier or, with external resistive loads, as a wide-band amplifier.

FREQUENCY RANGE 610 - 985 Mc
MINIMUM CW OUTPUT POWER 10 kilowatts
TYPICAL POWER GAIN 55 db

CHARACTERISTICS

Cathode: EMA, Unipotential

Heater:
- Voltage 7.5 volts
- Current 40 amperes

RF Connections:
- Input 50-ohm Type N
- Cavity Loading 7/8 inch 50-ohm line
- Output 3 1/8 inch 50-ohm line

Net Weight (Tube): 55 pounds

Net Weight (Circuit Assembly): 349 pounds

Maximum Dimensions (Tube):
- Length 46.38 inches
- Diameter 6.32 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 51.5 inches
- Diameter 29.38 inches

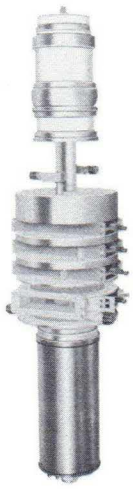
Cooling Water and Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	20 kVdc
D-C FOCUS ELECTRODE VOLTAGE	−500 Vdc
D-C BODY CURRENT	100 mAdc
COLLECTOR DISSIPATION	50 kW
D-C BEAM CURRENT	2.5 Adc

TYPICAL OPERATION (Narrow-Band, CW Amplifier)

RF Frequency	900 Mc
Output Power	10 kW
Drive Power	0.020 W
D-C Beam Voltage	17 kVdc
D-C Beam Current	1.8 Adc



4KM50,000SG

The Eimac 4KM50,000SG is a ceramic and metal, four-cavity, magnetically focused, power-amplifier klystron. Its resonant cavities are an integral part of the tube structure and are completed and tuned outside the vacuum envelope.

This klystron employs the Eimac Modulating Anode, which provides an effective means of pulse or amplitude modulating the output power without changing the beam voltage.

The Eimac Klystron Amplifier Circuit Assembly, Catalog Number H-115 has been designed for use with this tube.

FREQUENCY RANGE 1700 - 2400 Mc
MINIMUM CW OUTPUT POWER 10 kilowatts
TYPICAL POWER GAIN 40 db

CHARACTERISTICS

Cathode: EMA, Unipotential

Heater:
- Voltage 6.3 volts
- Current 37.5 amperes

Getter:
- Voltage 1.75 volts
- Current 30 amperes

RF Connections:
- Input Type BNC
- Output RG-105/u Waveguide

Net Weight (Tube): 70 pounds

Net Weight (Circuit Assembly): 210 pounds

Maximum Dimensions (Tube):
- Length 34.43 inches
- Diameter 12.32 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 38.13 inches
- Diameter 27.75 inches

Cooling Forced air and water

MAXIMUM RATINGS

D-C BEAM VOLTAGE	18 kVdc
D-C FOCUS ELECTRODE VOLTAGE	−300 Vdc
D-C BODY CURRENT	125 mAdc
COLLECTOR DISSIPATION	50 kW
D-C BEAM CURRENT	2.0 Adc

TYPICAL OPERATION (Narrow-Band, CW Amplifier)

RF Frequency	1700 Mc
Output Power	12 kW
Drive Power	0.5 W-
D-C Beam Voltage	17 kVdc
D-C Beam Current	1.9 Adc
D-C Mod. Anode Voltage	17 kVdc

4KM170,000LA

The Eimac 4KM170,000LA is a ceramic and metal, four-cavity, magnetically focused, power-amplifier klystron employing the Eimac Modulating Anode.

All tuning for this tube is accomplished outside the vacuum envelope. This allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly, Catalog Number H-128, has been designed for use with this tube.

FREQUENCY RANGE 300 - 500 Mc
MINIMUM CW OUTPUT POWER 75 kilowatts
TYPICAL POWER GAIN 45 db

CHARACTERISTICS

Cathode: EMA, Unipotential

Heater:
- Voltage 11.0 volts
- Current 47.5 amperes

RF Connections:
- Input 50-ohm Type N
- Output 6 1/8 inch 50-ohm line

Net Weight (Tube): 196 pounds

Net Weight (Circuit Assembly): 1792 pounds

Maximum Dimensions (Tube):
- Length 89.13 inches
- Diameter 9.51 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 103.0 inches
- Width 38.25 inches

Cooling Water and Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	35 kVdc
D-C FOCUS ELECTRODE VOLTAGE	−1000 Vdc
D-C BODY CURRENT	250 mAdc
COLLECTOR DISSIPATION	170 kW
D-C BEAM CURRENT	5.5 Adc

TYPICAL OPERATION (Narrow-Band, CW Amplifier)

RF Frequency	425	425 Mc
Output Power	19	77 kW
Drive Power	0.8	0.8 W
D-C Beam Voltage	20	33 kVdc
D-C Beam Current	2.0	4.8 Adc

EIMAC PRODUCTS ARE STOCKED BY DISTRIBUTORS IN EVERY MAJOR CITY THROUGHOUT THE COUNTRY.

POWER KLYSTRONS

4KMP10,000LF

The Eimac 4KMP10,000LF is a ceramic and metal, four-cavity, magnetically focused, pulse amplifier klystron. It employs the Eimac modulating anode which provides an effective means of pulse modulating the output power without changing the beam voltage.

The external cavity design allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly, Catalog Number H-127, has been designed for use with this tube.

FREQUENCY RANGE 570 - 630 Mc
MINIMUM PULSE OUTPUT POWER 400 kilowatts
TYPICAL POWER GAIN 55 db

CHARACTERISTICS

Cathode: EMA, Unipotential
Heater:
- Voltage 12.0 volts
- Current 25.0 amperes

RF Connections:
- Input 50-ohm Type N
- Output Waveguide WR-1500

Net Weight (Tube): 140 pounds

Maximum Dimensions (Tube):
- Length 84.25 inches
- Diameter 6.88 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 85.56 inches
- Width 24.0 inches

Cooling Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	70 kVdc
D-C MOD. ANODE VOLTAGE	44 kVdc
D-C BODY CURRENT	15 mAdc
COLLECTOR DISSIPATION	10 kW
PEAK D-C BEAM CURRENT	22.5 a
AVERAGE D-C BEAM CURRENT	300 mAdc

TYPICAL OPERATION
(Narrow-Band, Pulse Amplifier)

RF Frequency	630 Mc
Peak Output Power	400 kw
Average Output Power	4 kW
Peak Drive Power	0.8 w
D-C Beam Voltage	61.5 kVdc
D-C Beam Current (Average)	150 mAdc
Peak Mod. Anode Voltage Swing	30.7 kv
Peak Beam Current	15.0 a

6K50,000LQ

The Eimac 6K50,000LQ is a six-cavity, magnetically focused, cascade amplifier klystron designed primarily for CW high-power, broad-band communication service.

The resonant cavities of the 6K50,-000LQ are completed by tuning boxes external to the tube. This design permits a wide tuning range and allows repeated tuning operations without damage to the vacuum seals.

FREQUENCY RANGE 720 - 980 Mc
BROAD-BAND CW OUTPUT POWER 6 kilowatts
BROAD-BAND POWER GAIN 30 db

CHARACTERISTICS

Cathode: Unipotential, Bombardment Heated
Filament:
- Voltage 8.0 volts
- Current 40 amperes

Bombarder:
- Voltage 2280 volts
- Current 0.70 amperes

RF Connections:
- Input 50-ohm Type N
- Output 3 1/8 inch 50-ohm line

Net Weight (Tube): 63 pounds

Maximum Dimensions (Tube):
- Length 57.0 inches
- Diameter 5.13 inches

Cooling Water and Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	20 kVdc
D-C FOCUS ELECTRODE VOLTAGE	−500 Vdc
D-C BODY CURRENT	100 mAdc
COLLECTOR DISSIPATION	50 kW
D-C BEAM CURRENT	2.5 Adc

TYPICAL OPERATION
(Broad-Band, CW Amplifier)

RF Frequency	880	880 Mc
Output Power	6.4	9.0 kW
Drive Power	1.7	2.3 W
D-C Beam Voltage	17	19.5 kVdc
D-C Beam Current	1.88	2.30 Adc
3 db Band Width	20	15 Mc

➧ X-626

The Eimac X-626 is a three-cavity, ceramic and metal, magnetically focused power-amplifier klystron specifically designed for pulse service requiring high average power capabilities. This tube employs the Eimac Modulating Anode, which provides a convenient means of pulse modulating the output power without changing the beam voltage. The external cavity design permits a wide tuning range.

The Eimac Klystron Amplifier Circuit Assembly (H-123) has been designed for use with this tube to cover the specified frequency range.

FREQUENCY RANGE 400 - 450 Mc
MINIMUM PULSE OUTPUT POWER 1.25 megawatts
TYPICAL POWER GAIN 26 db

CHARACTERISTICS

Cathode: EMA, Unipotential
Heater:
- Voltage 7.5 volts
- Current 95 amperes

Getter:
- Voltage 13 volts
- Current 30 amperes

RF Connections:
- Input 50-ohm Type HN
- Output Adaptable to WR-2100 waveguide

Net Weight (Tube): 585 pounds

Maximum Dimensions (Tube):
- Length 117 inches
- Diameter 18 inches

Maximum Dimensions (Tube and Circuit Assembly):
- Length 120 inches
- Diameter 38 inches

Cooling Liquid and Forced air

TENTATIVE MAXIMUM PULSE RATINGS

D-C BEAM VOLTAGE	110 kVdc
PEAK MOD. ANODE VOLTAGE	66 kv
D-C BODY CURRENT	150 mAdc
GETTER CURRENT	35 ac
COLLECTOR DISSIPATION	240 kW
AVERAGE BEAM INPUT	240 kW
PEAK BEAM INPUT	4.0 Mw
PEAK BEAM CURRENT	36.5 a

TYPICAL OPERATION

RF Frequency	400 Mc
Peak Output Power	1.25 Mw
Peak Drive Power	3.15 kw
D-C Beam Voltage	105 kVdc
D-C Beam Current	2.07 Adc
Peak Mod. Anode Voltage	56.8 kv
Peak Beam Current	34.5 a
Duty	6 %
Pulse Width	2000 μs

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RECTIFIERS

The complete line of rectifiers produced by Eitel-McCullough, Inc. comprises more than ten distinct tube types with plate-dissipation ratings from 15 watts to 3000 watts. Most Eimac rectifiers are of the high-vacuum radiation-cooled variety. Forced-air-cooled diodes with external anodes and mercury-vapor rectifiers — with and without control electrodes — are included in the comprehensive listing.

Eimac high-vacuum rectifiers are designed for use where extreme ambient temperatures, high operating frequency, high peak inverse voltage, or the production of high-frequency transients would prevent the use of gas-filled rectifiers. Eimac rectifiers are used extensively in such applications as high-power klystron-amplifier power supplies, where reliability is essential and in industrial precipitators, where very high voltages are required.

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
Net Weight	0.2 ounces
Length	1.813 inches
Diameter	0.563 inches

2-25A

This small instant-heating, high-voltage diode is useful in low-power rectifier or voltage-doubler service. No forced-air cooling is required in most applications.

MAXIMUM RATINGS

PEAK INVERSE	25,000 volts
D-C CURRENT	0.050 ampere
PEAK CURRENT	1.0 ampere
PLATE DISSIPATION	15 watts

CHARACTERISTICS

Filament: Thoriated tungsten

Voltage	6.3 volts
Current	2.75 to 3.15 amperes
Base	Small 4-pin
Socket	E. F. Johnson Co. No. 122-224 or National Co. No. XC-4 or CIR-4
Plate Connector	HR-1
Max. Seal Temp.	225 °C
Max. Envelope Temp.	225 °C
Net Weight	1.2 ounces
Length	4.38 inches
Diameter	1.44 inches

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amp)
1 - Phase Full Wave	17,700	8,000	0.1
1 - Phase Bridge	17,700	16,000	0.1
3 - Phase Full Wave	10,200 (per leg)	24,000	0.15

2-50A

A high-vacuum diode especially suitable for high-voltage applications where distant heating is desired. It is cooled by radiation and convection.

MAXIMUM RATINGS

PEAK INVERSE	30,000 volts
D-C CURRENT	0.075 ampere
PEAK CURRENT	1.0 ampere
PLATE DISSIPATION	30 watts

CHARACTERISTICS

Filament: Thoriated tungsten

Voltage	5.0 volts
Current	4 amperes
Base	Medium 4-pin bayonet
Socket	E. F. Johnson Co. No. 122-224 or National Co. No. XC-4 or CIR-4
Plate Connector	HR-3
Max. Seal Temp.	225 °C
Max. Envelope Temp.	225 °C
Net Weight	2.5 ounces
Length	5.50 inches
Diameter	1.82 inches

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amp)
1 - Phase Full Wave	21,200	9,500	0.150
1 - Phase Bridge	21,200	19,000	0.150
3 - Phase Full Wave	12,200 (per leg)	28,500	0.225

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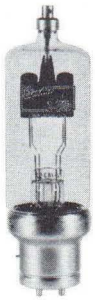
RECTIFIERS



2-150D

A unique high-voltage diode, actually two diodes in one envelope, suitable for use in many high-voltage rectifier and multiplier applications. The 2-150D is cooled by radiation and convection.

MAXIMUM RATINGS

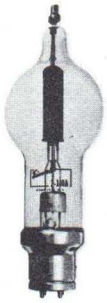
PEAK INVERSE	30,000 volts
D-C CURRENT	0.250 ampere
PEAK CURRENT	3.0 amperes
PLATE DISSIPATION	90 watts

CHARACTERISTICS

Filament: Thoriated tungsten	
Voltage	5.0 volts
Current	11.6 to 13.2 amperes
Base	50-watt jumbo 4-pin bayonet
Socket	E. F. Johnson Co. No. 123-211 or National Co. No. XM-50
Plate Connector	HR-6
Max. Seal Temp.	225 °C
Max. Envelope Temp.	225 °C
Net Weight	9 ounces
Length	8.88 inches
Diameter	2.50 inches

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amp)
1 - Phase Full Wave	21,200	9,500	0.50
1 - Phase Bridge	21,200	19,000	0.50
3 - Phase Full Wave	12,200 (per leg)	28,500	0.75



2-240A

A high-vacuum, high-voltage rectifier frequently employed in three-phase klystron power supplies. It is cooled by radiation and convection in most equipments.

MAXIMUM RATINGS

PEAK INVERSE	25,000 volts
D-C CURRENT	0.50 ampere
PEAK CURRENT	4.0 amperes
PLATE DISSIPATION	150 watts

CHARACTERISTICS

Filament: Thoriated tungsten	
Voltage	7.5 volts
Current	11.0 to 12.5 amperes
Base	50-watt jumbo 4-pin bayonet
Socket	E. F. Johnson Co. No. 123-211 or National Co. No. XM-50
Plate Connector	HR-6
Max. Seal Temp.	225 °C
Max. Envelope Temp.	225 °C
Net Weight	10 ounces
Length	11.2 inches
Diameter	3.82 inches

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amps)
1 - Phase Full Wave	18,000	8,000	1.00
1 - Phase Bridge	18,000	16,000	1.00
3 - Phase Full Wave	10,200 (per leg)	24,000	1.50

2-450A

A high-vacuum, high-voltage rectifier designed to replace parallel 2-240A's in three-phase power supplies. Additionally, it enjoys a higher plate dissipation capability and a higher peak-inverse voltage rating. It is cooled by radiation and convection.

MAXIMUM RATINGS

PEAK INVERSE	30,000 volts
D-C CURRENT	1.0 ampere
PEAK CURRENT	8.0 amperes
PLATE DISSIPATION	450 watts

CHARACTERISTICS

Filament: Thoriated tungsten	
Voltage	7.5 volts
Current	25.0 to 28.0 amperes
Base	4-pin metal shell
Socket	E. F. Johnson Co. No. 124-214
Plate Connector	HR-8
Max. Seal Temp.	225 °C
Max. Envelope Temp.	250 °C
Net Weight	2.4 pounds
Length	13.625 inches
Diameter	1.687 inches

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amps)
1 - Phase Full Wave	21,200	9,500	2.0
1 - Phase Bridge	21,200	19,000	2.0
3 - Phase Full Wave	12,200 (per leg)	28,500	3.0

2-2000A

A large high-vacuum rectifier with a high peak-inverse voltage rating and high plate-dissipation capability. The 2-2000A is cooled by radiation and convection; no forced-air cooling is required in most installations.

MAXIMUM RATINGS

PEAK INVERSE	75,000 volts
D-C CURRENT	0.750 ampere
PEAK CURRENT	12.0 amperes
PLATE DISSIPATION	1200 watts

CHARACTERISTICS

Filament: Thoriated tungsten	
Voltage	10.0 volts
Current	22.0 to 25.0 amperes
Base	Special 4-pin
Socket	E. F. Johnson Co. No. 124-214
Plate Connector	HR-8
Max. Seal Temp.	225 °C
Max. Envelope Temp.	225 °C
Net Weight	3 pounds
Length	17.8 inches
Diameter	8.13 inches

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amps)
1 - Phase Full Wave	53,000	23,800	1.50
1 - Phase Bridge	53,000	47,600	1.50
3 - Phase Full Wave	30,600 (per leg)	71,500	2.25

2X1000A

A high-vacuum diode intended for clipper-diode service, the 2X1000A may be used in circuits where the peak inverse voltage is as high as 25 kilovolts. It is cooled by forced air.

MAXIMUM RATINGS

PEAK INVERSE	25,000 volts
D-C CURRENT	1.25 amperes
PEAK CURRENT	25.0 amperes
PLATE DISSIPATION	1000 watts

CHARACTERISTICS

Cathode: Oxide-coated, unipotential	
Heater:	
Voltage	26.5 volts
Current	1.95 to 2.35 amperes
Base	Super jumbo 4-pin
Socket	E. F. Johnson Co. No. 122-244
Maximum Seal Temp.	150 °C
Maximum Anode-Core Temp.	200 °C
Net Weight	25.5 ounces
Length	7.188 inches
Diameter	3.125 inches

EIMAC PRODUCTS ARE STOCKED BY DISTRIBUTORS IN EVERY MAJOR CITY THROUGHOUT THE COUNTRY.

RECTIFIERS

2X3000F

A high-vacuum, forced-air cooled, external-anode diode intended for use in high-power rectifier units whenever high peak inverse voltages, extreme ambient temperatures, high operating frequency, or the production of high-frequency transients would prevent the use of mercury-vapor or gas-filled rectifier tubes.

MAXIMUM RATINGS

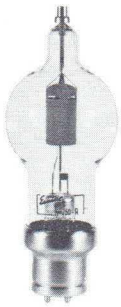
PEAK INVERSE	25,000 volts
D-C CURRENT	3.0 amperes
PEAK CURRENT	20.0 amperes
PLATE DISSIPATION	3000 watts

CHARACTERISTICS

Filament: Thoriated tungsten	
Voltage	7.5 volts
Current	49 to 54 amperes
Maximum Seal Temp.	150 °C
Maximum Anode-Core Temp.	150 °C
Length	8.375 inches
Diameter	4.125 inches
Net Weight	5.7 pounds

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amps)
1 - Phase Full Wave	17,700	8,000	6.0
1 - Phase Bridge	17,700	16,000	6.0
3 - Phase Full Wave	10,200 (per leg)	24,000	9.0



250R

A high-vacuum radiation-cooled diode with instant-heating capability, the 250R is used in many high-voltage applications. No forced air is required in most cases.

MAXIMUM RATINGS

PEAK INVERSE	60,000 volts
D-C CURRENT	0.25 ampere
PEAK CURRENT	2.5 amperes
PLATE DISSIPATION	150 watts

CHARACTERISTICS

Filament: Thoriated tungsten	
Voltage	5.0 volts
Current	9.7 to 11.2 amperes
Base	50-watt jumbo 4-pin bayonet
Socket	E. F. Johnson Co. No. 123-211 or National Co. No. XM-50
Plate Connector	HR-6
Max. Seal Temp.	225 °C
Max. Envelope Temp.	225 °C
Length	10.13 inches
Diameter	3.82 inches
Net Weight	10 pounds

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amp)
1 - Phase Full Wave	42,000	19,000	0.50
1 - Phase Bridge	42,000	38,000	0.50
3 - Phase Full Wave	24,500 (per leg)	57,000	0.75

8020

A compact high-vacuum rectifier frequently used in high-voltage and voltage-multiplier power supplies. The 8020 is instant heating and is cooled by radiation and convection.

MAXIMUM RATINGS

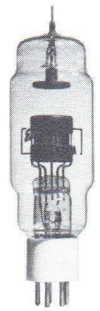
PEAK INVERSE	40,000 volts
D-C CURRENT	0.100 ampere
PEAK CURRENT	1.5 amperes
PLATE DISSIPATION	60 watts

CHARACTERISTICS

Filament: Thoriated tungsten	
Voltage	5.0 volts
Current	5.5 to 6.5 amperes
Base	Medium 4-pin bayonet
Socket	E. F. Johnson Co. No. 122-224 or National Co. No. XC-4 or CIR-4
Plate Connector	HR-8
Max. Seal Temp.	225 °C
Max. Envelope Temp.	225 °C
Length	8.0 inches
Diameter	2.32 inches
Net Weight	4 ounces

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amp)
1 - Phase Full Wave	28,000	12,500	0.2
1 - Phase Bridge	28,000	25,000	0.2
3 - Phase Full Wave	16,300 (per leg)	38,000	0.3



KY21A

A grid-controlled mercury-vapor rectifier recommended for use in power supplies or control circuits where a variable voltage at high current is desired.

MAXIMUM RATINGS

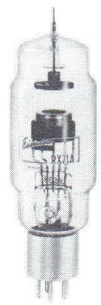
PEAK INVERSE	11,000 volts
PEAK FORWARD	5,500 volts
D-C CURRENT	0.75 ampere
PEAK CURRENT	3.0 amperes
SUPPLY FREQUENCY	150 cps

CHARACTERISTICS

Filament: Coated	
Voltage	2.5 volts
Current	9.2 to 10.8 amperes
Base	Medium 5-pin
Max. Cond. Mercury Temp.	20-60 °C
Length	8.0 inches
Diameter	2.25 inches
Net Weight	5 ounces

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amps)
1 - Phase Full Wave	7,800	3,500	1.50
1 - Phase Bridge	7,800	7,000	1.50
3 - Phase Full Wave	4,500 (per leg)	10,500	2.25



RX21A

A half-wave, mercury-vapor rectifier incorporating features which enable it to withstand high peak inverse voltages and to supply high d-c current. A shielded ribbon filament provides a large emission reserve and assures long life.

MAXIMUM RATINGS

PEAK INVERSE	11,000 volts
D-C CURRENT	0.750 ampere
PEAK CURRENT	3.0 amperes
SUPPLY FREQUENCY	150 cps

CHARACTERISTICS

Filament: Coated	
Voltage	2.5 volts
Current	9.2 to 10.8 amperes
Base	Medium 5-pin
Max. Cond. Mercury Temp.	20-60 °C
Length	8.0 inches
Diameter	2.25 inches
Net Weight	5 ounces

MAXIMUM PERFORMANCE CAPABILITIES (Choke-Input Filter)

CIRCUIT	RMS INPUT VOLTAGE (volts)	D-C OUTPUT VOLTAGE (volts)	D-C OUTPUT CURRENT (amps)
1 - Phase Full Wave	7,800	3,500	1.50
1 - Phase Bridge	7,800	7,000	1.50
3 - Phase Full Wave	4,500 (per leg)	10,500	2.25

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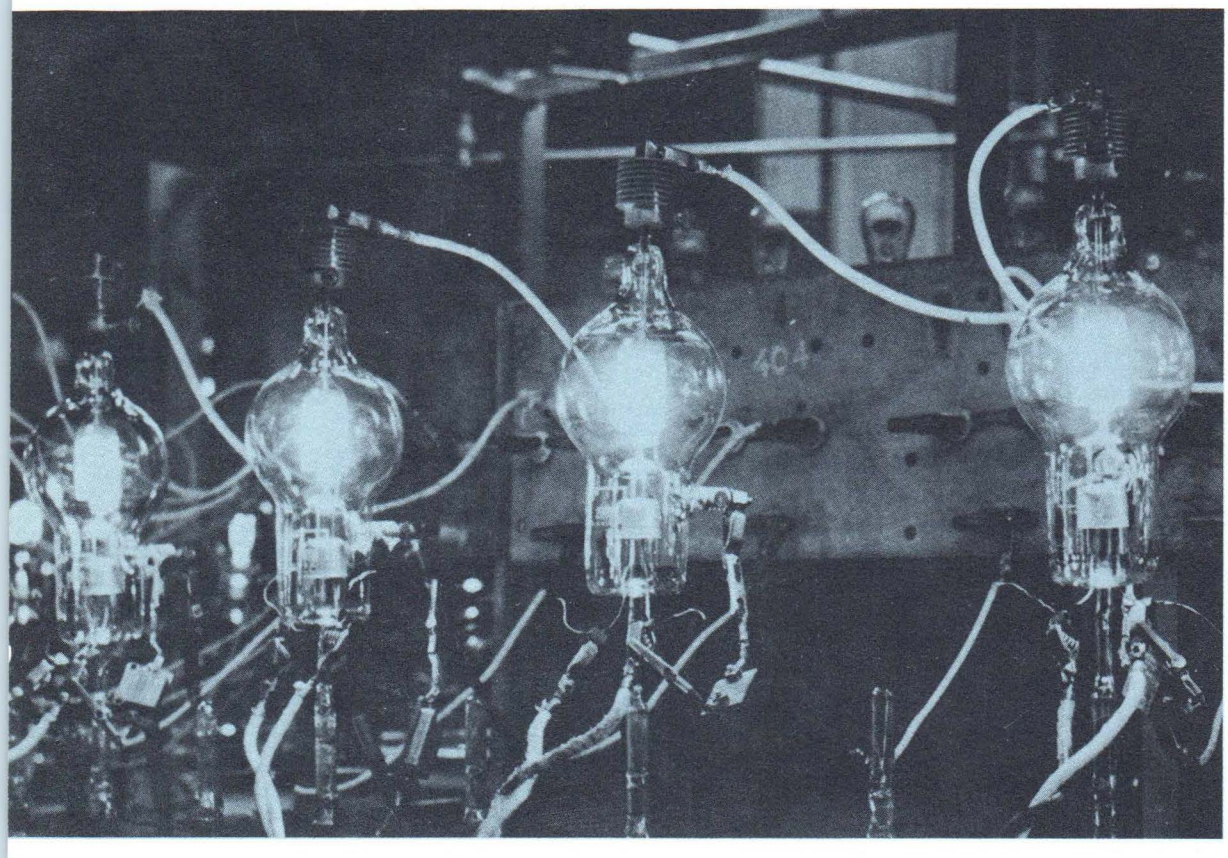
TRIODES



A complete line of Eimac triodes—the 25T through the 2000T—are used in fixed-station applications such as broadcast and communications transmitters and industrial oscillator service. Eimac manufactures the 2C39A - 3CX100A5 series triodes which are designed for CW and pulse applications at frequencies up to 2500 megacycles. Power triodes in the 3X2500, 3X3000, and 3X5000 series are designed for FM-amplifier service and dielectric-heating oscillator service. They are also used as broadcast and communications frequency amplifiers. In the section "Other Products," may be found a new UHF power triode — the Eimac X762.

APPLICATION ENGINEERS AT EIMAC WILL HELP YOU WITH PRODUCT DESIGN AND EXPERIMENTATION.

TRIODES

2C39A

This old favorite among the many different UHF planar triodes is still widely used as an oscillator, multiplier, or amplifier at frequencies up to 2500 megacycles. It is especially suitable for applications where performance requirements are not stringent or where economy is a major factor.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 megacycles
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 uufd
Grid-Plate 1.86 to 2.16 uufd
Plate-Cathode 0.035 uufd

Base Coaxial
Maximum Seal Temp. 175 °C
Maximum Anode-Core Temp. 175 °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)	Maximum Ratings: Cathode Current (amp)	Maximum Ratings: Plate Diss. (watts)	Maximum Ratings: Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Typical Operation: Plate Current (amp)	Typical Operation: Drive Power (watts)	Typical Operation: Output Power (watts)
C	Radio-Frequency Power Amplifier and Oscillator	1000	0.125	100	2	800	0.080	6	27
C	Plate-Modulated Radio-Frequency Power Amplifier and Oscillator	600	0.100	70	2	600	0.065	5	16

2C39WA

The 2C39WA is a ceramic-metal planar triode of the 2C39A family designed to meet exacting military requirements. Its physical and electrical characteristics are similar to other tubes of this family, but extended testing and a tight specification assure a premium tube with uniform performance characteristics.

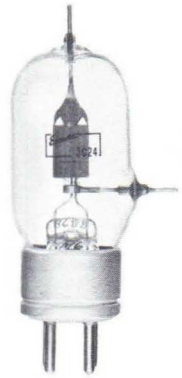
PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 megacycles
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 0.90 to 1.05 amperes
Capacitances:
Grid-Cathode 5.60 to 7.60 uufd
Grid-Plate 1.86 to 2.16 uufd
Plate-Cathode 0.035 uufd

Base Coaxial
Maximum Seal Temp. 200 °C
Maximum Anode-Core Temp. 200 °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)	Maximum Ratings: Cathode Current (amp)	Maximum Ratings: Plate Diss. (watts)	Maximum Ratings: Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Typical Operation: Plate Current (amp)	Typical Operation: Drive Power (watts)	Typical Operation: Output Power (watts)
C	Radio-Frequency Power Amplifier and Oscillator	1000	0.125	100	2	800	0.080	6	27
C	Plate-Modulated Radio-Frequency Power Amplifier and Oscillator	600	0.100	70	2	600	0.065	5	16



3C24

A general-purpose radiation-cooled triode, the 3C24 has a 25-watt plate-dissipation rating and is capable of operation at maximum ratings to 60 megacycles. No forced air is required in most applications.

PLATE DISSIPATION 25 watts
FREQUENCY FOR MAXIMUM RATINGS 60 megacycles
COOLING Convection and Radiation

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 6.3 volts
Current 2.8 to 3.15 amperes
Capacitances:
Grid-Filament 1.4 to 2.2 uufd
Grid-Plate 1.4 to 1.8 uufd
Plate-Filament 0.1 to 0.3 uufd

Base UX small 4-pin
Socket Johnson 122-224, National XC4 or CIR-4
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 4.375 inches
Maximum Diameter 1.438 inches
Net Weight 1.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Maximum Ratings: Plate Current (amp)	Maximum Ratings: Plate Diss. (watts)	Maximum Ratings: Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Typical Operation: Plate Current (amp)	Typical Operation: Drive Power (watts)	Typical Operation: Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	2000	0.075	25	7	1250	0.130*	3.4*	112*
C	Radio-Frequency Power Amplifier and Oscillator	2000	0.075	25	7	2000	0.063	4.0	100
C	Plate-Modulated Radio-Frequency Power Amplifier	1600	0.060	17	7	1600	0.053	3.1	68

*Two tubes.

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 megacycles 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 megacycles
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 uufd
Grid-Plate 1.86 to 2.15 uufd
Plate-Cathode 0.035 uufd

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)	Maximum Pulse Ratings: Plate Current (amps)	Maximum Pulse Ratings: Plate Diss. (watts)	Maximum Pulse Ratings: Grid Diss. (watts)	Typical Pulse Operation: Plate Voltage (volts)	Typical Pulse Operation: Plate Current (amps)	Typical Pulse Operation: Duty	Typical Pulse Operation: Output Power (watts)
C	Plate-Pulsed Power Oscillator — 3000 megacycles	3500	3.0	10	2	3500	3.0	0.0025	1600
C	Grid Pulsed Amplifier — 3000 megacycles	1600	3.0	10	2	1600	3.0	0.0025	2

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TRIODES

3CX100A5

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

PLATE DISSIPATION **100 watts**
FREQUENCY FOR MAXIMUM RATINGS **2500 megacycles**
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 uufd
Grid-Plate 1.95 to 2.15 uufd
Plate-Cathode 0.035 uufd

Base Coaxial
Maximum Seal Temp. 300 °C
Maximum Anode-Core Temp. 300 °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)	Maximum Ratings: Cathode Current (amp)	Maximum Ratings: Plate Diss. (watts)	Maximum Ratings: Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Typical Operation: Plate Current (amp)	Typical Operation: Drive Power (watts)	Typical Operation: Output Power (watts)
C	Radio-Frequency Power Amplifier and Oscillator — 500 megacycles	1000	0.125	100	2	800	0.080	6	27
C	Radio-Frequency Power Amplifier or Oscillator — 2500 megacycles	1000	0.125	100	2	900	0.090	—	15
C	Plate-Modulated Radio-Frequency Power Amplifier or Oscillator — 500 megacycles	600	0.100	70	2	600	0.065	5	16

3W5000A1

The 3W5000A1 is a water-cooled version of the 3X3000A1 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 if quick-disconnect water fittings are also employed.

PLATE DISSIPATION **5000 watts**
COOLING **Water and Forced Air**

CHARACTERISTICS

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

Base Coaxial
Maximum Seal Temp. 150 °C
Maximum Height 12.562 inches
Maximum Diameter 3.625 inches
Net Weight 3.5 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Maximum Ratings: Plate Current (amps)	Maximum Ratings: Plate Diss. (watts)	Maximum Ratings: Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Typical Operation: Plate Current (amps)	Typical Operation: Drive Power (watts)	Typical Operation: Output Power (watts)
AB_1	Audio-Frequency Power Amplifier and Modulator	6000	2.5	5000	—	6000	2.65*	0	10,000*

*Two tubes.

3W5000F1

The 3W5000F1 is a water-cooled version of the 3X3000F1. 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**
COOLING **Water and Forced Air**

CHARACTERISTICS

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

Maximum Seal Temp. 150 °C
Maximum Diameter 3.625 inches
Net Weight 4.8 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Maximum Ratings: Plate Current (amps)	Maximum Ratings: Plate Diss. (watts)	Maximum Ratings: Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Typical Operation: Plate Current (amps)	Typical Operation: Drive Power (watts)	Typical Operation: Output Power (watts)
AB_1	Audio-Frequency Power Amplifier and Modulator	6000	2.5	5000	—	6000	2.65*	0	10,000*

*Two tubes.

3W5000A3

This water-cooled version of the 3X2500A3 is offered 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 megacycles.

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

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 49 to 54 amperes
Capacitances:
Grid-Filament 36 uufd
Grid-Plate 20 uufd
Plate-Filament 1.2 uufd

Base Coaxial
Maximum Seal Temp. 150 °C
Maximum Height 12.562 inches
Maximum Diameter 3.625 inches
Net Weight 3.5 pounds

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

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TRIODES

3W5000F3

The 3W5000F3 is electrically identical to the 3X2500F3 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 30 megacycles
COOLING Water and Forced Air

CHARACTERISTICS

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

Maximum Seal Temp. 150 °C
Maximum Height 22.0 inches
Maximum Diameter 3.625 inches
Net Weight 4.8 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_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.

3X100A5

This glass and metal planar triode is electrically and physically identical to the Eimac 2C39A. However, additional production tests, including the Eimac-originated cathode-evaluation test, assure higher quality and more uniform performance.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 2500 megacycles
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 uufd
Grid-Plate 1.86 to 2.16 uufd
Plate-Cathode 0.035 uufd

Base Coaxial
Maximum Seal Temp. 175 °C
Maximum Anode-Core Temp. 175 °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 (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
C	Radio-Frequency Power Amplifier and Oscillator	1000	0.125	100	2	800	0.080	6	27
C	Plate-Modulated Radio-Frequency Power Amplifier and Oscillator	600	0.100	70	2	600	0.065	5	16

3X2500A3

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 megacycles. 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 megacycles
COOLING Forced Air

CHARACTERISTICS

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

Base Coaxial
Maximum Seal Temp. 150 °C
Maximum Anode-Core Temp. 150 °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.

3X2500F3

This compact, high-power triode has electrical characteristics identical to those of the 3X2500A3. 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 megacycles.

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

CHARACTERISTICS

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

Maximum Seal Temp. 150 °C
Maximum Anode-Core Temp. 150 °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.

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TRIODES

3X3000A1

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 3X3000A1 uses coaxial electrode terminals and may be installed or removed with a minimum of delay.

PLATE DISSIPATION 3000 watts
COOLING Forced Air

CHARACTERISTICS

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

Base Coaxial
Maximum Seal Temp. 150 °C
Maximum Anode-Core Temp. 150 °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.

3X3000F1

This low-mu high-power triode is electrically identical to the 3X3000A1. 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
COOLING Forced Air

CHARACTERISTICS

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

Maximum Seal Temp. 150 °C
Maximum Anode-Core Temp. 150 °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.

25T

The 25T is a radiation-cooled triode suitable for use at maximum ratings through 60 megacycles. A plate-dissipation power of 25 watts is allowable in most installations without the necessity for forced-air cooling.

PLATE DISSIPATION 25 watts
FREQUENCY FOR MAXIMUM RATINGS 60 megacycles
COOLING Convection and Radiation

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 6.3 volts
Current 2.80 to 3.15 amperes
Capacitances:
Grid-Filament 1.95 to 2.75 uufd
Grid-Plate 1.3 to 1.7 uufd
Plate-Filament 0.1 to 0.3 uufd

Base Small 4-pin
Socket Johnson 122-224, National XC-4 or CIR-4
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 4.38 inches
Maximum Diameter 1.44 inches
Net Weight 1.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	2000	0.075	25	7	1250	0.130*	3.4*	112*
C	Radio-Frequency Power Amplifier and Oscillator	2000	0.075	25	7	2000	0.063	4.0	100
C	Plate-Modulated Radio-Frequency Power Amplifier	1600	0.060	17	7	1600	0.053	3.1	68

*Two tubes.

35T

The 35T is a radiation-cooled triode with a 50-watt plate-dissipation capability. It is suitable for both audio-frequency and radio-frequency service; maximum ratings apply to 100 megacycles.

PLATE DISSIPATION 50 watts
FREQUENCY FOR MAXIMUM RATINGS 100 megacycles
COOLING Convection & Radiation

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 3.6 to 4.2 amperes
Capacitances:
Grid-Filament 3.0 to 5.0 uufd
Grid-Plate 1.4 to 2.2 uufd
Plate-Filament 0.08 to 0.23 uufd

Base Medium 4-pin bayonet
Socket Johnson 122-224, National XC-4 or CIR-4
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 5.500 inches
Maximum Diameter 1.813 inches
Net Weight 2.5 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	2000	0.150	50	15	2000	0.167*	4*	235*
C	Radio-Frequency Power Amplifier and Oscillator	2000	0.150	50	15	2000	0.125	6.8	200
C	Plate-Modulated Radio-Frequency Power Amplifier	1600	0.120	33	15	1500	0.090	11	105

*Two tubes.

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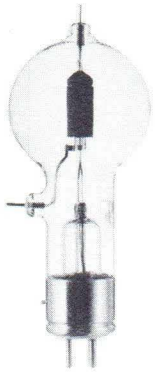
TRIODES



75TH

A general-purpose high-mu (20) triode with a plate-dissipation rating of 75 watts and with maximum ratings applicable to 40 megacycles. The 75TH may be used without forced-air cooling under most conditions.

PLATE DISSIPATION 75 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Convection & Radiation

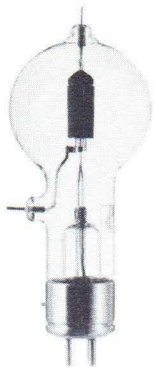
CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 5.8 to 6.6 amperes
Capacitances:
Grid-Filament 2.0 to 3.4 uufd
Grid-Plate 1.7 to 2.9 uufd
Plate-Filament 0.15 to 0.35 uufd

Base Medium 4-pin bayonet
Socket Johnson 122-224, National XC-4 or CIR-4
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 7.250 inches
Maximum Diameter 2.810 inches
Net Weight 3 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
B	Audio-Frequency Power Amplifier and Modulator	3000	0.225	75	16	2000	0.225*	3*	300*
C	Radio-Frequency Power Amplifier and Oscillator	3000	0.225	75	16	2000	0.150	10	225
C	Plate-Modulated Radio-Frequency Power Amplifier	2400	0.180	50	16	2000	0.110	6	170

*Two tubes.



75TL

A general-purpose low-mu (12) triode with a plate-dissipation rating of 75 watts and with maximum ratings applicable to 40 megacycles. The 75TL may be used without forced-air cooling under most conditions.

PLATE DISSIPATION 75 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Convection and Radiation

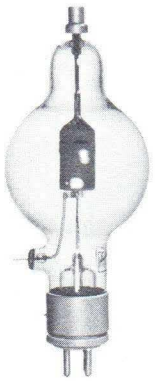
CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 5.8 to 6.6 amperes
Capacitances:
Grid-Filament 1.8 to 3.2 uufd
Grid-Plate 1.8 to 3.2 uufd
Plate-Filament 0.30 to 0.50 uufd

Base Medium 4-pin bayonet
Socket Johnson 122-224, National XC-4 or CIR-4
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 7.250 inches
Maximum Diameter 2.810 inches
Net Weight 3 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_1	Audio-Frequency Power Amplifier and Modulator	3000	0.225	75	—	2000	0.130*	0	110*
C	Radio-Frequency Power Amplifier and Oscillator	3000	0.225	75	13	2000	0.150	8	225
C	Plate-Modulated Radio-Frequency Power Amplifier	2400	0.180	50	13	2000	0.130	14	210

*Two tubes.



100TH

This radiation-cooled general-purpose high-mu (38) triode is useable at maximum ratings through 40 megacycles. Forced-air cooling is not required in most applications.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Convection and Radiation

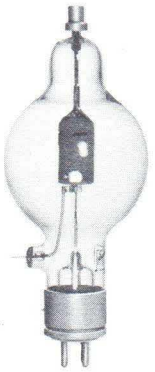
CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 5.8 to 6.6 amperes
Capacitances:
Grid-Filament 2.5 to 3.4 uufd
Grid-Plate 1.7 to 2.3 uufd
Plate-Filament 0.45 uufd

Base Medium 4-pin bayonet
Socket Johnson 122-224, National XC-4 or CIR-4
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 7.750 inches
Maximum Diameter 3.187 inches
Net Weight 4 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	3000	0.225	100	20	2500	0.250*	7.5*	425*
C	Radio-Frequency Power Amplifier and Oscillator	3000	0.225	100	20	3000	0.165	18	400
C	Plate-Modulated Radio-Frequency Power Amplifier	2500	0.180	65	20	2500	0.140	17	285

*Two tubes.



100TL

This radiation-cooled general-purpose low-mu (14) triode is useable at maximum ratings through 40 megacycles. Forced-air cooling is not required in most applications.

PLATE DISSIPATION 100 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Convection and Radiation

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 5.8 to 6.6 amperes
Capacitances:
Grid-Filament 2.3 uufd
Grid-Plate 2.0 uufd
Plate-Filament 0.4 uufd

Base Medium 4-pin bayonet
Socket Johnson 122-224, National XC-4 or CIR-4
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 7.750 inches
Maximum Diameter 3.187 inches
Net Weight 4 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	3000	0.225	100	15	2500	0.250*	10*	425*
C	Radio-Frequency Power Amplifier and Oscillator	3000	0.225	100	15	3000	0.165	20	400
C	Plate-Modulated Radio-Frequency Power Amplifier	2500	0.180	65	15	2500	0.140	23	285

*Two tubes.

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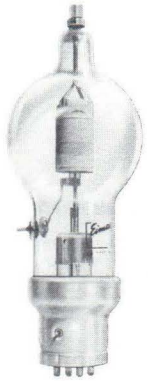
TRIODES



250TH

A high-power high-mu (37) triode for general usage. The 250TH may be employed at maximum ratings through 40 megacycles; forced-air cooling is not required in most applications.

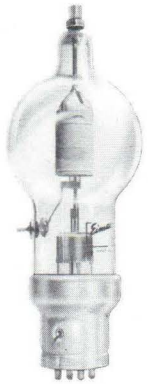
PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Convection and Radiation

CHARACTERISTICS

Filament: Thoriated tungsten		Base	Special 4-pin
Voltage	5.0 volts	Socket	Johnson 123-211, National XM-50
Current	9.7 to 11.2 amperes	Maximum Seal Temp.	200 °C
Capacitances:		Maximum Envelope Temp.	225 °C
Grid-Filament	3.7 to 5.1 uufd	Maximum Height	10.125 inches
Grid-Plate	2.2 to 3.0 uufd	Maximum Diameter	3.813 inches
Plate-Filament	0.6 uufd	Net Weight	10 ounces

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	4000	0.350	250	40	3000	0.560*	42*	1180*
C	Radio-Frequency Power Amplifier and Oscillator	4000	0.350	250	40	4000	0.313	39	1000
C	Plate-Modulated Radio-Frequency Power Amplifier	3200	0.280	165	40	3000	0.200	14	435

*Two tubes.



250TL

A high-power low-mu (14) triode for general usage. The 250TL may be employed at maximum ratings through 40 megacycles; forced-air cooling is not required in most applications.

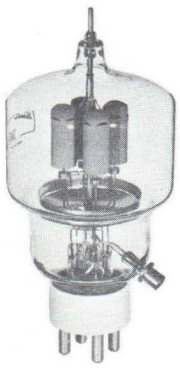
PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Convection and Radiation

CHARACTERISTICS

Filament: Thoriated tungsten		Base	Special 4-pin
Voltage	5.0 volts	Socket	Johnson 123-211, National XM-50
Current	9.7 to 11.2 amperes	Maximum Seal Temp.	200 °C
Capacitances:		Maximum Envelope Temp.	225 °C
Grid-Filament	3.2 to 4.3 uufd	Maximum Height	10.125 inches
Grid-Plate	2.5 to 3.5 uufd	Maximum Diameter	3.813 inches
Plate-Filament	0.4 to 0.7 uufd	Net Weight	10 ounces

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	4000	0.350	250	35	3000	0.500*	16*	1000*
C	Radio-Frequency Power Amplifier and Oscillator	4000	0.350	250	35	4000	0.310	33	1000
C	Plate-Modulated Radio-Frequency Power Amplifier	3200	0.280	165	35	3000	0.200	11	435

*Two tubes.



304TH

A unique high-mu (20) triode, actually four paralleled triodes in one envelope, often employed in pulse service where high peak currents are demanded. The 304TH is also an excellent choice for amplifier or oscillator applications up to 40 megacycles when high output power is required and where radiation cooling is desired.

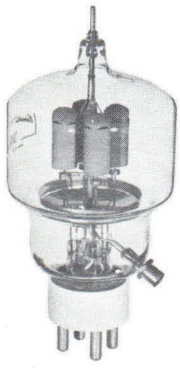
PLATE DISSIPATION 300 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Convection and Radiation

CHARACTERISTICS

Filament: Thoriated tungsten		Base	Special 4-pin
Voltage	5.0 volts	Socket	Johnson 124-213
Current	24.0 to 28.0 amperes	Maximum Seal Temp.	200 °C
Capacitances:		Maximum Envelope Temp.	225 °C
Grid-Filament	12 to 16 uufd	Maximum Height	7.625 inches
Grid-Plate	8 to 11 uufd	Maximum Diameter	3.563 inches
Plate-Filament	1.0 uufd	Net Weight	9 ounces

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	3000	0.900	300	60	3000	0.665*	14*	1400*
C	Radio-Frequency Power Amplifier and Oscillator	3000	0.900	300	60	3000	0.500	53	1200
C	Plate-Modulated Radio-Frequency Power Amplifier	2500	0.750	200	60	2500	0.400	29	800

*Two tubes.



304TL

A unique low-mu (12) triode, actually four paralleled triodes in one envelope, often employed in pulse service where high peak currents are demanded. The 304TL is also an excellent choice for amplifier or oscillator applications up to 40 megacycles when high output power is required and where radiation cooling is desired.

PLATE DISSIPATION 300 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Convection and Radiation

CHARACTERISTICS

Filament: Thoriated tungsten		Base	Special 4-pin
Voltage	5.0 volts	Socket	Johnson 124-213
Current	24.0 to 28.0 amperes	Maximum Seal Temp.	200 °C
Capacitances:		Maximum Envelope Temp.	225 °C
Grid-Filament	10.0 to 14.3 uufd	Maximum Height	7.625 inches
Grid-Plate	7.1 to 10.2 uufd	Maximum Diameter	3.563 inches
Plate-Filament	0.9 uufd	Net Weight	9 ounces

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_1	Audio-Frequency Power Amplifier and Modulator	3000	0.900	300	—	3000	0.444*	0	730*
AB_2	Audio-Frequency Power Amplifier and Modulator	3000	0.900	300	50	3000	0.800*	55*	1800*
C	Radio-Frequency Power Amplifier and Oscillator	3000	0.900	300	50	3000	0.500	40	1200
C	Plate-Modulated Radio-Frequency Power Amplifier	2500	0.700	200	50	2500	0.450	40	925

*Two tubes.

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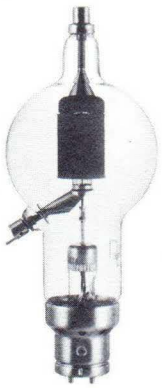
TRIODES



450TH

The 450TH is a high-power general-purpose triode with a 450-watt plate-dissipation rating and is cooled by radiation and convection. It has an amplification factor of 38; it is useable at maximum ratings through 40 megacycles.

PLATE DISSIPATION 450 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Radiation and Convection

CHARACTERISTICS

Filament: Thoriated tungsten		Base	Special 4-pin
Voltage	7.5 volts	Socket	Johnson 211 or National XM-50
Current	11.0 to 12.5 amperes	Maximum Seal Temp.	200 °C
Capacitances:		Maximum Envelope Temp.	225 °C
Grid-Filament	7.3 to 8.9 uufd	Maximum Height	12.625 inches
Grid-Plate	4.0 to 5.4 uufd	Maximum Diameter	5.125 inches
Plate-Filament	0.4 to 0.9 uufd	Net Weight	1.3 pounds

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	6000	0.600	450	80	5000	0.620*	20*	2200*
C	Radio-Frequency Power Amplifier and Oscillator	6000	0.600	450	80	5000	0.450	46	1800
C	Plate-Modulated Radio-Frequency Power Amplifier	4500	0.500	300	80	4500	0.345	29	1250

*Two tubes.

450TL

The 450TL is a high-power general-purpose triode with a 450-watt plate-dissipation rating and is cooled by radiation and convection. It has an amplification factor of 18; it is useable at maximum ratings through 40 megacycles.

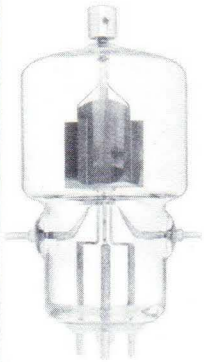
PLATE DISSIPATION 450 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Radiation and Convection

CHARACTERISTICS

Filament: Thoriated tungsten		Base	Special 4-pin
Voltage	7.5 volts	Socket	Johnson 211 or National XM-50
Current	11.0 to 12.5 amperes	Maximum Seal Temp.	200 °C
Capacitances:		Maximum Envelope Temp.	225 °C
Grid-Filament	5.6 to 7.6 uufd	Maximum Height	12.625 inches
Grid-Plate	4.2 to 5.7 uufd	Maximum Diameter	5.125 inches
Plate-Filament	0.5 to 0.8 uufd	Net Weight	1.3 pounds

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	6000	0.600	450	65	5000	0.620*	28*	2200*
C	Radio-Frequency Power Amplifier and Oscillator	6000	0.600	450	65	5000	0.450	42	1800
C	Plate-Modulated Radio-Frequency Power Amplifier	4500	0.500	300	65	4500	0.345	36	1250

*Two tubes.



592/3-200A3

This triode features short low-inductance grid leads and a center-tapped thoriated-tungsten filament. Maximum ratings apply at frequencies up to 150 megacycles; cooling is by radiation and forced air.

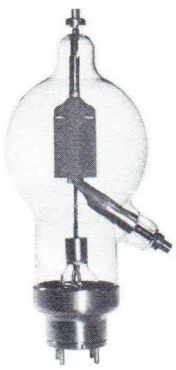
PLATE DISSIPATION 200 watts
FREQUENCY FOR MAXIMUM RATINGS 150 megacycles
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten		Maximum Seal Temp.	175 °C
Voltage	10.0 volts	Maximum Envelope Temp.	225 °C
Current	4.7 to 5.3 amperes	Maximum Height	6.0 inches
Capacitances:		Maximum Diameter	2.875 inches
Grid-Filament	3.6 uufd	Net Weight	6 ounces
Grid-Plate	3.3 uufd		
Plate-Filament	0.29 uufd		

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
B	Audio-Frequency Power Amplifier and Modulator	3500	0.250	200	25	3000	0.400*	20*	820*
C	Radio-Frequency Power Amplifier and Oscillator	3500	0.250	200	25	3500	0.228	15	600
C	Plate-Modulated Radio-Frequency Power Amplifier	2600	0.200	130	25	2500	0.200	19	375

*Two tubes.



750TL

The 750TL is a high-power triode capable of delivering three kilowatts output power at frequencies through 40 megacycles. It is cooled by radiation and convection in the usual installation.

PLATE DISSIPATION 750 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Radiation and Convection

CHARACTERISTICS

Filament: Thoriated tungsten		Base	Special 4-pin
Voltage	7.5 volts	Socket	Johnson 124-214
Current	20.0 to 22.7 amperes	Maximum Seal Temp.	200 °C
Capacitances:		Maximum Envelope Temp.	225 °C
Grid-Filament	7.0 to 10.0 uufd	Maximum Height	17.0 inches
Grid-Plate	5.0 to 7.0 uufd	Maximum Diameter	7.125 inches
Plate-Filament	0.9 to 1.5 uufd	Net Weight	2.9 pounds

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	10,000	1.0	750	100	6000	0.834*	46*	3500*
C	Radio-Frequency Power Amplifier and Oscillator	10,000	1.0	750	100	6000	0.625	125	3000
C	Plate-Modulated Radio-Frequency Power Amplifier	8000	0.8	500	100	6000	0.415	75	2000

*Two tubes.

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TRIODES

1000T

This high-power high-mu (35) triode enjoys a maximum plate-dissipation rating of 1000 watts; this and other maximum ratings apply through 50 megacycles. It is cooled by radiation and forced air.

PLATE DISSIPATION 1000 watts
FREQUENCY FOR MAXIMUM RATINGS 50 megacycles
COOLING Radiation and Forced Air

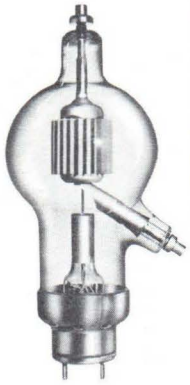
CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 14.5 to 16.5 amperes
Capacitances:
Grid-Filament 9.3 uufd
Grid-Plate 5.1 uufd
Plate-Filament 0.5 uufd

Base 50-watt jumbo 4-pin with air-conduction pipe
Socket Johnson 123-211
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 12.625 inches
Maximum Diameter 5.125 inches
Net Weight 1.25 pounds

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amp)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amp)	Drive Power (watts)	Output Power (watts)
AB_2	Audio-Frequency Power Amplifier and Modulator	7500	0.750	1000	80	6000	1.05*	60*	4600*
C	Radio-Frequency Power Amplifier and Oscillator	7500	0.750	1000	80	6000	0.667	60	3000
C	Plate-Modulated Radio-Frequency Power Amplifier	6000	0.600	665	80	6000	0.600	75	2935

*Two tubes.



1500T

This 1500-watt medium-mu (24) triode is intended for use in general-purpose high-power applications at frequencies up to 40 megacycles. It is cooled by radiation and forced air.

PLATE DISSIPATION 1500 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 22.0 to 25.0 amperes
Capacitances:
Grid-Filament 7.5 to 12.5 uufd
Grid-Plate 5.5 to 9.0 uufd
Plate-Filament 1.1 to 2.0 uufd

Base Special 4-pin
Socket Johnson 124-214
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 17.0 inches
Maximum Diameter 7.125 inches
Net Weight 3.0 pounds

Class of Operation	Type of Service	Maximum Ratings				Typical Operation			
		Plate Voltage (volts)	Plate Current (amps)	Plate Diss. (watts)	Grid Diss. (watts)	Plate Voltage (volts)	Plate Current (amps)	Drive Power (watts)	Output Power (watts)
B	Audio-Frequency Power Amplifier and Modulator	8000	1.25	1500	125	6000	1.650*	115*	7000*
C	Radio-Frequency Power Amplifier and Oscillator	8000	1.25	1500	125	7000	0.860	85	4500
C	Plate-Modulated Radio-Frequency Power Amplifier	6500	1.00	1000	125	6000	0.665	70	3000

*Two tubes.

2000T

The largest internal-anode triode in the comprehensive Eimac line. The 2000T has a medium-mu (23) and is intended for high-power general-purpose service at frequencies through 40 megacycles. It is cooled by radiation and forced air.

PLATE DISSIPATION 2000 watts
FREQUENCY FOR MAXIMUM RATINGS 40 megacycles
COOLING Radiation and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 10.0 volts
Current 22.0 to 25.0 amperes
Capacitances:
Grid-Filament 12.7 uufd
Grid-Plate 8.5 uufd
Plate-Filament 1.7 uufd

Base Special 4-pin
Socket Johnson 124-214
Maximum Seal Temp. 200 °C
Maximum Envelope Temp. 225 °C
Maximum Height 17.750 inches
Maximum Diameter 8.125 inches
Net Weight 3.5 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)
AB_2	Audio-Frequency Power Amplifier and Modulator	8000	1.75	2000	150	7000	1.80*	175*	8600*
C	Radio-Frequency Power Amplifier and Oscillator	8000	1.75	2000	150	7000	1.15	115	6000
C	Plate-Modulated Radio-Frequency Power Amplifier	6000	1.40	1350	150	6000	1.13	225	5400

*Two tubes.

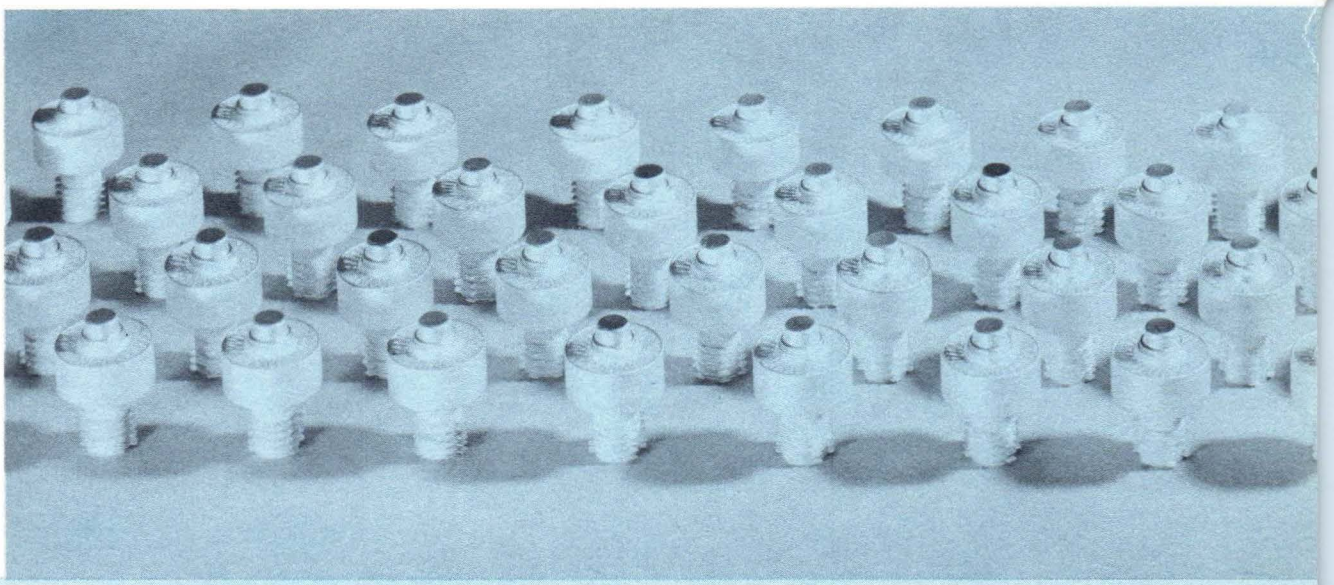
FIELD ENGINEERS WILL ASSIST YOU IN SELECTION AND APPLICATION OF ALL EIMAC PRODUCTS.

TETRODES AND PENTODE

Eimac power tetrodes are divided into two classifications. The internal-anode glass types—4-65A through 4-1000A—are radiation-cooled, high gain-amplifier tetrodes capable of operation well into the UHF range. The external-anode ceramic-and-metal types such as the 4CX250B and 4CX1000A are used in compact, high-frequency equipment where space is at a premium and dependability is essential.

One of Eimac's highly reliable tetrodes is the 4CX300A. Designed for such severe environments as guided missile applications, this tube is capable of withstanding conditions of high ambient temperatures and extreme vibration. The 4CN15A and 4CX125C are members of this rugged tetrode family.

▶ Indicates new item



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TETRODES

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 megacycles.

PLATE DISSIPATION 65 watts
FREQUENCY FOR MAXIMUM RATINGS 150 megacycles
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 uufd
Output 1.9 to 2.6 uufd
Feed-Through 0.12 uufd

Base 5-pin
Socket National HX29 or Johnson 122-101
Max. Seal Temp. 200 °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 Radio-Frequency Amplifier	2500	0.120	45	10	5	2500	250	0.110	2.6	230

*Two Tubes.

4-125A (4D21)

This 125-watt general-purpose power tetrode is usable at maximum ratings to 120 megacycles. 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 megacycles
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 uufd
Output 2.5 to 3.5 uufd
Feed-Through 0.07 uufd

Base 5-pin metal shell
Socket National HX100 or Johnson 122-275
Max. Envelope Temp. 225 °C.
Max. Base-Seal Temp. 170 °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 Radio-Frequency Amplifier	2500	0.200	85	20	5	2500	350	0.152	3.3	300

*Two Tubes.

4-250A (5D22)

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 uufd
Output 3.7 to 5.1 uufd
Feed-Through 0.14 uufd

Base 5-pin metal shell
Socket Eimac SK-400
Max. 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 Radio-Frequency Amplifier	3200	0.275	165	35	10	3000	400	0.225	3.2	510

*Two Tubes.

4-400A

A 400-watt general-purpose radial-beam tetrode, the 4-400A is ideal for any r-f application below 110 megacycles. 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 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 uufd
Output 4.2 to 6.6 uufd
Feed-Through 0.17 uufd

Base 5-pin metal shell
Socket Eimac SK-400
Max. Seal Temp. 200 °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 Radio-Frequency Amplifier	3200	0.275	270	35	10	3000	500	0.275	3.5	630

*Two Tubes.

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 megacycles
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 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. 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 Radio-Frequency Amplifier	5000	0.600	670	75	25	5500**	500	0.600	9	2630

**Below 30 mc. *Two Tubes.

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TETRODES

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 megacycles
COOLING Convection

CHARACTERISTICS

Cathode: Oxide-coated, Unipotential
Heater:
Voltage 6.0 volts
Current 2.2 to 3.2 amperes
Capacitances (Grounded Cathode):
Input 25 to 33 uufd
Output 3.5 to 4.5 uufd
Feed-Through 0.06 uufd

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

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 400 megacycles
COOLING Water and Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, Unipotential
Heater:
Voltage 6.0 volts
Current 9.5 to 11.5 amperes
Capacitances (Grounded Cathode):
Input 77 to 90 uufd
Output 11 to 13 uufd
Feed-Through 0.02 uufd

Base Special, breechblock
Socket Eimac SK-800 series
Max. Seal Temp. 200 °C
Max. Height 5.875 inches
Max. Diameter 2.625 inches
Net Weight 1.75 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 or Modulator	3000	1.0	2000	12	0	3000	325	1.8*	0	3360*
AB_1	Radio-Frequency Linear Power Amplifier—SSB	3000	1.0	2000	12	0	3000	325	0.9	0	1680

*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 megacycles and at slightly reduced ratings through the FM broadcast band.

PLATE DISSIPATION 10,000 watts
FREQUENCY FOR MAXIMUM RATINGS 30 megacycles
COOLING Water and Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 73 to 78 amperes
Capacitances (Grounded Filament):
Input 106 uufd
Output 18 uufd
Feed-Through 0.75 uufd

Base Special, Concentric
Socket Eimac SK-300
Max. Seal Temp. 200 °C
Max. Height 11.407 inches
Max. Diameter 4.656 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	10,000	250	—	7500	1500	7.18*	0	34,300*
AB_1	Radio-Frequency Linear Power Amplifier	7500	4.00	10,000	250	—	7500	1500	3.59	0	17,150

*Two tubes.

4CX125C

This tube type is a horizontally-finned version of the famous 4CX300A and is intended for use where transverse air cooling is desired. However, it is also useful in applications 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 maximum when air cooling is employed. It is ideally suited for applications where shock and/or vibration are experienced.

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

CHARACTERISTICS

Cathode: Oxide-coated, Unipotential
Heater:
Voltage 6.0 volts
Current 2.2 to 3.2 amperes
Capacitances (Grounded Cathode):
Input 25 to 33 uufd
Output 3.5 to 4.5 uufd
Feed-Through 0.06 uufd

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)	Output Power (watts)
C	Radio-Frequency Power Amplifier or Oscillator	2000	0.250	125	12	2	2000	250	0.250	2.9	390
C	Plate-Modulated Radio-Frequency Amplifier	1500	0.200	80	12	2	1500	250	0.200	1.7	235

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TETRODES

7580 (4CX250BA)

This new addition to the Eimac line of ceramic and metal tetrodes has high-gain characteristics which make it particularly suitable for class-AB_1 radio-frequency or audio-frequency service; of course, it is also an excellent power tetrode for class-C service. Maximum ratings apply at frequencies up to 500 megacycles.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 500 megacycles
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 uufd
Output 4.0 to 5.0 uufd
Feed-Through 0.06 uufd

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	350	0.250	2.9	390
C	Plate-Modulated Radio-Frequency Amplifier	1500	0.200	165	12	2	1500	250	0.200	1.7	235

*Two tubes.

4CX250B

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 megacycles. It is recommended for use in equipments of new design.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 500 megacycles
COOLING 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 uufd
Output 4.0 to 5.0 uufd
Feed-Through 0.06 uufd

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 Radio-Frequency Amplifier	1500	0.200	165	12	2	1500	250	0.200	1.7	235

*Two tubes.

4CX250F

The 4CX250F is a ceramic and metal radial-beam tetrode with electrical characteristics similar to the 4CX250B but designed for use where a heater voltage of 26.5 volts is more desirable. Maximum ratings apply to 500 megacycles but the tube is also an excellent choice for other r-f or a-f applications. It is recommended for use in equipments of new design.

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

CHARACTERISTICS

Cathode: Oxide-coated, Unipotential
Heater:
Voltage 26.5 volts
Current 0.50 to 0.62 ampere
Capacitances (Grounded Cathode):
Input 14.2 to 17.2 uufd
Output 4.0 to 5.0 uufd
Feed-Through 0.06 uufd

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 Radio-Frequency Amplifier	1500	0.200	165	12	2	1500	250	0.200	1.7	235

*Two tubes.

4CX250K

This coaxial-based tetrode is particularly useful as a CW r-f amplifier between 500 and 1200 megacycles; in pulse applications, its useful upper frequency is above 1500 megacycles. The 4CX250K requires a heater voltage of 6.0 volts; it is recommended for use in new equipment.

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

CHARACTERISTICS

Cathode: Oxide-coated, Unipotential
Heater:
Voltage 6.0 volts
Current 2.3 to 3.0 amperes
Capacitances (Grounded Cathode):
Input 25.0 to 29.0 uufd
Output 4.0 to 4.9 uufd
Feed-Through 0.05 uufd

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 Radio-Frequency Amplifier	1500	0.200	165	12	2	1500	250	0.200	1.7	235

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TETRODES

4CX250M

The 4CX250M is a coaxial-based tetrode with features which make it especially suitable for CW amplifier service at frequencies up to 1200 megacycles; in pulse service, this range is extended to above 1500 megacycles. This tube requires a heater voltage of 26.5 volts and is, therefore, suitable for use in certain specialized applications. It is recommended for use in new equipments.

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

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 26.5 volts
Current 0.53 to 0.68 ampere
Capacitances (Grounded Cathode):
Input 25.0 to 29.0 uufd
Output 4.0 to 4.9 uufd
Feed-Through 0.05 uufd

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 R-F Power Amplifier	1500	0.200	165	12	2	1500	250	0.200	1.7	235

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 megacycles, the 4CX300A is first choice for use in new equipments where shock and/or vibration are expected.

PLATE DISSIPATION 300 watts
FREQUENCY FOR MAXIMUM RATINGS 500 megacycles
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 2.2 to 3.2 amperes
Capacitances (Grounded Cathode):
Input 25 to 33 uufd
Output 3.5 to 4.5 uufd
Feed-Through 0.06 uufd

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 mc. only.

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 400 megacycles
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 9.5 to 11.5 amperes
Capacitances (Grounded Cathode):
Input 77 to 90 uufd
Output 11 to 13 uufd
Feed-Through 0.02 uufd

Base Special, breechblock
Socket Eimac SK-800 series
Max. Seal Temp. 200 °C
Max. Anode-Core Temp. 250 °C
Max. Height 4.75 inches
Max. Diameter 3.36 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	—	3000	325	1.8*	0	3360*
AB_1	Radio-Frequency Linear Power Amplifier—SSB	3000	1.0	1000	12	—	3000	325	0.9	0	1680

*Two tubes.

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 megacycles
COOLING Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 7.5 volts
Current 73 to 78 amperes
Capacitances (Grounded Filament):
Input 106 uufd
Output 18 uufd
Feed-Through 0.75 uufd

Base Special, concentric
Socket Eimac SK-300
Max. Seal Temp. 250 °C
Max. Anode-Core Temp. 250 °C
Max. Height 8.875 inches
Max. Diameter 4.875 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	—	7000	1250	3.65*	0	17,500*
AB_1	Radio-Frequency Linear Power Amplifier—SSB	7500	4.0	6000	250	—	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	5000	2.5	3500	250	75	5000	500	1.4	25	5800

*Two tubes.

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TETRODES

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 megacycles.

PLATE DISSIPATION 300 watts
FREQUENCY FOR MAXIMUM RATINGS 500 megacycles
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 uufd
Output 4.0 to 5.0 uufd
Feed-Through 0.06 uufd
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	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 R-F Power Amplifier	1500	0.200	165	12	2	1500	250	0.200	1.7	235

*Two tubes.

4W20,000A

This very-high-power water-cooled tetrode with electron-bombarded unipotential cathode suggests itself for use in circuitry where high peak currents are required. Accordingly, it finds wide acceptance in TV amplifiers, pulse modulators, linear accelerators, etc. Its water-cooled anode also allows its use in low-efficiency applications where high plate dissipation is encountered.

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

CHARACTERISTICS

Cathode: Thoriated tungsten, unipotential, bombardment-heated
D-C Voltage 1400 volts
D-C Current 1.8 amperes
Capacitances (Grounded Grid):
Input 75 to 87 uufd
Output 21 to 25.5 uufd
Feed-Through 0.04 to 0.06 uufd
Base Special, concentric
Max. Glass-Seal Temp. 150 °C
Max. Ceramic-Seal Temp. 250 °C
Max. Height 15.2 inches
Max. Diameter 5.013 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 (kws)
B_{TV}	Radio-Frequency Linear Amplifier—TV Visual Service	8000	15	20,000	200	60	7000	1200	6.0*	500	26
C	Radio-Frequency Power Amplifier	8000	15	20,000	200	60	7000	1200	3.4	830	13

*Peak synchronizing level.

4X150A

This 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 megacycles.

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

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 2.3 to 2.9 amperes
Capacitances (Grounded Cathode):
Input 14.5 to 17.0 uufd
Output 4.0 to 4.8 uufd
Feed-Through 0.05 uufd
Base 9-pin, special
Socker 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 R-F Power Amplifier	1600	0.200	165	10	2	1500	250	0.200	1.7	235

*Two tubes.

4X150D

A 26.5-volt heater makes the 4X150D suitable for service in many applications where this somewhat unusual heater voltage is encountered. This tube type has recently been improved and it now carries new plate-voltage and plate-dissipation ratings; present ratings allow 500 watts input at frequencies up to 150 megacycles.

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

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 26.5 volts
Current 0.50 to 0.62 ampere
Capacitances (Grounded Cathode):
Input 14.5 to 17.0 uufd
Output 4.0 to 4.8 uufd
Feed-Through 0.05 uufd
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 R-F Power Amplifier	1600	0.200	165	10	2	1500	250	0.200	1.7	235

*Two tubes.

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TETRODES AND PENTODE

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 megacycles and is useful in pulse service at frequencies up to 1500 megacycles.

PLATE DISSIPATION 150 watts
FREQUENCY FOR MAXIMUM RATINGS
500 megacycles CW
1500 megacycles 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 uufd
Output 4.0 to 4.9 uufd
Feed-Through 0.05 uufd

Base Coaxial
Max. Seal & Anode-Core Temp. 150 °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	150	12	2	1250	300	0.305*	9	250*
C	Plate-Modulated RF Power Amplifier	7000 pulse	**	150	12	2	7000 pulse	1000	6.0	1200 Mc. Osc.	17,000

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

4X250B

This 250-watt general-purpose external-anode tetrode is useful in many different applications where compactness and light weight are desirable features. It is equally suitable for audio-frequency, radio-frequency, or pulse service. Its maximum ratings allow an input power of 500 watts at frequencies up to 500 megacycles.

PLATE DISSIPATION 250 watts
FREQUENCY FOR MAXIMUM RATINGS 500 megacycles
COOLING 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 uufd
Output 4.0 to 5.0 uufd
Feed-Through 0.06 uufd

Base 9-pin, special
Socket Eimac SK-600 series
Max. Base-Seal Temp. 175 °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.

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 megacycles.

PLATE DISSIPATION 500 watts
FREQUENCY FOR MAXIMUM RATINGS
120 megacycles — class-C CW
220 megacycles — 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 uufd
Output 4.9 to 6.9 uufd
Feed-Through 0.1 uufd

Base 4-pin special
Socket Eimac SK-900
Max. Anode-Core Temp. 150 °C
Max. Seal Temp. 150 °C
Max. Height 4.750 inches
Max. Diameter 2.625 inches
Net Weight 1.17 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.

4E27A/5-125B

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

PLATE DISSIPATION 125 watts
FREQUENCY FOR MAXIMUM RATINGS 75 megacycles
COOLING Radiation and Convection

CHARACTERISTICS

Filament: Thoriated tungsten
Voltage 5.0 volts
Current 7.0 to 8.0 amperes
Capacitances (Grounded Filament):
Input 8.7 to 12.3 uufd
Output 3.5 to 5.9 uufd
Feed-Through 0.1 uufd

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	3200	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.

APPLICATION ENGINEERS AT EIMAC WILL HELP YOU WITH PRODUCT DESIGN AND EXPERIMENTATION.

PULSE MODULATORS

4PR60A

A high-vacuum, radial-beam tetrode intended for pulse-modulator service in circuits employing resistive loads. This tube unilaterally replaces the 715C and the 5D21.

MAXIMUM PLATE VOLTAGE
20 kilovolts

MAXIMUM PULSE PLATE CURRENT
18 amperes

COOLING
Radiation & Convection

CHARACTERISTICS

Cathode: Oxide-coated, unipotential

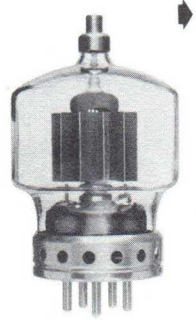
Heater:	
Voltage	26.0 volts
Current	1.95 to 2.35 amperes
Capacitances (Grounded Cathode):	
Input	35.0 to 50.0 uufd
Output	6.0 to 11.0 uufd
Feed-through	2.0 uufd
Socket	E. F. Johnson Co. No. 122-234
Maximum Seal Temp.	200 °C
Maximum Envelope Temp.	200 °C
Maximum Length	6.0 inches
Maximum Diameter	3.063 inches
Net Weight	12 ounces

MAXIMUM RATINGS

D-C PLATE VOLTAGE	20 kilovolts
D-C SCREEN VOLTAGE	1.5 kilovolts
PEAK PLATE CURRENT	18 amperes
PLATE DISSIPATION	60 watts
SCREEN DISSIPATION	8 watts

TYPICAL OPERATION

D-C Plate Voltage	20 kilovolts
D-C Screen Voltage	1.25 kilovolts
Pulse Plate Voltage	19 kilovolts
Pulse Plate Current	18 amperes
Peak Drive Power	770 watts
Peak Output Power	342 kilowatts
Duty	0.1 percent



4PR400A

A compact, high-vacuum, radial-beam tetrode incorporating a pyrovac plate and non-emitting grids, intended for pulse-modulator service. A new pulse modulator in the Eimac line, 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 & 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

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

TYPICAL OPERATION

D-C Plate Voltage	20 kilovolts
D-C 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

4PR1000A

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

MAXIMUM PLATE VOLTAGE
30 kilovolts

MAXIMUM PULSE PLATE CURRENT
8 amperes

COOLING
Radiation & Forced Air

CHARACTERISTICS

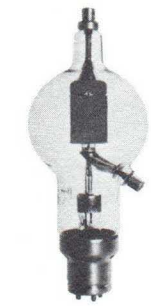
Filament: Thoriated tungsten	
Voltage	7.5 volts
Current	20.0 to 22.7 amperes
Capacitances (Grounded Cathode):	
Input	23.8 to 32.4 uufd
Output	6.8 to 9.4 uufd
Feed-through	0.35 uufd
Base	5-pin metal shell
Socket	Eimac SK-500
Max. Base-Seal Temp.	150 °C
Max. Plate-Seal Temp.	200 °C
Maximum Length	9.63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

MAXIMUM RATINGS

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

TYPICAL OPERATION

D-C Plate Voltage	30 kilovolts
D-C 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



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 & 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 uufd
Grid-Filament	7.0 to 12.0 uufd
Plate-Filament	2.0 uufd
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

D-C PLATE VOLTAGE	30 kilovolts
PEAK PLATE CURRENT	15 amperes
PLATE DISSIPATION	300 watts
GRID DISSIPATION	50 watts

TYPICAL OPERATION

D-C 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

EIMAC PRODUCTS ARE STOCKED BY DISTRIBUTORS IN EVERY MAJOR CITY THROUGHOUT THE COUNTRY.

OTHER PRODUCTS

Supplementing the production of numerous electron tubes, Eitel-McCullough, Inc. offers many accessory items ranging from heat-radiating connectors to klystron amplifier circuit assemblies. These accessory products include special air-system sockets and chimneys to provide efficient cooling — a comprehensive listing of RF finger stock for use where sliding contacts are required — a high-vacuum diffusion pump suitable for laboratory or production service.

Klystron amplifier circuit assemblies, not shown in this catalog, are of primary importance to the equipment designer. These assemblies — allowing the most efficient operation of each Eimac klystron — include an air-system socket, a magnetic frame, magnetic focusing coils and tunable external RF cavities. Use of the proper assembly assures a complete, integrated Eimac klystron-amplifier package.

▶ Indicates new item

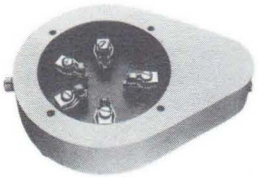
FIELD ENGINEERS WILL ASSIST YOU IN SELECTION AND APPLICATION OF ALL EIMAC PRODUCTS.

SOCKETS

SK-300

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-300	4CX5000A 4CW10,000A	None	.....	None	SK-306

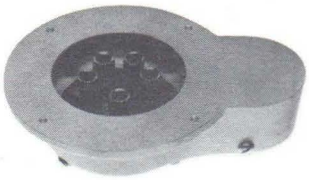
SK-306



SK-400

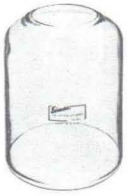
AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-400	4-400A 4-250A	None	.....	None	SK-406

SK-406



SK-500

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-500	4-1000A	None	.....	None	SK-506



SK-506

SK-602

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-602	4X150A 4X150D 4X250B 4CX250B 4CX250BA/7580 4CX250F 4W300B	2700	400	None	SK-606

SK-606

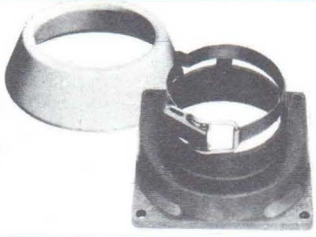
SK-600
SK-610

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-600	4X150A 4X150D 4X250B 4CX250B 4CX250BA/7580 4CX250F 4W300B	2700	400	None	SK-606
SK-610				Cathode	

SK-606

SK-620
SK-630

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-620	4X150A 4X150D 4X250B 4CX250B 4CX250BA/7580 4CX250F 4W300B	1100	400	None	SK-626 SK-636
SK-630				Cathode	



SK-626
SK-636

SK-640

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-640	4X150A 4X150D 4X250B 4CX250B 4CX250BA/7580 4CX250F 4W300B	None	.....	None	.....

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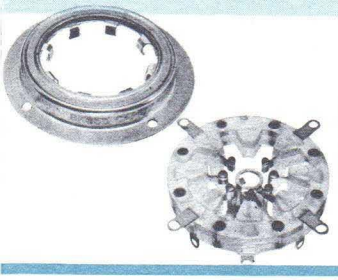
SOCKETS



SK-655
SK-650

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-650	4X150A 4X150D 4X250B 4CX250B 4CX250BA/7580 4CX250F 4W300B	None	.....	None	None
SK-655		1100	400		SK-626

SK-626

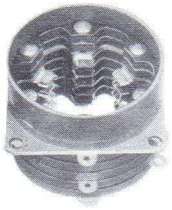
SK-700
SK-710

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-700	4CN15A 4CX125C 4CX300A	1100	400	1 Heater	SK-606
SK-710				1 Heater Cathode	

SK-606

SK-740

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-740	4CN15A 4CX125C 4CX300A	None	.....	None	.....



SK-760
SK-770

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-760	4CN15A 4CX300A	None	.....	None	Integral Chimney
SK-770				Screen	

SK-800A
SK-810
SK-890

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-800A	4CW2000A 4CX1000A	1500	400	None	SK-806
SK-810				Cathode 1 Heater	
SK-890*					

*Screen bypass capacitor isolated from screen contacts.

SK-806

SK-900

AIR-SYSTEM SOCKET	TUBE	SCREEN BYPASS CAPACITOR		GROUNDED CONTACTS	CHIMNEY
		CAPACITANCE (uufd)	VOLTAGE RATING (volts d-c)		
SK-900	4X500A	650	700	None	SK-906

SK-906

SK-604A TUBE EXTRACTOR

This new tube extractor is designed for use with Eimac planar triodes incorporating extracting holes in the top fin and with external-anode tetrodes of the 4X150, 4X250, and 4CX250 families. This extractor may also be used with tubes incorporating louvered coolers.

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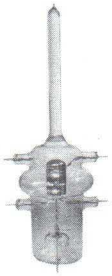
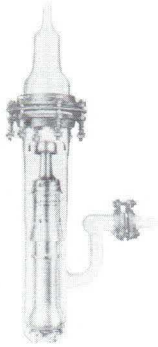
OTHER PRODUCTS

100 IG IONIZATION GAUGE



Essentially a triode vacuum tube for measuring pressures from 10^{-3} to less than 10^{-8} mm of mercury, constructed of "hard" glass for sealing directly to nonex glass vacuum systems.

HV-1 DIFFUSION PUMP



A fast, triple jet, air-cooled vacuum pump of the oil-diffusion type. When used with a suitable forepump and cold trap it is capable of reaching an ultimate vacuum better than 10^{-7} mm of mercury.

Maximum Forepressure	0.02 mm Hg
Pumping Speed (without baffle)	67 liters per second (4×10^{-4} to 4×10^{-6} mm Hg)
Heater Voltage	100 to 110 volts
Heater Current	1.7 amperes
Net Weight	6 pounds
Maximum Length	25 inches

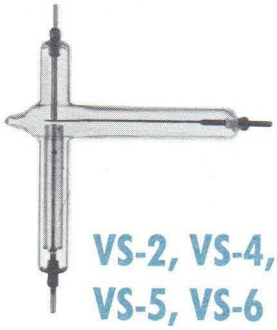
HEAT DISSIPATING CONNECTORS

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 machine 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
3C24	HR-1	HR-1	250TH-TL	HR-6	HR-3
4-65A	HR-6	....	250R	HR-6	....
4-125A	HR-6	....	304TH-TL	HR-7	HR-6
4-250A	HR-6	....	450TH-TL	HR-8	HR-8
4-400A	HR-6	....	592/3-200A3	HR-10	HR-5
4-1000A	HR-8	....	750TL	HR-8	HR-8
4E27A/5-125B	HR-5	....	866A	HR-8	....
4PR60A	HR-8	....	872A	HR-8	....
6C21	HR-8	HR-8	1000T	HR-9	HR-9
KY21A	HR-3	....	1500T	HR-8	HR-8
RX21A	HR-3	....	2000T	HR-8	HR-8
			8020(100R)	HR-8	....



VACUUM SWITCHES

VS-2, VS-4, VS-5, VS-6

Eimac offers four vacuum switches intended primarily for r-f service. All have similar characteristics and similar ratings, though each differs from the others in some respect. They are rated at 20 kilovolts peak r-f in the "open" position. In the "closed" position, they can carry 7.5 amperes r-f current at frequencies to 15 megacycles, and 5 amperes from 15 to 30 megacycles. They are designed to be activated by a separate 12- or 24-volt coil, also available from Eitel-McCullough, Inc. The Application Engineering Department at the San Carlos offices should be contacted if additional data or specific recommendations are desired.

FIELD ENGINEERS WILL ASSIST YOU IN SELECTION AND APPLICATION OF ALL EIMAC PRODUCTS.

OTHER PRODUCTS

WATER LOADS

WL-110

MAX. AVG. POWER DISSIPATION	**15 kilowatts**
FREQUENCY RANGE	**450-1200 megacycles**
MAXIMUM VSWR	**1.28:1**
IMPEDANCE	**50 ohms**

The WL-110 is designed to dissipate the r-f power directly into the coolant. The maximum VSWR listed above results from the use of distilled water. Use of other coolants, such as tap water or a 60/40 solution of ethylene glycol and distilled water, will result in a lower maximum VSWR.

CHARACTERISTICS

R-F Coupling	3 1/8-inch AIE Flange
Coolant Connections	1 1/16" Am. Std. Hose
Maximum Outlet Coolant Temp.	65 °C
Water Flow at Max. Power (10 °C temp. rise)	5.7 gpm
Maximum Diameter	5.14 inches
Maximum Length	40.0 inches
Operating Position:	Horizontal or r-f input end down

WL-120

MAX. AVG. POWER DISSIPATION	**20 kilowatts**
FREQUENCY RANGE	**500-1200 megacycles**
MAXIMUM VSWR	**1.15:1**
IMPEDANCE	**50 ohms**

The WL-120 is designed to dissipate the r-f power directly into the coolant. The maximum VSWR listed above results from the use of a 60/40 solution of ethylene glycol and distilled water. Use of tap water will result in a lower maximum VSWR.

CHARACTERISTICS

R-F Coupling	3 1/8-inch AIE Flange
Coolant Connections	1 1/16" Am. Std. Hose
Maximum Static Coolant Pressure	90 psig
Maximum Outlet Coolant Temp.	65 °C
Water Flow at Max. Power (10 °C temp. rise)	10 gpm
Maximum Width	6.69 inches
Maximum Length	37.88 inches
Operating Position:	Horizontal or r-f input end down

WL-130

MAX. AVG. POWER DISSIPATION	**20 kilowatts**
FREQUENCY RANGE	**320-1200 megacycles**
MAXIMUM VSWR	**1.1:1**

The WL-130 is designed to dissipate the r-f power directly into the coolant. The maximum VSWR listed above results from the use of a 60/40 solution of ethylene glycol and distilled water. Use of tap water will result in a lower maximum VSWR.

CHARACTERISTICS

R-F Coupling	3 1/8-inch AIE Flange
Coolant Connections	1 1/16" Am. Std. Hose
Maximum Static Coolant Pressure	90 psig
Maximum Outlet Coolant Temp.	65 °C
Water Flow at Max. Power (10 °C temp. rise)	10 gpm
Maximum Diameter	6.69 inches
Maximum Length	79.94 inches
Operating Position:	Horizontal or r-f input end down

WL-140

MAX. AVG. POWER DISSIPATION	**20 kilowatts**
FREQUENCY RANGE	**225-1200 megacycles**
MAXIMUM VSWR	**1.15:1**
IMPEDANCE	**50 ohms**

The WL-140 is designed to dissipate the r-f power directly into the coolant. The maximum VSWR listed above results from the use of a 60/40 solution of ethylene glycol and distilled water. Use of tap water will result in a lower maximum VSWR.

CHARACTERISTICS

R-F Coupling	3 1/8-inch AIE Flange
Coolant Connections	1 1/16" Am. Std. Hose
Maximum Static Coolant Pressure	90 psig
Maximum Outlet Coolant Temp.	65 °C
Water Flow at Max. Power (10 °C temp. rise)	10 gpm
Maximum Diameter	6.69 inches
Maximum Length	151.94 inches
Operating Position:	Horizontal or r-f input end down

WL-200

MAX AVG. POWER DISSIPATION	**24 kilowatts**
FREQUENCY RANGE	**1700-2400 megacycles**
MAXIMUM VSWR	**1.1:1**

The WL-200 is designed to dissipate the r-f power directly into the coolant. The maximum VSWR listed above results from the use of distilled water. Use of a different coolant, such as a 60/40 solution of ethylene glycol and distilled water, will result in a lower maximum VSWR.

CHARACTERISTICS

R-F Coupling	RG-104/U waveguide
Coolant Connections	3/8-18 pipe thread
Maximum Static Coolant Pressure	30 psig
Maximum Outlet Coolant Temp.	65 °C
Water Flow at Max. Power (15 °C temp. rise)	6 gpm
Maximum Width	8.9 inches
Maximum Height	4.3 inches
Maximum Length	37.6 inches
Operating Position:	Axis horizontal or vertical (r-f input end down).

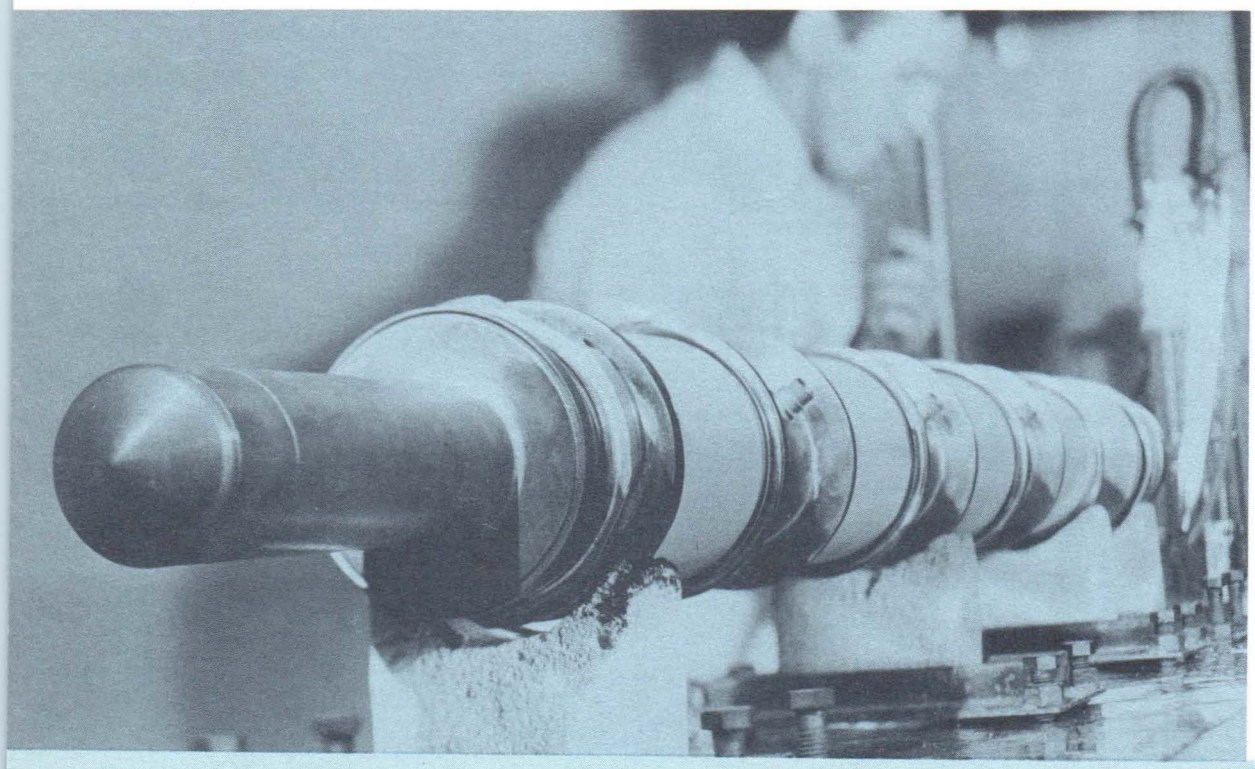
APPLICATION ENGINEERS AT EIMAC WILL HELP YOU WITH PRODUCT DESIGN AND EXPERIMENTATION.

DEVELOPMENTAL TUBES

Immediate customer needs continually affect product planning at Eitel-McCullough, Inc. Extending the capabilities of electron-power tubes, Eimac constantly meets the expanding requirements of systems designers throughout the world. Complete vacuum-tube development facilities enable Eimac to either improve existing products or advance totally new design concepts in its approach to specific customer projects.

Experimental tubes presently under development will be in future quantity production. Listed as X-numbered items in the catalog, these tubes are available on a limited basis. Y-numbered tubes and accessories are also available on special order.

➧ Indicates new item



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DEVELOPMENTAL TUBES

AMPLIFIER KLYSTRONS

X602K

The X-602K is a ceramic and metal, four-cavity, magnetically-focused, pulse amplifier klystron employing the Eimac Modulating Anode. The electrical characteristics of the X-602K for CW operation are similar to those of the 4KM170,000LA.

The external-cavity design permits a wide tuning range and allows repeated tuning operations without damage to the vacuum seals.

The Eimac Klystron Amplifier Circuit Assembly (H-128) has been designed for use with this tube to cover the specified frequency range.

FREQUENCY RANGE
375 - 500 Mc

MINIMUM PULSE OUTPUT POWER
150 kilowatts

MINIMUM AVERAGE OUTPUT POWER
50 kilowatts

TYPICAL POWER GAIN
45 db

CHARACTERISTICS

Cathode: Eimac Matrix, unipotential	
Heater:	
Voltage	11.0 volts
Current	47.5 amperes
RF Connections:	
Input	50-ohm Type N
Output	6 1/8 inch 50-ohm line
Net Weight (Tube)	196 pounds
Net Weight (Circuit Assembly)	1792 pounds
Maximum Dimensions (Tube):	
Length	89.13 inches
Diameter	9.51 inches
Maximum Dimensions (Tube and Circuit Assembly):	
Length	103.0 inches
Diameter	38.25 inches
Cooling	Liquid and Forced Air

MAXIMUM PULSE RATINGS

D-C BEAM VOLTAGE	50 kv
PEAK MOD. ANODE VOLTAGE	50 kVdc
D-C FOCUS ELECTRODE VOLTAGE	−1000 Vdc
D-C BODY CURRENT	250 mAdc
COLLECTOR DISSIPATION	170 kW
PEAK BEAM CURRENT	9.0 a
AVERAGE BEAM CURRENT	5.0 Adc

TYPICAL OPERATIONS (Pulse Amplifier)

RF Frequency	390 Mc
Peak Output Power	155 kw
Drive Power	3.0 W
Average Output Power	34 kW
D-C Beam Voltage	45 kVdc
D-C Beam Current	1 69 Adc
Peak Mod. Anode Voltage	45 kv
Peak Beam Current	7.7 a

X632

The X-632 is a ceramic and metal, four-gap, internal-cavity, pulse-amplifier klystron designed for the high-power, low-duty service encountered in linear accelerator or radar applications.

The fixed output coupling is pre-adjusted to provide optimum output power when the klystron is operated in linear accelerator or radar service.

The Eimac Klystron Circuit Assembly for the X-632 includes the necessary electro-magnetic focusing coils, the magnetic frame, klystron mount, socket and other hardware essential to the operation of this tube.

FREQUENCY RANGE
2845 - 2865 Mc

PULSE CW OUTPUT POWER
10 megawatts

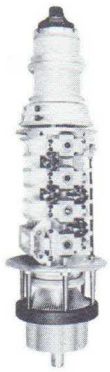
TYPICAL POWER GAIN
45 db

CHARACTERISTICS

Cathode: Oxide coated, unipotential	
Heater:	
Voltage	11 volts
Current	25 amperes
Getter:	
Voltage	6 volts
Current	33 amperes
RF Connections:	
Input	50-ohm Type N
Output	WR-284 waveguide
Maximum Dimensions (Tube):	
Length	53.19 inches
Diameter	15.0 inches
Maximum Dimensions (Tube and Circuit Assembly):	
Length	53.19 inches
Diameter	31 inches
Cooling	Liquid and forced air

SPECIFICATIONS

PULSE BEAM VOLTAGE	235 kv
COLLECTOR DISSIPATION	40 kW
PULSE BEAM CURRENT	105 a
PULSE LENGTH	6 - 10 μsec
DUTY	0.167 %
EFFICIENCY	40 %



X700

The Eimac X-700 is a four-cavity, ceramic and metal, magnetically focused, pulse power - amplifier klystron designed for use under conditions of severe environmental extremes. The resonant cavities of this tube are an integral part of the klystron structure, but are completed and tuned outside the vacuum envelope.

The output cavity loading is adjustable by means of a variable iris.

This klystron employs the Eimac Modulating Anode which provides a convenient means of pulse modulating the output without changing the beam voltage.

FREQUENCY RANGE
2400 - 2900 Mc

MINIMUM PULSE OUTPUT POWER
20 kilowatts

TYPICAL POWER GAIN
40 db

CHARACTERISTICS

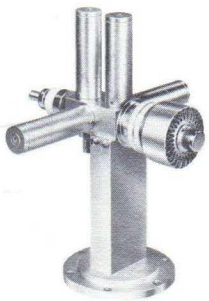
Cathode: Oxide-coated, unipotential	
Heater:	
Voltage	7.5 volts
Current	5.5 amperes
RF Connections:	
Input	50-ohm TNC
Output	WR-284 waveguide
Net Weight (Tube):	39 pounds
Net Weight (Circuit Assembly):	160 pounds
Maximum Dimensions (Tube):	
Length	24 inches
Diameter	7 inches
Maximum Dimensions (Tube and Circuit Assembly):	
Length	24 inches
Diameter	17 inches
Cooling	Forced air

TENTATIVE MAXIMUM RATINGS

D-C BEAM VOLTAGE	28 kVdc
PEAK MOD. ANODE VOLTAGE	14 kV
D-C FOCUS ELECTRODE VOLTAGE	−500 Vdc
COLLECTOR DISSIPATION	2500 W

TYPICAL OPERATION (Pulse Amplifier)

RF Frequency	2500 Mc
Peak Output Power	20 kW
Average Output Power	1 kW
Drive Power	2 W
D-C Beam Voltage	21 kVdc
D-C Beam Current	0.138 Adc
Peak Mod. Anode Voltage	10.5 kV
Peak Beam Current	2.77 A
Duty	5 %
Pulse Length	50 μsec



X563K, L, M

The X-563 series tubes are ceramic and metal, four-gap, internal-cavity, power-amplifier klystrons designed primarily to extend the range and increase the reliability of existing microwave communication systems.

Each resonant cavity is tuned by means of a single, dielectric slug-tuner with a tuning rate of approximately 35 megacycles per turn.

The Eimac Klystron Amplifier Circuit Assembly designed for this klystron includes the electro-magnetic coils, magnetic frame, socket and other hardware essential to the operation of this tube.

FREQUENCY RANGE

X-563L	5400 - 5800 Mc
X-563M	5900 - 6400 Mc
X-563K	6500 - 7100 Mc

MINIMUM CW OUTPUT POWER
50 watts

TYPICAL POWER GAIN
35 db

CHARACTERISTICS

Cathode: Oxide-coated, unipotential	
Heater:	
Voltage	6.3 volts
Current	1.0 ampere
R-F Connections:	
Input	Type BNC
Output	WR-137 waveguide
Net Weight:	
Klystron	3 pounds
Circuit Assembly	16 pounds
Maximum Dimensions (Klystron):	
Length (with waveguide)	7.5 inches
Width	6.25 inches
Depth	6.25 inches
Maximum Dimensions (Klystron in circuit assembly):	
Length	9.5 inches
Diameter	8.25 inches
Cooling	Forced air

MAXIMUM RATINGS

D-C BEAM VOLTAGE	3000 Vdc
D-C BEAM CURRENT	150 mAdc
D-C FOCUS ELECTRODE VOLTAGE	−125 Vdc
D-C BODY CURRENT	25 mAdc
COLLECTOR DISSIPATION	450 W

TYPICAL OPERATION (Broad-Band, CW Amplifier)

Output Power	60 W
Drive Power	20 mW
D-C Beam Voltage	3000 Vdc
D-C Beam Current	130 mAdc
3-db Band-Width	
X-563L	9 Mc
X-563M	10 Mc
X-563K	13 Mc

FIELD ENGINEERS WILL ASSIST YOU IN SELECTION AND APPLICATION OF ALL EIMAC PRODUCTS.

DEVELOPMENTAL TUBES

AMPLIFIER KLYSTRONS

X768

The X768 is a ceramic and metal, three-cavity, magnetically-focused, wide-band, klystron amplifier designed for tropo-scatter communication applications, where high reliability is essential. The klystron gain has been adjusted so that, under better than average propagation conditions, the X768 driver power alone will be sufficient to support the circuit.

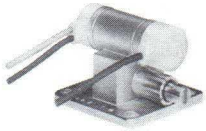
Adjustable cavity loading, external to the vacuum envelope, is provided for realizing the required band-width and for compensating for the effects of load mismatches.

The Eimac Klystron Circuit Assembly for the X768 includes the necessary electro-magnetic focusing coils, magnetic frame, klystron mount, socket, and other components required to complete an amplifier package, with the exception of power supplies, control circuits, and metering.

TENTATIVE SPECIFICATIONS

Frequency range	755 - 985 Mc
CW Output Power	50 - 75 Kw
Three-db Bandwidth	7 Mc
Maximum Beam Voltage	30 kVdc
Efficiency	35 Percent
Focusing	Electro-magnetic
Number of Cavities	3
Input Coupling	3 1/8 inch 50-ohm line
Output Coupling	WR-975 waveguide
Cooling	Liquid and forced air

REFLEX KLYSTRON



Y-222

The Y-222 is a special version of the ruggedized, ceramic and metal 1K20-series reflex klystrons. This tube was designed primarily for use in mobile and fixed-station commercial carrier-system applications, and is capable of delivering a minimum output power of 70 milliwatts over the frequency range of 10.5-10.7 kilomegacycles.

Y-179 DIODE

This close-spaced planar diode has been employed as a T-R switch tube in several high-power radar equipments. It is similar in appearance and construction to the familiar 2C39A but a new and unusual cathode material is employed. This EMA (Eimac matrix) cathode has excellent high-frequency characteristics and also is not easily damaged by internal sparking.

More detailed specifications and specific application data are available on request.

TRIODES

X762

Here is a new ceramic-metal medium-mu (20) 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 110 megacycles, or as a grounded-grid F-M amplifier developing 20 kilowatts useful output power.

PLATE DISSIPATION 10,000 watts
FREQUENCY FOR MAXIMUM RATINGS 110 megacycles
COOLING Forced Air

CHARACTERISTICS

Filament: Thoriated tungsten		Base	Coaxial
Voltage	7.5 volts	Socket	Eimac X615A
Current	102 amperes	Max. Seal Temp.	250 °C
Capacitances:		Max. Anode-Core Temp.	250 °C
Grid-Filament	60 uuf	Max. Height	8.25 inches
Grid-Plate	40 uuf	Max. Diameter	7.00 inches
Plate-Filament	0.2 uuf	Net Weight	12 pounds

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Maximum Ratings: Plate Current (amps)	Maximum Ratings: Plate Diss. (watts)	Typical Operation: Plate Voltage (volts)	Typical Operation: Plate Current (amps)	Typical Operation: Drive Power (watts)	Typical Operation: Output Power (watts)
C	Industrial Oscillator — 110 mc	7000	4.0	10,000	7000	4.0	—	20,000
C	F-M Amplifier — Grounded Grid	7000	4.0	10,000	7000	4.0	3700	23,000
B	Linear Amplifier, Peak Envelope Conditions, Grounded Grid	7000	4.0	10,000	7000	4.0	2000	20,000
C	Plate-Modulated R-F Amplifier, Carrier Conditions	5000	3.0	10,000	5000	3.0	450	11,400

X685C

This version of the 3CX100A5 features an extended grid-anode ceramic insulator and consequently may be employed at maximum ratings at altitudes up to 70,000 feet. It is intended for use in airborne equipments where the combination of altitude and pulse voltages precludes the use of the standard 3CX100A5.

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

CHARACTERISTICS

Cathode: Oxide-coated, unipotential		Base	Coaxial
Heater:		Max. Seal Temp.	250 °C
Voltage	6.0 volts	Max. Anode-Core Temp.	250 °C
Current	0.90 to 1.05 amperes		
Capacitances:		Max. Height	2.7 inches
Grid-Cathode	5.6 to 7.0 uufd	Max. Diameter	1.264 inches
Grid-Plate	1.95 to 2.15 uufd	Net Weight	2.6 ounces
Plate-Cathode	0.035 uufd		

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Maximum Ratings: Cathode Current (amps)	Maximum Ratings: Plate Diss. (watts)	Maximum Ratings: Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Typical Operation: Plate Current (amp)	Typical Operation: Drive Power (watts)	Typical Operation: Output Power (watts)
C	Radio-Frequency Power Amplifier and Oscillator	1000	0.125	100	2	900	0.090	—	15
C	Grid-Pulsed Operation	1200	2 (peak)	100	2				
C	Plate-Pulsed Operation	3500	2 (peak)	100	2				

X779

This special tube type, utilizing a 26.5-volt heater, is otherwise identical to the famous Eimac 3CX100A5. Here too, tight dimensional tolerances and exacting electrical testing result in greater uniformity than that found in other UHF planar triodes.

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

CHARACTERISTICS

Cathode: Oxide-coated, unipotential		Base	Coaxial
Heater:		Max. Seal Temp.	250 °C
Voltage	26.5 volts	Max. Anode-Core Temp.	250 °C
Current	0.225 ampere		
Capacitances:		Max. Height	2.701 inches
Grid-Cathode	5.6 to 7.0 uufd	Max. Diameter	1.264 inches
Grid-Plate	1.95 to 2.15 uufd	Net Weight	2.5 ounces
Plate-Cathode	0.035 uufd		

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Maximum Ratings: Cathode Current (amp)	Maximum Ratings: Plate Diss. (watts)	Maximum Ratings: Grid Diss. (watts)	Typical Operation: Plate Voltage (volts)	Typical Operation: Plate Current (amp)	Typical Operation: Drive Power (watts)	Typical Operation: Output Power (watts)
C	Radio-Frequency Power Amplifier and Oscillator—500 megacycles	1000	0.125	100	2	800	0.080	6	27
C	Radio-Frequency Power Amplifier and Oscillator—2500 megacycles	1000	0.125	100	2	900	0.090	—	15
C	Plate-Modulated Radio-Frequency Power Amplifier and Oscillator — 500 megacycles	600	0.100	70	2	600	0.065	5	16

APPLICATION ENGINEERS AT EIMAC WILL HELP YOU WITH PRODUCT DESIGN AND EXPERIMENTATION.

DEVELOPMENTAL TUBES

TETRODES

X578G

This special 4CX300A features a 26.5-volt heater which makes it an ideal choice for use in many applications, such as rockets, missiles, etc., where this supply voltage plus shock and vibration are to be found. Its internal construction is such that reliable operation is obtained at high levels of acceleration.

PLATE DISSIPATION 300 watts
FREQUENCY FOR MAXIMUM RATINGS 500 megacycles
COOLING Forced Air

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 26.5 volts
Current 0.68 ampere
Capacitances (Grounded Cathode):
Input 25 to 33 uufd
Output 3.5 to 4.5 uufd
Feed-Through 0.06 uufd
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 (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	2000	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 mc only.

X578H

A special version of the 4CX125C featuring a 26.5-volt heater for use where this supply voltage is desirable or necessary. Its other electrical and physical characteristics are identical to those of the 4CX125C. It is particularly suitable for service where shock and/or vibration are experienced, as in rockets, missiles, etc.

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

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 26.5 volts
Current 0.68 ampere
Capacitances (Grounded Cathode):
Input 25 to 33 uufd
Output 3.5 to 4.5 uufd
Feed-Through 0.06 uufd
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)	Output Power (watts)
C	Radio-Frequency Power Amplifier and Oscillator	2000	0.250	125	12	2	2000	250	0.250	2.9	390
C	Plate-Modulated R-F Power Amplifier	1500	0.200	80	12	2	1500	250	0.200	1.7	235

X578J

This ceramic and metal tetrode has electrical and physical characteristics identical to those of the 4CN15A with the exception of heater voltage (26.5 volts) and current (0.68 ampere). Like the 4CN15A, it is also designed for use in low-duty pulse applications or others where size and weight are important factors.

PLATE DISSIPATION
15 watts

FREQUENCY FOR MAXIMUM RATINGS
500 megacycles

COOLING
Convection

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 26.5 volts
Current 0.68 ampere
Capacitances (Grounded Cathode):
Input 25 to 33 uufd
Output 3.5 to 4.5 uufd
Feed-Through 0.06 uufd
Base Special, breechblock
Socket Eimac SK-700 series
Maximum Seal Temp. 250 °C
Max. Anode-Core Temp. 250 °C
Maximum Height 2.5 inches
Maximum Diameter 0.894 inch
Net Weight 2.5 ounces

X593V

This ceramic-metal tetrode has internal spacings which allow its use in pulse-modulator applications. Additionally, its external forced-air-cooled anode makes it suitable for service where a high duty factor prevents the use of conventional pulse modulators. Its internal construction is exceptionally strong and features an integrated cathode, control grid, and screen grid. It should be considered for use wherever shock, vibration, or high temperatures are expected and when a pulse current of less than 18 amperes is demanded.

More detailed specifications and specific application data are available on request.

EIMAC PRODUCTS ARE STOCKED BY DISTRIBUTORS IN EVERY MAJOR CITY THROUGHOUT THE COUNTRY.

DEVELOPMENTAL TUBES

TETRODES

X651H

This version of the new 7580 ceramic and metal tetrode employs a 26.5-volt heater. Accordingly, it is especially recommended for applications where this supply voltage plus the high-gain characteristics of the 7580 are requisites.

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

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 26.5 volts
Current 0.68 ampere
Capacitances (Grounded Cathode):
Input 16.0 to 18.5 uufd
Output 9.0 to 5.0 uufd
Feed-Through 0.06 uufd
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	350	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.

Y-169

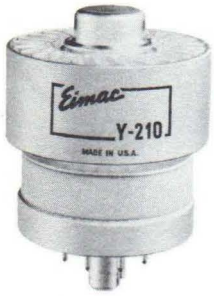
This special version of the horizontally-finned 4CX125C is nickel and rhodium plated to allow its immersion in liquids which are corrosive to silver. Of course, it may be used with forced-air cooling, in which case its plate dissipation rating is 125 watts. Its internal construction makes it a good choice for applications where shock and/or vibration are encountered.

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

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 6.0 volts
Current 2.2 to 3.2 amperes
Capacitances (Grounded Cathode):
Input 25 to 33 uufd
Output 3.5 to 4.5 uufd
Feed-Through 0.06 uufd
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)	Output Power (watts)
C	Radio-Frequency Power Amplifier and Oscillator	2000	0.250	125	12	2	2000	250	0.250	2.9	390
C	Plate-Modulated R-F Power Amplifier	1500	0.200	80	12	2	1500	250	0.200	1.7	235



Y-210

A special version of the ceramic and metal 4CX250B intended for use where small size and light weight are important. It may be cooled by liquid immersion or by the use of a suitable heat sink; maximum allowable plate dissipation is determined by the adequacy of the cooling supplied but in no case should it exceed 250 watts.

FREQUENCY FOR MAXIMUM RATINGS 500 megacycles
COOLING Convection

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 uufd
Output 4.0 to 5.0 uufd
Feed-Through 0.06 uufd
Base 9-pin special
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 3 ounces

Class of Operation	Type of Service	Maximum Ratings: Plate Voltage (volts)	Plate Current (amp)	Screen Diss. (watts)	Grid Diss. (watts)
AB_1	Radio-Frequency Linear Power Amplifier—SSB	2000	0.250	12	2
C	Radio-Frequency Power Amplifier and Oscillator	2000	0.250	12	2

PULSE MODULATOR

X629

This very-high-mu triode, designed for use in klystron switch-tube applications, represents a new answer to the requirement for a high-voltage tube with moderate current-carrying capability. Its modulating anode, while requiring fairly high drive voltage, demands little in the way of drive power. It is usually cooled by immersion in oil or other suitable insulating liquid.

MAXIMUM COLLECTOR VOLTAGE
120 kilovolts

MAXIMUM PEAK CATHODE CURRENT
5 amperes

COOLING
Oil Immersion

CHARACTERISTICS

Cathode: Oxide-coated, unipotential
Heater:
Voltage 7.5 volts
Current 5.5 amperes
Capacitances:
Input (approx.) 10 uufd
Output (approx.) 2.5 uufd
Base Special, concentric
Recommended Socket SK-200
Maximum Temperature 120 °C
Max. Length (approx.) 12 inches
Max. Diameter (approx.) 5 inches
Net Weight 4.9 pounds

MAXIMUM RATINGS

Collector Voltage 120 kVdc
Mod. Anode Voltage 15 kV
Focus Electrode Voltage −200 Vdc
Cathode Current:
Peak 5.0 a
Average 500 mAdc
Av. Collector Diss. 500 W
Av. Modulating Anode Dissipation 25 W

TYPICAL OPERATION

Collector Voltage 60 kVdc
Modulator Anode Voltage 6.6 kv
Focus Electrode Voltage −100 Vdc
Cathode Current:
Peak 1.5 a
Average 5 mAdc
Av. Collector Diss. 50 W
Tube Drop 700 Vdc

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DEVELOPMENTAL TUBES

PULSE MODULATORS

X643F

This pulse-modulator tetrode has been designed for use where severe vibration and/or shock are encountered. Its electrical characteristics are similar to those of the widely accepted 4PR60A with the exception of heater voltage, which is 6.0 volts versus 26.5 volts. Physically, the tubes are also similar; however, differences in internal construction have resulted in the improved environmental characteristics. Externally, base pins have been shortened to allow improved socketing.

Maximum ratings for the X643F are comparable to those for the 4PR60A. Cooling is by radiation and convection in most installations.

Y-158

A 50-kilovolt tetrode for use in pulse-modulator and switch-tube applications. The Y-158 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	E. F. Johnson Co. No. 122-275
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

D-C PLATE VOLTAGE	50 kVdc
D-C SCREEN VOLTAGE	2 kVdc
PEAK PLATE CURRENT	4 a
PLATE DISSIPATION	250 W
SCREEN DISSIPATION	25 W
GRID DISSIPATION	5 W

TYPICAL OPERATION

D-C Plate Voltage	49.7 kVdc
D-C Screen Voltage	1 kVdc
Pulse Plate Voltage	48 kV
Pulse Plate Current	4 a
Peak Drive Power	415 W
Peak Output Power	192 kw
Duty	1.7 %

TRAVELING WAVE TUBE

X778

The Eimac X778 is a ruggedized, ceramic and metal, periodic-permanent-magnet focused, power-amplifier traveling-wave tube. The use of temperature-compensated permanent magnets permits operation of this tube under conditions of temperature extremes without degradation of performance.

FREQUENCY RANGE
5.0 to 11.0 kMc

MINIMUM CW OUTPUT POWER
1 watt

SMALL SIGNAL POWER GAIN
60 db

CHARACTERISTICS

Cathode: Oxide-coated, unipotential	
Heater:	
Voltage	6.3 volts
Current	0.6 ampere
Focusing: Periodic permanent magnets	
Noise Figure	25 to 34 db
R-F Connectors:	
Input	Type TNC
Output	Type TNC
Maximum Dimensions:	
Length	16.25 inches
Diameter	3.0 inches
Net Weight	6.0 pounds
Cooling	Conduction

MAXIMUM RATINGS

ANODE VOLTAGE	3000 Vdc
CATHODE CURRENT	30 mAdc
FOCUS ELECTRODE VOLTAGE	−100 Vdc

TYPICAL OPERATION

Frequency	7500 Mc
Anode Voltage	2700 Vdc
Power Output	1.0 watts
Cathode Current	26 mAdc
Collector Current	22 mAdc
Focus Electrode Voltage	−10 Vdc

VOLTAGE TUNEABLE MAGNETRON

X747

The X-747 is a ruggedized, voltage tuneable magnetron capable of providing a minimum output power of 100 millivolts over the frequency range of 400 to 1000 megacycles. This tube may be used as a swept oscillator in test equipments or in military applications encountering severe environmental conditions.

The all metal and ceramic construction results in a compact, lightweight unit suitable for use in airborne applications.

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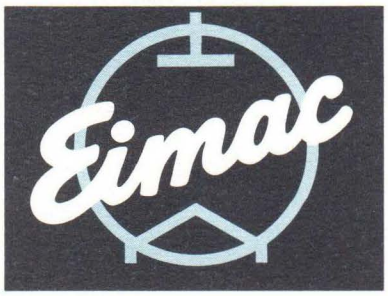

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